

STAN D. WULLSCHLEGER

Environmental Sciences Division, Oak Ridge National Laboratory
P.O. Box 2008, Oak Ridge, TN 37831-6301
Tel (865) 574-7839
E-mail wullschlegsd@ornl.gov

ResearcherID (<http://www.researcherid.com/rid/B-8297-2012>)

ORCID (<http://orcid.org/0000-0002-9869-0446>)

EDUCATION

Ph.D. Crop Physiology, University of Arkansas – 1990
M.S. Tree Physiology, Colorado State University – 1982
B.S. Forest Management, Colorado State University – 1979

STATEMENT OF RESEARCH AND LEADERSHIP INTERESTS

More than twenty-five years of experience in science, science leadership, and organizational management of large projects and programs, including serving as Director of Oak Ridge National Laboratory's Environmental Sciences Division and Climate Change Science Institute. In these roles provided scientific leadership, strategic planning, sponsor interaction, and staff development for a combined \$70 million organization that encompassed more than 200 scientists, technicians, students, and guests. Research interests include characterizing plant response to environmental change; modeling plant, regional, and global carbon and water cycles; and incorporating emerging capabilities of molecular biology into studies of plant physiology and ecology. Insights gained through these investigations are used to develop a predictive understanding of land surface processes and their response to environmental and climatic change.

PROFESSIONAL EXPERIENCE

Director, Climate Change Science Institute (2017–present); Oak Ridge National Laboratory, Oak Ridge, Tennessee. Develop and execute strategic vision for an institute build on pillars of ecosystem science, multi-scale models, data and information systems, and resilience of natural and built environments.

Director, Environmental Sciences Division (2017–present); Oak Ridge National Laboratory, Oak Ridge, Tennessee. Provide scientific leadership, strategic planning, and staff development for a large, multi-disciplinary organization that encompasses more than 165 scientists, technicians, students, and guests across the Earth, environmental, and climate sciences.

Interim Director, Environmental Sciences Division (2016–2017); Oak Ridge National Laboratory, Oak Ridge, Tennessee. Implement strategic planning for an organization that encompasses more than 165 scientists, technicians, students, and guests.

Initiative Review Committee Chair (2015–2017); Laboratory Directed Research and Development (LDRD), Discovery Science and Innovation (2015–present); Oak Ridge National Laboratory, Oak Ridge, Tennessee.

UT-Battelle Corporate Fellow (2013–present); Environmental Sciences Division, Oak Ridge National Laboratory, Oak Ridge, Tennessee.

Project Director, Next-Generation Ecosystem Experiments (NGEE Arctic) (2010–present); Environmental Sciences Division, Oak Ridge National Laboratory, Oak Ridge, Tennessee. Serve as Director and Principal Investigator (PI) for an interdisciplinary team of 140 scientists from four national laboratories and three universities all working to develop advanced Earth Systems Models that are capable

of predicting how permafrost thaw and degradation in a warming Arctic will impact regional and global climate systems.

Lead Scientist, Carbon Sequestration in Terrestrial Ecosystems (CSiTE) (2008–2012); Environmental Sciences Division, Oak Ridge National Laboratory, Oak Ridge, Tennessee. Coordinate a three national laboratory effort to understand the chemical, physical, and biological mechanisms that regulate the soil carbon cycle.

Laboratory Directed Research and Development (LDRD) Initiative Review Committee Chair, Biomass Production and Conversion for Energy and Materials (2008–2010); Oak Ridge National Laboratory, Oak Ridge, Tennessee.

Interim Division Director (2008–2009); Environmental Sciences Division, Oak Ridge National Laboratory, Oak Ridge, Tennessee. Provide scientific leadership and operational oversight for a large, multi-disciplinary organization that encompassed more than 165 scientists, technicians, students, and guests.

Group Leader, Plant Systems Biology (2005–2010); Environmental Sciences Division, Oak Ridge National Laboratory, Oak Ridge, Tennessee. Provide scientific leadership and mentoring to a highly talented and multi-disciplinary group of researchers involved in applying genetics and molecular biology to questions of interest to plant biology, bioenergy crop development, carbon sequestration, and ecosystem genomics.

Distinguished R&D Scientist (2005–2013); Environmental Sciences Division, Oak Ridge National Laboratory, Oak Ridge, Tennessee.

Lead, Detection and Simulation of Ecosystem Response (2005–2007), Oak Ridge National Laboratory, Oak Ridge, Tennessee. Led an initiative to apply new technology in ecology. Areas of interest include sensors and sensor networks, next-generation facilities, and simulation of terrestrial ecosystems.

Senior R&D Staff Scientist (2002–2005); Environmental Sciences Division, Oak Ridge National Laboratory, Oak Ridge, Tennessee.

Staff Research Member (1995–2002); Environmental Sciences Division, Oak Ridge National Laboratory, Oak Ridge, Tennessee.

Staff Research Associate (1992–1995); Environmental Sciences Division, Oak Ridge National Laboratory, Oak Ridge, Tennessee.

Alexander Hollaender Distinguished Postdoctoral Fellow (1990–1992); Environmental Sciences Division, Oak Ridge National Laboratory, Oak Ridge, Tennessee.

Research Assistant (1985–1990); Department of Agronomy, University of Arkansas, Fayetteville, Arkansas.

Plant Physiologist (1981–1985); US Department of Agriculture-Agricultural Research Service, Fort Collins, Colorado.

Graduate Research Assistant (1979–1981); Department of Forest and Wood Sciences, Colorado State University, Fort Collins, Colorado.

PROFESSIONAL AWARDS AND HONORS

- Outstanding Alumnus, Crop, Soil, and Environmental Sciences (2016), University of Arkansas
- UT-Battelle Corporate Fellow (2013)
- UT-Battelle Awards Night Recipient, Science Communicator (2013)

- UT-Battelle Awards Night Director's Award for Outstanding Team Accomplishment (2007)
- UT-Battelle Awards Night Winner, Scientific Research Team (2007)
- Scientific Achievement Award (1998), Environmental Sciences Division, Oak Ridge, TN
- Alexander Hollaender Distinguished Postdoctoral Fellowship (1990), ORAU, Oak Ridge, TN
- Outstanding Graduate Student Award (1990), American Society of Agronomy
- Gerald O. Mott Scholarship (1989), Crop Science Society of America
- BASF Outstanding Presentation Award (1989), Beltwide Cotton Production Research Conferences
- Aubrey E. Harvey Award (1988), Sigma Xi Research Society, University of Arkansas
- Outstanding Agronomy Ph.D. Student (1987), Department of Agronomy, University of Arkansas
- Hill Memorial Fellowship (1981), Department of Forest Science, Colorado State University
- Colorado Graduate Scholarship (1980), Graduate School, Colorado State University.

MEMBERSHIP IN PROFESSIONAL SOCIETIES

American Geophysical Union
Ecological Society of America

SERVICE TO OAK RIDGE NATIONAL LABORATORY

- Faculty Appointment, Bredesen Center for Interdisciplinary Research and Graduate Education, University of Tennessee, Knoxville (2015–present)
- ORNL Wigner Fellow Committee (2015–present)
- Initiative Review Committee Chair, LDRD Discovery and Innovation (2014–present)
- ORNL Mentor–Protégé Program (2013–present)
- Young Evolving Scientist Seminar Series (YESSS), Mentor (2012–2015)
- Scientific Advisory Board, Engineering CAM Metabolism for Marginal Lands (2013–present)
- Alvin M. Weinberg Postdoctoral Fellowship Committee (2008–2010)
- LDRD Selection and Review Panel – Understanding Climate Change Impacts (2009)
- LDRD Selection and Review Panel – Systems Biology and the Environment (2007–2009)
- Seed Fund Committee (2005–2007)
- UT-Battelle Awards Night Selection Committee (2008–2009) – Distinguished Scientist, Early Career Award for Scientific Accomplishment, and Scientific Research
- UT-Battelle Awards Night Selection Committee (2008–009) – Administrative Support (Team or Exempt Individual), Administrative Support, Nonexempt, and Esprit de Corps
- Environmental Sciences Division Awards Committee (2002–2005) – Technical, Operational, and Administrative Support
- Workshop Organization – Moving Towards an Ecological Genomics Initiative: Putting Genomics to Work in Ecology and the Environmental Sciences (2005), Oak Ridge Center for Advanced Studies.

SERVICE TO THE SCIENTIFIC COMMUNITY

- E3SM Laboratory Managers Group, Department of Energy (DOE), Office of Science, Biological and Environmental Research Program (BER)
- ESS Cyberinfrastructure Executive Committee, DOE, Office of Science, BER
- Science Advisory Committee, Barrow Environmental Observatory, Barrow, Alaska (2013–present)
- Science Definition Team, NASA Arctic-Boreal Vulnerability Experiment (ABoVE) (2013–2014)
- Editor, *Tree Physiology* (2000–2007)
- Editorial Review Board, *Tree Physiology* (1992–present)
- Ecological Society of America Student Awards Committee (Buell and Braun Awards, 2007–2012)
- American Geophysical Union (Student Poster and Presentation Awards, 2010–present)

- Research Council, Southern Man and the Biosphere (1999–2005)
- Reviewer for scientific journals, including *Science*, *Nature*, *Biogeosciences*, *New Phytologist*, *Global Change Biology*, *Plant Cell and Environment*, *Plant Physiology*, *Plant Cell*, *GCB Bioenergy*, *Ecology*, *Ecology Letters*, *American Journal of Botany*, *Journal of Experimental Botany*, *Tree Physiology*, *Forest Ecology and Management*, *Physiologia Plantarum*, *Journal of Environmental Quality*, *Agricultural and Forest Meteorology*, *Journal of Geophysical Research*, and *Functional Ecology*

ADDITIONAL TRAINING

LeaderCast (2014)

Developing Leadership Potential (2006)

PUBLICATIONS

BOOKS EDITED

1. Hanson, P.J. and S.D. Wullschleger (eds.) *North American Temperate Deciduous Forest Responses to Changing Precipitation Regimes*. 2003. Springer, New York, NY. Pp. 472.

BOOK CHAPTERS (21 published)

1. Oosterhuis, D. M. and S. D. Wullschleger. 1989. Psychrometric water potential analysis in leaf discs. pp. 113-133. *In* *Modern Methods of Plant Analysis, New Series, Volume 9, Gases in Plant and Microbial Cells*. H. F. Linskens and J. F. Jackson (eds.). Springer-Verlag, Berlin.
2. Wullschleger, S.D., W.M. Post and A.W. King. 1995. On the potential for a CO₂ fertilization effect in forest trees - An assessment of 58 controlled-exposure studies and estimates of the biotic growth factor. Pp.85-107. *In* *Biotic Feedbacks in the Global Climate System: Will Warming Feed the Warming?* G.M. Woodwell and F.T. Mackenzie (eds.). Oxford Press.
3. Norby, R.J., E.G. O'Neill and S.D. Wullschleger. 1995. Belowground responses to atmospheric carbon dioxide in forests. Pp. 397-418. *In* *Carbon Forms and Functions in Forest Soils*. W.F. McFee and J.M. Kelly (eds.). American Society of Agronomy, Madison, WI.
4. Norby, R.J., S.D. Wullschleger and C.A. Gunderson. 1996. Tree Responses to Elevated CO₂ and Implications for Forests. Pp. 1-21. *In* *Carbon Dioxide and Terrestrial Ecosystems*. G.W. Koch and H.A. Mooney (eds.). Academic Press.
5. McLaughlin, S.B., J.D. Joslin, A. Stone, R. Wimmer and S.D. Wullschleger. 1996. Effects of acid deposition on calcium nutrition and health of Southern Appalachian Spruce-Fir forests. *In* *Proc. IUFRO Symp. Air Pollution and Multiple Stresses*. R. Cox, K.Percy, K. Jensen and C. Simpson (eds.). p. 207-215. Fredericton, New Brunswick, Canada. September 7-9, 1994.
6. Post, W.M., A.W. King and S.D. Wullschleger. 1996. Soil organic matter models and global estimates of soil organic carbon. D.S. Powlson, P. Smith, and J.U. Smith (eds.), NATO Advanced Science Institute, Series I, vol. 38:201-222.
7. Wullschleger, S.D., R.J. Norby and C.A. Gunderson. 1997. Forest trees and their response to atmospheric CO₂ Enrichment - A Compilation of Results. Pg. 79-100. *In* *Advances in Carbon Dioxide Effects Research*. L.H. Allen, Jr. (ed.). American Society of Agronomy Special Publication
8. McLaughlin, J.D. Joslin, W. Robarge, A. Stone, R. Wimmer and S.D. Wullschleger. 1997. The impact of acidic deposition and global change on high elevation Southern Appalachian Spruce-Fir forests. Pg. 255-277. *In* *The Productivity and Sustainability of Southern Forest Ecosystems in a Changing Environment*. R.A. Mickler and S. Fox (eds.). Forest Service, Southern Global Change Program.

9. Martin, M., S. Wullschleger, and C. Garten. 2002. Laser-induced breakdown spectroscopy for environmental monitoring of soil carbon and nitrogen. *In* T. VoDinh and S. Buttgenbach (eds.) *Advanced Environmental Sensing Technology*. Pg. 188-195. Proceedings of the Society of Photo-optical Instrument Engineers.
10. Wullschleger, S.D. and P.J. Hanson. 2003. Sensitivity of saplings and mature-tree water use to altered precipitation regimes. pg. 87-99. *In* *North American Temperate Deciduous Forest Responses to Changing Precipitation Regimes*. P.J. Hanson and S.D. Wullschleger (eds.). Springer, New York.
11. Wullschleger S.D., P.J. Hanson and D.E. Todd. 2003. Forest water use and the influence of precipitation change. pg. 363-377. *In* *North American Temperate Deciduous Forest Responses to Changing Precipitation Regimes*. P.J. Hanson and S.D. Wullschleger (eds.). Springer, New York, NY.
12. Wullschleger S.D., C.A. Gunderson, L.M. Tharp, D.C. West and W.M. Post. 2003. Simulated patterns of forest succession and productivity as a consequence of altered precipitation. pg. 433-446. *In* *North American Temperate Deciduous Forest Responses to Changing Precipitation Regimes*. P.J. Hanson and S.D. Wullschleger (eds.). Springer, New York.
13. Hanson, P.J., N.T. Edwards, T.J. Tschaplinski, S.D. Wullschleger and J.D. Joslin. 2003. Estimating the net primary and net ecosystem production of a southeastern upland *Quercus* forest from an 8-year biometric record. pg. 378-395. *In* *North American Temperate Deciduous Forest Responses to Changing Precipitation Regimes*. P.J. Hanson and S.D. Wullschleger (eds.). Springer, New York.
14. Norby R.J., L.A. Joyce and S.D. Wullschleger. 2004. Modern and future forests in a changing atmosphere. Pg. 394-414. *In* *History of Atmospheric CO₂ and the Impacts on Plants, Animals, and Ecosystems*. J. Ehleringer, T. Cerling and D. Dearing (eds.). Springer, New York.
15. Tuskan, G.A., S.D. Wullschleger, J.H. Cushman, R.L. Graham, and S.R. Thomas. 2004. Mitigation of greenhouse warming, biomass-based energy supply systems and accelerated domestication of energy crops. *In* N.J. Rosenberg, F.B. Metting, and R.C. Izuaralde (eds.) *Application of Biotechnology to Mitigation of Greenhouse Warming*, St. Michaels, MD, April 13-15, 2003.
16. Norby R.J., S.D. Wullschleger, P.J. Hanson, C.A. Gunderson, T.J. Tschaplinski, J.D. Jastrow. 2006. CO₂ enrichment of a deciduous forest: The Oak Ridge FACE Experiment. pp. 231-251 *In* *Managed Ecosystems and CO₂: Case Studies, Processes, and Perspectives* (Nösberger J., Long S.P., Norby R.J., Stitt M., Hendrey G.R., Blum H, editors). *Ecological Studies*, Vol. 187. Springer, Berlin.
17. Martin, M.Z., S.D. Wullschleger, C.T. Garten, and P.V. Palumbo. 2007. Measurement of carbon for carbon sequestration and site monitoring. *In* J.P. Singh and S.N. Thakur (eds.) *Laser Induced Breakdown Spectroscopy*, Elsevier Science, The Netherlands.
18. Wullschleger S.D. and D.J. Weston. 2010. Microarrays and Molecular Phenotypes. *In* J.A. DeWoody (ed.) *Molecular Insights into Natural Resource Conservation and Management*, Cambridge University Press.
19. Li T., D. Weston, A. Karve, J. L. Labbe, L. E. Gunter, O. Sukumar, A. Bourland, J.-G. Chen, S. D. Wullschleger, T J. Tschaplinski and G. A. Tuskan. 2011. Innovation biological solutions to challenges in sustainable biofuels production. Pg. 376-414. *In* M. Aurelio dos Santos Bernardes (ed.) *Biofuels Production – Recent Developments and Prospects*, InTech. 576pp.
20. Cseke, L.J., S.D. Wullschleger, A. Sreedasyan, G. Trivedi, P.E. Larsen, and F.R. Collart. 2013. Carbon Sequestration. Pp. 415-455. *In* C. Kole (ed.), *Genomics and Breeding for Climate-Resilient Crops*, Vol. 2, Springer-Verlag, Berlin Heidelberg. http://dx.doi.org/10.1007/978-3-642-37048-9_12
21. Zegada-Lizarazu, W., S.D. Wullschleger, S.S. Nair, and A. Monti. 2013. Crop physiology. Pp. 55-86. *In* A. Monti (ed.), *Switchgrass: A Valuable Biomass Crop for Energy*, Springer-Verlag, London.

http://dx.doi.org/10.1007/978-1-4471-2903-5_3

REFEREED PUBLICATIONS (195 published; 17 cited 100 times or more; h-index 54)

1. Kidd, F. A., S. D. Wullschleger, K. Dawley and C. P. P. Reid. 1982. Use of Gentamicin in axenic culturing of ectomycorrhizal plants. *Applied Environmental Microbiology* 44:506-508.
2. Schaffer, B., F. G. Hawksworth, S. D. Wullschleger and C. P. P. Reid. 1983. Cytokinin-like activity related to host reactions to Dwarf mistletoe (*Arceuthobium* spp.). *Forest Science* 29:66-70.
3. Fiscus, E. L., S. D. Wullschleger and H. R. Duke. 1984. Integrated stomatal opening as an indicator of water stress in *Zea*. *Crop Science* 24:245-249.
4. Wullschleger, S. D. and D. M. Oosterhuis. 1986. A rapid leaf- disc sampler for psychrometric water potential measurements. *Plant Physiology* 81:684-685.
5. Tyree, M. T., E. L. Fiscus, S. D. Wullschleger and M. A. Dixon. 1986. Detection of xylem cavitation in corn under field conditions. *Plant Physiology* 82:597-599.
6. Wullschleger, S. D. and D. M. Oosterhuis. 1987. Electron microscope study of cuticular abrasion on cotton leaves in relation to water potential measurements. *Journal of Experimental Botany* 38:660-667.
7. Oosterhuis, D. M. and S. D. Wullschleger. 1987. Water flow through cotton roots in relation to xylem anatomy. *Journal of Experimental Botany* 38:1866-1874.
8. Oosterhuis, D. M. and S. D. Wullschleger. 1987. Osmotic adjustment in cotton (*Gossypium hirsutum* L.) leaves and roots in response to water stress. *Plant Physiology* 84:1154-1157
9. Oosterhuis, D. M., M. L. Parker, S. D. Wullschleger and K. S. Kim. 1988. The citrus leaf cuticle in relation to measurement of leaf water potential using thermocouple psychrometers. *Plant, Cell and Environment* 11:129-135.
10. Wullschleger, S. D., M. A. Dixon and D. M. Oosterhuis. 1988. Field measurement of leaf water potential with a temperature-corrected *in situ* thermocouple psychrometer. *Plant, Cell and Environment* 11:129-135.
11. Wullschleger, S. D. and D. M. Oosterhuis. 1989. The occurrence of an internal cuticle in cotton (*Gossypium hirsutum* L.) leaf stomates. *Environmental and Experimental Botany* 29:229-235.
12. Wullschleger, S. D. and D. M. Oosterhuis. 1989. Water use efficiency as a function of leaf age and position within the cotton canopy. *Plant and Soil* 120:79-85.
13. Oosterhuis, D. M., H. D. Scott, R. E. Hampton and S. D. Wullschleger. 1990. Physiological response of two soybean [*Glycine max* (L.) Merr] cultivars to short-term soil flooding. *Environmental and Experimental Botany* 30:85-92.
14. Wullschleger, S. D. and D. M. Oosterhuis. 1990. Photosynthesis of individual field-grown cotton leaves during ontogeny. *Photosynthesis Research* 23:163-170.
15. Oosterhuis, D. M., S. D. Wullschleger, R. E. Hampton and R. A. Ball. 1990. Physiological response of rice (*Oryza sativa* L.) to fenoxaprop-induced injury. *Weed Science* 38:459-462.
16. West, C. P., D. M. Oosterhuis and S. D. Wullschleger. 1990. Osmotic adjustment in tissues of tall fescue in response to water deficit. *Environmental and Experimental Botany* 30:149-156.
17. Wullschleger, S. D. and D. M. Oosterhuis. 1990. Photosynthetic carbon production and use by developing cotton leaves and bolls. *Crop Science* 30:1259-1264.

18. Wullschleger, S. D. and D. M. Oosterhuis. 1990. Photosynthetic and respiratory activity of fruiting forms within the cotton canopy. *Plant Physiology* 94:463-469.
19. Oosterhuis, D. M. and S. D. Wullschleger. 1990. Drought tolerance and irrigation scheduling of vegetable crops. *Acta Horticulturae* 278:351-358.
20. Wullschleger, S. D. and D. M. Oosterhuis. 1990. Canopy development and photosynthesis of cotton as influenced by nitrogen nutrition. *Journal of Plant Nutrition* 13:1141-1151.
21. Hampton, R. E., S. D. Wullschleger and D. M. Oosterhuis. 1990. Impact of *Verticillium* wilt infection on net photosynthesis, respiration, and photorespiration of field-grown cotton. *Physiological and Molecular Plant Pathology* 37:271-280.
22. Wullschleger, S. D. and C. P. P. Reid. 1990. Implication of ectomycorrhizal fungi in the cytokinin relations of loblolly pine. *New Phytologist* 116:681-688.
23. Wullschleger, S. D., J. E. Cahoon, J. A. Ferguson and D. M. Oosterhuis. 1991. SURFTEMP: Simulation of soil surface temperature using the energy balance equation. *Journal of Agronomic Education* 20:11-15.
24. Oosterhuis, D. M., R. E. Hampton and S. D. Wullschleger. 1991. Water deficit effects on the cotton leaf cuticle and the efficiency of defoliants. *Journal of Production Agriculture* 4:260-265.
25. Wullschleger, S. D. and D. M. Oosterhuis. 1991. Osmotic adjustment and the growth response of seven vegetable crops following water-deficit stress. *HortScience* 26:1210-1212.
26. Kirkpatrick, T. L., D. M. Oosterhuis and S. D. Wullschleger. 1991. Interaction of root-knot nematodes and water stress in two cotton cultivars. *Journal of Nematology* 23:462-467.
27. Wullschleger, S. D., D. M. Oosterhuis, R. E. Hurrion and P. J. Hanson. 1991. Evidence for light-dependent recycling of respired CO₂ by the cotton fruit. *Plant Physiology* 97:574-579.
28. Wullschleger, S. D. and D. M. Oosterhuis. 1991. Photosynthesis, transpiration, and water-use efficiency of cotton leaves and fruit. *Photosynthetica* 25:505-515.
29. Wullschleger, S. D., R. J. Norby and D. L. Hendrix. 1992. Carbon exchange rates, chlorophyll concentration, and carbohydrate status of two forest tree species to carbon dioxide enrichment. *Tree Physiology* 10:21-31. **Cited 112 times.**
30. Wullschleger, S. D., P. J. Hanson and R. F. Sage. 1992. PHOTOBIO: Modeling the stomatal and biochemical control of plant gas-exchange. *Journal of Natural Resources and Life Sciences Education* 21:141-145.
31. Wullschleger, S. D. and D. M. Oosterhuis. 1992. Canopy leaf area development and age-class dynamics in cotton. *Crop Science* 32:451-456.
32. Norby, R. J., C. A. Gunderson, S. D. Wullschleger, E. G. O'Neill and M. K. McCracken. 1992. Productivity and compensatory growth responses of yellow-poplar trees to elevated CO₂. *Nature* 357:322-324. **Cited 272 times.**
33. Wullschleger, S. D., R. J. Norby and C. A. Gunderson. 1992. Growth and maintenance respiration in leaves of *Liriodendron tulipifera* L. saplings exposed to long-term carbon dioxide enrichment in the field. *New Phytologist* 121:515-523.
34. Wullschleger, S. D., P. J. Hanson and C. A. Gunderson. 1992. Assessing the influence of exogenous ethylene on electron transport and fluorescence quenching in leaves of *Glycine max*. *Environmental and Experimental Botany* 32:449-455.
35. Wullschleger, S.D. and R.J. Norby. 1992. Respiratory cost of leaf growth and maintenance in white

- oak saplings exposed to atmospheric CO₂ enrichment. *Canadian Journal of Forest Research* 22:1717-1721.
36. Edwards, G.S., S.D. Wullschleger and J.M. Kelly. 1993. Growth and physiology of northern red oak: Preliminary comparisons of mature and seedling responses to ozone. *Environmental Pollution* 83:215-221.
 37. Hanson, P.J., S.D. Wullschleger, S.A. Bohlman and D.E. Todd. 1993. Seasonal and topographic patterns of forest floor CO₂ efflux from an upland oak forest. *Tree Physiology* 13:1-15. **Cited 256 times.**
 38. Wullschleger, S.D. 1993. Biochemical limitations to carbon assimilation in C₃ plants - A retrospective analysis of the A/C_i curves from 109 species. *Journal of Experimental Botany* 44:907-920. **Cited 612 times.**
 39. Gunderson, C.A. and S.D. Wullschleger. 1993. Photosynthetic acclimation of trees to a doubling of atmospheric CO₂: A broader perspective. *Photosynthesis Research* 39:369-388. **Cited 268 times.**
 40. Gunderson, C.A., R.J. Norby and S.D. Wullschleger. 1993. Foliar gas exchange of two deciduous hardwoods during three years of growth in elevated CO₂: No loss of photosynthetic enhancement. *Plant, Cell and Environment* 16:797-807. **Cited 136 times.**
 41. Tschaplinski, T.J., R.J. Norby and S.D. Wullschleger. 1993. Responses of loblolly pine seedlings to elevated CO₂ and fluctuating water supply. *Tree Physiology* 13:283-296.
 42. Luxmoore, R.J., S.D. Wullschleger and P.J. Hanson. 1993. Forest responses to CO₂ enrichment and climate warming. *Water, Soil, and Air Pollution* 70: 309-323.
 43. Wullschleger, S.D., L.H. Ziska and J.A. Bunce. 1994. Respiratory responses of higher plants to atmospheric CO₂ enrichment. *Physiologia Plantarum* 90:221-229. **Cited 102 times.**
 44. Bondada, B.R., Oosterhuis, D.M., Wullschleger, S.D., Kim, K.S. and Harris, W.M. 1994. Anatomical considerations related to photosynthesis in cotton (*Gossypium hirsutum* L.) leaves, bracts, and the capsule wall. *Journal of Experimental Botany* 45:111-118.
 45. Wullschleger, S.D., Lynch, J.P. and Berntson, G.M. 1994. Modeling the belowground response of plants and soil biota to edaphic and climatic change - What can we expect to gain? *Plant and Soil* 165:149-160.
 46. Wullschleger, S.D., R.J. Norby and P.J. Hanson. 1995. Growth and maintenance respiration in stems of *Quercus alba* after four years of CO₂ enrichment. *Physiologia Plantarum* 93:47-54.
 47. Hanson, P.J., L.J. Samuelson, S.D. Wullschleger, T.A. Tabberer and G.S. Edwards. 1994. Seasonal patterns of light-saturated photosynthesis and leaf conductance for mature and seedling *Quercus rubra* L. foliage: differential sensitivity to ozone. *Tree Physiology* 14:1351-1366.
 48. Norby, R.J., S.D. Wullschleger, C.A. Gunderson and C.T. Nietch. 1995. Increased growth efficiency of *Quercus alba* trees to a CO₂-enriched atmosphere. *New Phytologist* 131:91-97.
 49. King, A.W., W.R. Emanuel, S.D. Wullschleger and W.M. Post. 1995. In search of the missing carbon sink: a model of terrestrial biospheric response to land-use change and atmospheric CO₂. *Tellus* 47B:501-519.
 50. Kelly, J.M., L.J. Samuelson, G. Edwards, P.J. Hanson, D. Kelting, A. Mays and S.D. Wullschleger. 1995. Are seedlings reasonable surrogates for trees? An analysis of ozone impacts on *Quercus rubra*. *Water, Soil, and Air Pollution* 85:1317-1324.
 51. Wullschleger, S.D., P.J. Hanson and G.S. Edwards. 1996. Growth and maintenance respiration in

- leaves of northern red oak seedlings and mature trees after three years of ozone exposure. *Plant, Cell and Environment* 19:577-584.
52. Wullschleger, S.D., M.A. Sanderson, S.B. McLaughlin, D.P. Biradar and A.L. Rayburn. 1996. Photosynthetic rates and ploidy levels among populations of switchgrass. *Crop Science* 36:306-312.
 53. Gunter, L.E., G.A. Tuskan and S.D. Wullschleger. 1996. Diversity among populations of switchgrass based on RAPD markers. *Crop Science* 36:1017-1022.
 54. Wullschleger, S.D., P.J. Hanson and D.E. Todd. 1996. Measuring stem water content in four deciduous hardwoods with a time domain reflectometer. *Tree Physiology* 16:809-815.
 55. Sanderson, M.A., R.L. Reed, S.B. McLaughlin, S.D. Wullschleger, B.V. Conger, D.J. Parrish, D.D. Wolf, C. Taliaferro, A.A. Hopkins, W.R. Ocumpaugh, M.A. Hussey, J.C. Read and C.R. Tischler. 1996. Switchgrass as a sustainable bioenergy crop. *Bioresource Technology* 56:83-93. **Cited 197 times.**
 56. Post, W.M., A.W. King and S.D. Wullschleger. 1997. Historical variations in terrestrial biospheric carbon storage. *Global Biogeochemical Cycles* 11:99-109.
 57. King, A.W., W.M. Post and S.D. Wullschleger. 1997. The potential response of terrestrial carbon storage to changes in climate and atmospheric CO₂. *Climatic Change* 35:199-227.
 58. Norby, R.J., N.T. Edwards, J.S. Riggs, C.H. Abner, S.D. Wullschleger, C.A. Gunderson, E.G. O'Neill. 1997. Temperature-controlled open-top chambers for global change research. *Global Change Biology* 3:259-267.
 59. Wullschleger, S.D., R.J. Norby, J.C. Love and C.D. Runck. 1997. Energetic cost of tissue construction in yellow-poplar and white oak saplings exposed to long-term CO₂ enrichment. *Annals of Botany* 80:289-297.
 60. Wullschleger, S.D., P.J. Hanson and T.J. Tschaplinski. 1998. Whole-plant water flux in understory red maple exposed to altered precipitation regimes. *Tree Physiology* 18:71-79.
 61. Wullschleger, S.D., F.C. Meinzer and R.A. Vertessy. 1998. A review of whole-plant water use studies in trees. *Tree Physiology* 18:499-512. **Cited 284 times.**
 62. Norby, R.J., S.D. Wullschleger, C.A. Gunderson, D.W. Johnson and R. Ceulemans. 1999. Tree responses to rising CO₂ in field experiments: Implications for the future forest. *Plant, Cell and Environment* 22:683-714. **Cited 517 times.**
 63. Garten, C.T. and S.D. Wullschleger. 1999. Soil carbon inventories under a bioenergy crop (Switchgrass): Measurement limitations. *Journal of Environmental Quality* 28:1359-1365.
 64. Edwards, N.T. and S.D. Wullschleger. 1999. Carbon dioxide efflux rates from stems of mature *Quercus alba* L. and *Acer rubrum* L. trees do not appear to be affected by sap flow. *Journal of Sustainable Forestry* 10:125-11.
 65. Drake, B.G., J. Azcon-Bieto, J. Berry, J. Bunce, R. Dahlman, P. Dijkstra, J. Farrar, R. Gifford, M. Gonzalez-Meler, G. Koch, H. Lambers, J. Siedow and S. Wullschleger. 1999. Does elevated atmospheric CO₂ concentration inhibit mitochondrial respiration in green plants? *Plant, Cell and Environment* 22:649-657. **Cited 103 times.**
 66. Gunderson, C.A., R.J. Norby and S.D. Wullschleger. 2000. Acclimation of photosynthesis and respiration to simulated climatic warming in northern and southern populations of *Acer saccharum* Marsh: Laboratory and field evidence. *Tree Physiology* 20:87-96.
 67. Becker, P., F.C. Meinzer and S.D. Wullschleger. 2000. Hydraulic limitation of tree height: a critique.

Functional Ecology 14:4-11.

68. Garten, C.T., Jr. and S.D. Wullschleger. 2000. Soil carbon dynamics beneath switchgrass as indicated by stable isotope analysis. *Journal of Environment Quality* 29:645-653.
69. Wullschleger, S.D. and A.W. King. 2000. Radial variation in sap velocity as a function of stem diameter and sapwood thickness in yellow-poplar trees. *Tree Physiology* 20:511-518.
70. Wullschleger, S.D., K.B. Wilson and P.J. Hanson. 2000. Environmental control of whole-plant transpiration, canopy conductance and estimates of the decoupling coefficient for large red maple trees. *Agricultural and Forest Meteorology* 104:157-168.
71. Wullschleger, S.D., P.J. Hanson and D.E. Todd. 2001. Transpiration from a multi-species deciduous forest as estimated by xylem sap flow techniques. *Forest Ecology and Management* 143:205-213.
72. Wilson, K.B., P.J. Hanson, P.J. Mulholland, D.D. Baldocchi and S.D. Wullschleger. 2000. A comparison of methods for determining forest evapotranspiration rates and its components across scales: Sap-flow, soil moisture budget, eddy covariance and catchment water balance. *Agricultural and Forest Meteorology* 106:153-168. **Cited 293 times.**
73. Wullschleger, SD and R.J. Norby. 2001. Sap velocity and canopy transpiration for a 12-year-old sweetgum plantation exposed to free-air CO₂ enrichment. *New Phytologist* 150: 489-498.
74. Wullschleger, S.D., R.B. Jackson, W.S. Currie, A.D. Friend, Y. Luo, F. Mouillot, Y. Pan and G. Shao. 2001. Are below-ground processes needed in gap models to predict the response of forest succession as a consequence of global climatic change? *Climatic Change* 51:449-473.
75. Bugmann, H.K.M., A.M. Solomon, S.D. Wullschleger, D.T. Price, D.F. Clark and K. Ogle. 2001. Comparing the performance of forest gap models in North America. *Climatic Change* 51:349-388.
76. Wullschleger, S.D., T.J. Tschaplinski and R.J. Norby. 2001. Plant water relations and elevated CO₂ – Interactions with drought. *Plant, Cell Environment* 25:319-331. **Cited 199 times.**
77. Gunderson, C.A., J.D. Sholtis, S.D. Wullschleger, D.T. Tissue, P.J. Hanson and R.J. Norby. 2001. Environmental and stomatal control of photosynthetic enhancement in the canopy of a sweetgum (*Liquidambar styraciflua* L.) plantation during three years of CO₂ enrichment. *Plant, Cell Environment* 25:379-394.
78. Wullschleger, S.D., C.A. Gunderson, P.J. Hanson, K.B. Wilson and R.J. Norby. 2002. Sensitivity of stomatal and canopy conductance to elevated CO₂ concentration – Interacting variables and perspectives of scale. *New Phytologist* 153:485-496.
79. Tissue, D.T., J.D. Lewis, S.D. Wullschleger, J.S. Amthor and O.R. Anderson. 2002. Leaf respiration at different canopy positions in sweetgum (*Liquidambar styraciflua*) grown at ambient and elevated concentrations of carbon dioxide in the field. *Tree Physiology* 22:1157-1166.
80. Norby R.J., P.J. Hanson, E.G. O'Neill, T.J. Tschaplinski, J.F. Weltzin, R.T. Hanson, W. Cheng, S.D. Wullschleger, C.A. Gunderson, N.T Edwards and D.W. Johnson. 2002. Net primary productivity of a CO₂-enriched deciduous forest and the implications for carbon storage. *Ecological Applications* 12:1261-1266. **Cited 141 times.**
81. Wullschleger, S.D., G.A. Tuskan and S.P. DiFazio. 2002. Genomics and the tree physiologist. *Tree Physiology* 22:1273-1276.
82. Wullschleger, S.D., S. Jansson and G. Taylor. 2002. Forest biology and genomics – *Populus* emerges as the perennial favorite. *Plant Cell* 14:2651-2655. **Cited 107 times.**
83. Martin, M.Z., S.D. Wullschleger, C.T. Garten, Jr. and A.V. Palumbo. 2003. Laser-induced

- breakdown spectroscopy for the environmental determination of total carbon and nitrogen in soils. *Applied Optics* 42:2072-2077.
84. Wullschleger, S.D. and S.P. DiFazio. 2003. Emerging use of gene expression microarrays in plant physiology. *Comparative and Functional Genomics* 4:216-224.
 85. McLaughlin, S.B., S.D. Wullschleger and M. Nosal. 2003. Diurnal and seasonal changes in stem increment and water use by yellow poplar trees in response to environmental stress. *Tree Physiology* 23:1125-1136.
 86. Reid, C.D., H. Maherali, H.B. Johnson, S.D. Smith, S.D. Wullschleger and R.B. Jackson. 2003. On the relationship between stomatal characters and atmospheric CO₂. *Geophysical Research Letters* 30 (vol. 19): 1983-1986.
 87. Gunter, L.E., A.S. Black, S. Ratnayeke, G.A. Tuskan and S.D. Wullschleger. 2003. Assessment of genetic similarity among 'Alamo' switchgrass seed lots using RAPD markers. *Seed Science and Technology* 31:681-689.
 88. Palumbo, A.V., J.F. McCarthy, J.E. Amonette, L.S. Fischer, S.D. Wullschleger and W.L. Daniels. 2004. Prospects for enhancing carbon sequestration and reclamation of degraded lands with fossil-fuel combustion products. *Advances in Environmental Research* 8:425-438.
 89. Hanson P.J., J.S. Amthor, S.D. Wullschleger, K.B. Wilson, R.F. Grant, A. Hartley, D. Hui, E.R. Hunt, Jr., D.W. Johnson, J.S. Kimball, A.W. King, Y. Luo, S.G. McNulty, G. Sun, P.E. Thornton, S.S. Wang, M. Williams, and R.M. Cushman. 2004. Oak forest carbon and water simulations: Model intercomparisons and evaluations against independent data. *Ecological Monographs* 74:443-489. **Cited 146 times.**
 90. Martin, M.Z., S.D. Wullschleger, C.T. Garten, A.V. Palumbo, and J.G. Smith. 2004. Elemental analysis of environmental and biological samples using laser-induced breakdown spectroscopy and pulsed Raman spectroscopy. *Journal of Dispersion Science and Technology* 25: 689-696.
 91. Wullschleger, S.D., S.B. McLaughlin, and M.P. Ayers. 2004. High-resolution analysis of stem increment and sap flow for loblolly pine trees attacked by southern pine beetle. *Canadian Journal of Forest Research* 34: 2387-2393.
 92. Palumbo, A.V., L.S. Fisher, M.Z. Martin, Z.K. Yang, J.R. Tarver, S.D. Wullschleger and W.L. Daniels. 2004. Application of emerging tools and techniques for measuring carbon and microbial communities in reclaimed mine soils. *Environmental Management* 33: S518-S527.
 93. Wullschleger, S.D., T.M. Yin, S.P. DiFazio, T.J. Tschaplinski, L.E. Gunter, M. Davis, and G.A. Tuskan. 2005. Phenotypic variation in growth and biomass distribution for two advanced-generation pedigrees of hybrid poplar (*Populus* spp.). *Canadian Journal of Forest Research* 35:1779-1789.
 94. Hanson, P.J., S.D. Wullschleger, R.J. Norby, T.J. Tschaplinski, and C.A. Gunderson. 2005. Importance of changing CO₂, temperature, precipitation and ozone on carbon and water cycles of an upland oak forest: Incorporating experimental results into model simulations. *Global Change Biology* 11:1402-1423.
 95. Madhavi, M.Z., N. Labbe, T.G. Rials, and S.D. Wullschleger. 2005. Analysis of preservative-treated wood by multivariate analysis of laser-induced breakdown spectroscopy spectra. *Spectrochimica Acta Part B – Atomic Spectroscopy* 60: 1179-1185.
 96. Wullschleger, S.D. and P.J. Hanson. 2006. Sensitivity of forest water use to altered precipitation: evidence from a long-term manipulative field study. *Global Change Biology* 12: 97-109.
 97. King, A.W., C.A. Gunderson, D.J. Weston, and S.D. Wullschleger. 2006. Plant respiration in a

- warmer world. *Science* 312: 536-537.
98. Gu, L., T. Meyers, S.G. Pallardy, P.J. Hanson, B. Yang, M. Heuer, K.P. Hosman, J.S. Riggs, D. Sluss, and S.D. Wullschleger. 2006. Direct and indirect effects of atmospheric conditions and soil moisture on surface energy partitioning revealed by a prolonged drought at a temperate forest site. *Journal of Geophysical Research-Atmospheres* 111: Art. No. D16102.
 99. McLaughlin, S.B., M. Nosal, S.D. Wullschleger, and G. Sun. 2007. Interactive effects of ozone and climate on tree growth and water use in a southern Appalachian forest in the USA. *New Phytologist* 174: 109-124.
 100. McLaughlin, S.B., S.D. Wullschleger, G. Sun, and M. Nosal. 2007. Interactive effects of ozone and climate on water use, soil moisture content and streamflow in a southern Appalachian forest in the USA. *New Phytologist* 174: 125-136.
 101. Gu, L., T. Meyers, S.G. Pallardy, P.J. Hanson, B. Yang, M. Heuer, K.P. Hosman, Q. Liu, J.S. Riggs, D. Sluss, and S.D. Wullschleger. 2007. Influences of biomass heat and biochemical energy storages on the land surface fluxes and radiative temperature. *Journal of Geophysical Research-Atmospheres* 112: Art No. D02107.
 102. Martin, M.Z., S.D. Wullschleger, A.A. Vass, R.C. Martin and H. Grissino-Mayer. 2007. High resolution laser-induced breakdown spectroscopy used in homeland security and forensic applications. *Bulletin of Laser and Spectroscopy Society of India*. 14: 23-35.
 103. Yang, B., P.J. Hanson, J.S. Riggs, S.G. Pallardy, M. Heuer, K.P. Hosman, T.P. Meyers, S.D. Wullschleger, and L. Gu. 2007. Biases of CO₂ storage in eddy covariance measurements in a forest pertinent to vertical configurations of a profile system and CO₂ density averaging. *Journal of Geophysical Research Atmospheres* 112: D20123.
 104. Wullschleger SD, Leakey DB, and St. Clair S. 2007. Functional genomics and ecology: A tale of two scales. *New Phytologist* 176: 735-739.
 105. Martin, M.Z., N. Labbe, N. Andre, R. Harris, M. Ebinger, S.D. Wullschleger and A.A. Vass. 2007. High resolution applications of laser-induced breakdown spectroscopy for environmental and forensic applications. *Spectrochimica Acta Part B – Atomic Spectroscopy* 62: 1426-1432.
 106. Sanchez F.G., M. Coleman, C.T. Garten, R.J. Luxmoore, J.A. Stanturf, C. Trettin, and S.D. Wullschleger. 2007. Soil carbon, after 3 years, under short rotation woody crops grown under varying nutrient and water availability. *Biomass and Bioenergy* 31: 793-801.
 107. Ranatunga, K., Keenan R.J., S.D. Wullschleger, W.M. Post, and M.L. Tharp. 2008. Effects of harvest management practices on forest biomass and soil carbon in eucalypt forests in New South Wales: Simulations with the forest succession model LINKAGES. *Forest Ecology and Management* 255: 2407-2415.
 108. Weston D.J., L.E. Gunter, A. Rogers, and S.D. Wullschleger. 2008. Connecting genes, coexpression modules, and molecular signatures to environmental stress phenotypes in plants. *BMC Systems Biology* 2: 16.
 109. Leakey A.D.B., Ainsworth E.A., S.M. Bernard, R.J.C. Markelz, D.R. Ort, S.A. Placella, A. Rogers, M.D. Smith, E.A. Sudderth, D.J. Weston, S.D. Wullschleger, and S.H. Yuan. 2009. Gene expression profiling: opening the black box of plant ecosystem responses to global change. *Global Change Biology* 15: 1201-1213.
 110. Yin, T.M., X.Y. Zhang, L.E. Gunter, S.X. Li, S.D. Wullschleger, M.R. Huang and G.A. Tuskan. 2009. Microsatellite primer resource for *Populus* developed from the mapped sequence scaffolds of the Nisqually-1 genome. *New Phytologist* 181: 498-503.

111. Yang X., U.C. Kalluri, S.P. DiFazio, S.D. Wullschleger, T.J. Tschaplinski, Z.M. Cheng, G.A. Tuskan. 2009. Poplar genomics: State of the science. *Critical Reviews in Plant Sciences* 28: 285-308.
112. Wullschleger S.D. D.J. Weston, and J.M. Davis. 2009. *Populus* responses to edaphic and climatic cues: emerging evidence from systems biology research. *Critical Reviews in Plant Sciences* 28: 368-374.
113. Post W.M., J.E. Amonette, R. Birdsey, C.T. Garten Jr., R.L. Graham, R.C. Izaurralde, P.M. Jardine, J. Jastrow, R. Lal, G. Marland, B.A. McCarl, A.M. Thomson, T.O. West, S.D. Wullschleger, and F.B. Metting. 2009. Terrestrial carbon sequestration – Science for enhancement and implementation. In B.J. McPherson and E.T. Sundquist, editors. *Carbon Sequestration and its Role in the Global Carbon Cycle*. AGU Monograph Series No. 183. pp. 73-88.
114. Amthor, J.S., Hanson, P.J., Norby, R.J. and Wullschleger, S.D. 2010. A comment on “Appropriate experimental ecosystem warming methods by ecosystem, objective, and practicality” by Aronson and McNulty. *Agricultural and Forest Meteorology* 150: 497-498.
115. Martin M.Z., N. Labbe, N. Andre, S.D. Wullschleger, R.D. Harris, and M.H. Ebinger. 2010. Novel multivariate analysis for soil carbon measurements using laser-induced breakdown spectroscopy. *Soil Science Society of America Journal* 74: 87-93.
116. Wu S., J. Yang, Y. Haung, H. Li, T. Liu, Y. Li, T.M. Yin, S.D. Wullschleger, G.A. Tuskan, and R. Wu. 2010. An improved approach for mapping quantitative trait loci in a pseudo-testcross: revisiting a poplar mapping study. *Bioinformatics and Biology Insights* 4:1-8.
117. Garten, C.T., J.L. Smith, J.E. Amonette, V.L. Bailey, D.J. Brice, H.F. Castro, R.L. Graham, C.A. Gunderson, R.C. Izaurralde, P.M. Jardine, J.D. Jastrow, M.K. Kerley, R. Matamala, M.A. Mayes, F.B. Metting, R.M. Miller, K. Moran, W.M. Post, R.D. Sands, C.W. Schadt, J.R. Phillips, A.M. Thomson, D.D. Tyler Jr., T. Vugteveen, T.O. West, and S.D. Wullschleger. 2010. Intra-annual changes in biomass, carbon, and nitrogen dynamics at 4-year old field trials in West Tennessee, USA. *Agriculture, Ecosystems, and Environment* 136: 177-184.
118. Wullschleger S.D. and M. Strahl. 2010. Climate Change: A Controlled Experiment. *Scientific America* 302:78-83.
119. Gu L., S.G. Pallardy, K. Tu, B.E. Law, and S.D. Wullschleger. 2010. Reliable estimation of biochemical parameters from C₃ leaf photosynthesis-intercellular carbon dioxide response curves. *Plant, Cell and Environment* 33: 1852-1874.
120. Jansson C., S.D. Wullschleger, U.C. Kalluri, and G.A. Tuskan. 2010. Phytosequestration: Carbon biosequestration by plants and the prospects of genetic engineering. *BioScience* 60: 685-696.
121. Yang B., S.G. Pallardy, T.P. Meyers, L. Gu, P.J. Hanson, S.D. Wullschleger, M. Heuer, K.P. Hosman, J.S. Riggs, and D.W. Sluss. 2010. Environmental controls on water use efficiency during severe drought in an Ozark forest in Missouri, USA. *Global Change Biology* 16: 2252-2271.
122. Jager, Y., B. Latha Malar, C.C. Brandt, E.B. Davis, C.A. Gunderson, and S.D. Wullschleger. 2010. Empirical geographic modeling of switchgrass yields in the United States. *GCB Bioenergy* 2: 248-257.
123. Yin, T.M., X. Zhang, L. Gunter, R. Priya, R. Sykes, M. Davis, S.D. Wullschleger, and G.A. Tuskan. 2010. Differential detection of genetic loci underlying stem and root lignin content in *Populus*. *PLoS ONE* 5: e14021.
124. Wullschleger, S.D., E.B. Davis, M.E. Borsuk, C.A. Gunderson, and L.R. Lynd. 2010. Biomass production for the herbaceous bioenergy crop switchgrass: Database description and determinants of yield. *Agronomy Journal* 102: 1158-1168.

125. Garten C.T., S.D. Wullschleger and A.T. Classen. 2011. Review and model-based analysis of factors influencing soil carbon sequestration under hybrid poplar. *Biomass and Bioenergy* 35: 214-226.
126. Hanson, P.J., K.W. Childs, S.D. Wullschleger, J.S. Riggs, W.K. Thomas, D.E. Todd, and J.M. Warren. 2011. A method for experimental heating of intact soil profiles for application to climate change experiments. *Global Change Biology* 17: 1083-1096.
127. Garten, C.T., D.J. Brice, H.F. Castro, R.L. Graham, M.A. Mayes, J.R. Phillips, W.M. Post, C.W. Schadt, S.D. Wullschleger, D.D. Tyler, P.M. Jardine, J.D. Jastrow, R. Matamala, R.M. Miller, K.K. Moran, T. Vugteveen, R.C. Izaurralde, A.M. Thomson, T.O. West, J.E. Amonette, V.L. Bailey, F.B. Metting, and J.L. Smith. 2011. Response of "Alamo" switchgrass tissue chemistry and biomass to nitrogen fertilization in west Tennessee, USA. *Agriculture, Ecosystems and Environment* 140: 289-297.
128. Yang, X., C.-Y. Ye, Z.-M. Cheng, T.J. Tschaplinski, S.D. Wullschleger, W. Yin, X. Xia, and G.A. Tuskan. 2011. Genomic aspects of research involving polyploid plants. *Plant Cell, Tissue and Organ Culture* 104: 387-397.
129. Warren, J.M., E. Pötzelsberger, S.D. Wullschleger, P.E. Thornton, H. Hasenauer and R.J. Norby. 2011. Ecohydrologic impact of reduced stomatal conductance in forests exposed to elevated CO₂. *Ecohydrology* 4: 196-210.
130. Xu, C., C. Liang, S.D. Wullschleger, C.J. Wilson and N. McDowell. 2011. Importance of feedback loop between soil inorganic nitrogen and microbial community in the heterotrophic soil respiration response to global warming. *Nature Reviews Microbiology* 9: 222-223.
131. Weston, D.J., A.A. Karve, L.E. Gunter, S.S. Jawdy, X. Yang, S.M. Allen, and S.D. Wullschleger. 2011. Comparative physiology and transcriptional networks underlying the heat shock response in *Populus trichocarpa*, *Arabidopsis thaliana* and *Glycine max*. *Plant Cell and Environment* 34: 1488-1506.
132. Warren J.M., R.J. Norby, and S.D. Wullschleger. 2011. Elevated CO₂ enhances leaf senescence during extreme drought in a temperate forest. *Tree Physiology* 31: 177-130.
133. Wullschleger S.D., K.W. Childs, A.W. King and P.J. Hanson. 2011. A model of heat transfer in sapwood and implications for sap flow measurements using thermal dissipation probes. *Tree Physiology* 31: 669-679.
134. Wullschleger, S.D., L.D. Hinzman and C.J. Wilson. 2011. Climate change experiments in high-latitude ecosystems. *EOS* 90: 145.
135. Graham D.E., M.D. Wallenstein, T.A. Vishnivetskaya, M.P. Waldrop, T.J. Phelps, S.M. Pfiffner, T.C. Onstott, L.G. Whyte, D. Gilichinsky, D.A. Elias, R. Mackelprang, N.C. VerBerkmoes, R.L. Hettich, D. Wagner, S.D. Wullschleger and J.K. Jansson. 2012. Microbes in thawing permafrost: The unknown variable in the climate change equation. *The ISME Journal* 6: 709-712.
136. Weston D.J., P.J. Hanson, R.J. Norby, G.A. Tuskan and S.D. Wullschleger. 2012. From systems biology to photosynthesis and primary production: a conceptual model for integrating multi-scale networks. *Plant Signaling and Behavior* 7: 260-262.
137. Xu C., R. Fisher, S.D. Wullschleger, C.J. Wilson, M. Cai and N.G. McDowell. 2012. Toward a mechanistic modeling of nitrogen limitation on vegetation dynamics. *PLoS ONE* e37914.
138. Bonin, C., R. Lal, M. Schmitz, and S.D. Wullschleger. 2012. Soil physical and hydrological properties under three biofuels crops in Ohio. *Acta Agriculturae Scandinavica* 62: 595-603.
139. Nair, S.S., S. Kang, X. Zhang, F. Miguez, C. Izaurralde, W.M. Post, M. Dietze, L.R. Lynd, and S.D.

- Wullschleger. 2012. Bioenergy crop models: description, data requirements, and future challenges. *GCB Bioenergy* 4: 620-633.
140. Lee, H., S.D. Wullschleger and Y. Luo. 2012. Enhancing terrestrial ecosystem sciences by integrating empirical modeling approaches. *EOS Transactions* 93: 237.
 141. McCarthy, H.R., Y. Luo and S.D. Wullschleger. 2012. Integrating empirical-modeling approaches to improve understanding of terrestrial ecology processes. *New Phytologist* 195: 523-525.
 142. Wullschleger, S.D. and D.J. Weston. 2012. Modeling the molecular and climatic controls on flowering. *New Phytologist* 194: 599-601.
 143. Karve, A.A., S.S. Jawdy, L.E. Gunter, S.M. Allen, X. Yang, G.A. Tuskan, S.D. Wullschleger, and D.J. Weston. 2012. Initial characterization of shade avoidance response suggests functional diversity between *Populus* phytochrome B genes. *New Phytologist* 196: 726-737.
 144. de Graaff, M.A., J. Six, J. Jastrow, J. Phillips, C.W. Schadt and S.D. Wullschleger. 2013. Variation in root architecture among switchgrass cultivars impacts root decomposition rates. *Soil Biology and Biochemistry* 58: 198-206.
 145. Wullschleger, S.D., D.J. Weston, S.P. DiFazio, and G.A. Tuskan. 2013. Revisiting the sequencing of the first tree genome: *Populus trichocarpa*. *Tree Physiology* 33: 357-364.
 146. Wu Y., S.S. Hubbard, C. Ulrich, and S.D. Wullschleger. 2013. Remote monitoring of freeze-thaw transitions in Arctic soils using the complex resistivity method. *Vadose Zone Journal* 12: 1.
 147. Hubbard S.S., C. Gangodagamage, B. Dafflon, H. Wainwright, J. Peterson, A. Gusmeroli, C. Ulrich, Y. Wu, C. Wilson, J. Rowland, C. Tweedie and S.D. Wullschleger. 2013. Quantifying and relating subsurface and land-surface variability in permafrost environments using surface geophysical and LiDAR datasets. *Hydrogeology Journal* 21: 149-169.
 148. Zeng, N., A.W. King, B. Zaitchik, S.D. Wullschleger, J. Gregg, S. Wang, and D. Kirk-Davidoff. 2013. Carbon sequestration via wood harvest and storage: An assessment of its harvest potential. *Climatic Change* 118: 245-257.
 149. Martin, M.Z., M.A. Mayes, K. Heal, D.J. Brice, and S.D. Wullschleger. 2013. Investigation of laser-induced breakdown spectroscopy and multivariate analysis for differentiating inorganic and organic C in a variety of soils. *Spectrochimica Acta-B: Atomic Spectroscopy* 87: 100-107.
 150. Weston, D.J., S.D. Wullschleger, and G.A. Tuskan. 2013. Extending the Arabidopsis flowering paradigm to a mass flowering phenomenon in the tropics. *Molecular Ecology* 22: 4603-4605.
 151. Kang, S., S.S. Nair, K.L. Kline, J.A. Nichols, D. Wang, W.M. Post, S.D. Wullschleger, N. Singh, and Y. Wei. 2014. Global simulation of bioenergy crop productivity: analytical framework and case study for switchgrass. *GCB Bioenergy* 6:14-25. <http://dx.doi.org/10.1111/gcbb.12047>
 152. Hengfu, Y., C.J. Chen, J. Yang, D.J. Weston, J-G. Chen, W. Muchero, N. Ye, G.A. Tuskan, T.J. Tschaplinski, S.D. Wullschleger, Z-M. Cheng and X. Yang. 2014. Functional genomics of drought tolerance in bioenergy crops. *Critical Reviews in Plant Sciences* 33: 205-224. <http://dx.doi.org/10.1080/07352689.2014.870417>
 153. Hayes D.J., D.W. Kicklighter, A.D. McGuire, M. Chen, Q. Zhuang, F. Yuan, J.M. Melillo, and S.D. Wullschleger. 2014. The impacts of recent permafrost thaw on land-atmosphere greenhouse gas exchange. *Environmental Research Letters* 9: Article 045005. <http://dx.doi.org/10.1088/1748-9326/9/4/045005>
 154. Martin, M.Z., L.E. Gunter, S.S. Jawdy, S.D. Wullschleger, C.S. Wheeler, and A.K. Jha. 2014. Genetic improvement, sustainable production and scalable small microenterprise of *Jatropha* as a

- biodiesel feedstock. *Journal of Bioremediation and Biodegradation* S4: 002.
<http://dx.doi.org/10.4172/2155-6199.S4-002>
155. de Graaff, M.A., J.D. Jastrow, S. Gilette, A. Jones, and S.D. Wullschleger. 2014. Differential priming of soil carbon driven by soil depth and root impacts on carbon availability. *Soil Biology and Biochemistry* 69: 147-156. <http://dx.doi.org/10.1016/j.soilbio.2013.10.047>
 156. Walker, A.P., A.P. Beckerman, J. Kattge, L.A. Cernusak, T.F. Dominques, J.C. Scales, G. Wohfahrt, S.D. Wullschleger, and F.I. Woodward. 2014. The relationship of leaf photosynthesis traits – V_{cmax} and J_{max} – to leaf nitrogen, leaf phosphorus and specific leaf area: A meta-analysis and modeling study. *Ecology and Evolution* 4: 3219-3235. <http://dx.doi.org/10.1002/ece3.1173>
 157. Wullschleger, S.D., H.E. Epstein, E.O. Box, E.S. Euskirchen, S. Goswami, C.M. Iversen, J. Kattge, R.J. Norby, P.M. van Bodegom and X. Xu. 2014. Plant functional types in Earth System Models: Past experiences and future directions for application of dynamic vegetation models in high-latitude ecosystems. *Annals of Botany* 114: 1-16. <http://dx.doi.org/10.1093/aob/mcu077>
 158. Yin, H. C.J. Chen, J. Yang, D.J. Weston, J-G. Chen, W. Muchero, N. Ye, T. J. Tschaplinski, S.D. Wullschleger, (Max) Z-M. Cheng, G.A. Tuskan and X. Yang. 2014. Functional genomics of drought tolerance in bioenergy crops. *Critical Reviews in Plant Sciences* 33: 205-224.
<http://dx.doi.org/10.1080/07352689.2014.870417>
 159. Gangogadagamage, C., J.C. Rowland, S.S. Hubbard, S.P. Brumby, A.K. Liljedahl, H. Wainwright, C.J. Wilson, G.L. Altmann, B. Dafflon, J. Peterson, C. Ulrich, C.E. Tweedie and S.D. Wullschleger. 2014. Extrapolating active layer thickness measurements across Arctic polygonal terrain using LiDAR and NDVI data sets. *Water Resources Research* 50: 6339-6357.
<http://dx.doi.org/10.1002/2013WR014283>
 160. Borland, A.M., S.D. Wullschleger, J. Hartwell, D.J. Weston, K.A. Schlauch, T.J. Tschaplinski, G.A. Tuskan, X. Yang, and J.C. Cushman. 2015. Climate-resilient agroforestry: Physiological responses to climate change and engineering of crassulacean acid metabolism (CAM) as a mitigation strategy. *Plant, Cell and Environment* 38: 1833-1849. <http://dx.doi.org/10.1111/pce.12479>
 161. Cohen, L.R., N. Raz-Yaseef, J.B. Curtis, J.M. Young, T.A. Rahn, C.J. Wilson, S.D. Wullschleger and B.D. Newman. 2015. Measuring diurnal cycles of evapotranspiration in the Arctic with an automated chamber system. *Ecohydrology* 8: 652-659. <http://dx.doi.org/10.1002/eco.1532>
 162. Heikoop, J.M., H.M. Throckmorton, B.D. Newman, G.B. Perkins, C.M. Iversen, T. Roy Chowdhury, V. Romanovsky, D.E. Graham, R.J. Norby, C.J. Wilson, and S.D. Wullschleger. 2015. Isotopic identification of soil and permafrost nitrate sources in an Arctic tundra ecosystem. *JGR Biogeosciences* 120: 1000-1017. <http://dx.doi.org/10.1002/2014JG002883>
 163. Iversen, C.M., V.L. Sloan, P.F. Sullivan, E. Euskirchen, A.D. McGuire, R.J. Norby, A.P. Walker, J.M. Warren, and S.D. Wullschleger. 2015. The unseen iceberg: plant roots in arctic tundra. *New Phytologist* 205: 34-58. <http://dx.doi.org/10.1111/nph.13003>
 164. Jensen, A.M., J.M. Warren, P.J. Hanson, J. Childs, and S.D. Wullschleger. 2015. Needle age and season influence photosynthetic temperature repose and total annual carbon uptake in mature *Picea mariana* trees. *Annals of Botany* 116: 821-832. <http://dx.doi.org/10.1093/aob/mcv115>
 165. Kang, S., D. Wang, J.A. Nichols, J. Schuchart, K.L. Kline, Y. Wei, D.M. Ricciuto, S.D. Wullschleger, W.M. Post, and R.C. Izaurralde. 2015. Development of mpi_EPIC model for global agroecosystem modeling. *Computers and Electronics in Agriculture* 111: 48-54.
<http://dx.doi.org/10.1016/j.compag.2014.12.004>
 166. Kole, C. , M. Muthamilarasan, R. Henry, D. Edwards, R. Sharma, M. Abberton, J. Batley, A. Bentley,

- M. Blakeney, J. Bryant, H. Cai, M. Cakir, L.J. Cseke, J. Cockram, A.C. de Oliveira, C. De Pace, H. Dempewolf, S. Ellison, P. Gepts, A. Greenland, A. Hall, K. Hori, G.T. Howe, S. Hughes, M.W. Humphreys, M. Iorizzo, A.M. Ismail, A. Marshall, S. Mayes, H.T. Nguyen, F.C. Ogonnaya, R. Ortiz, A.H. Paterson, P.W. Simon, J. Tohme, R. Tuberosa, B. Valliyodan, R.K. Varshney, S.D. Wullschleger, M. Yano, and M. Prasad. 2015. Application of genomics-assisted breeding for generation of climate resilient crops: Progress and prospects. *Frontiers in Plant Science* 6: Article 563. <http://dx.doi.org/10.3389/fpls.2015.00563>
167. Mann, B.F., H. Chen, E.M. Herndon, R.K. Chu, N. Tolic, E.F. Portier, T. Roy Chowdhury, E.W. Robinson, S.J. Callister, S.D. Wullschleger, D.E. Graham, L. Liang, and B. Gu. 2015. Indexing permafrost soil organic matter degradation using high-resolution mass spectrometry. *PLoS ONE* 10: e0130557. <http://dx.doi.org/10.1371/journal.pone.0130557>
168. Newman, B.D., H.M. Throckmorton, D.E. Graham, B. Gu, S.S. Hubbard, L. Liang, Y. Wu, J.M. Heikoop, E.M. Herndon, T.J. Phelps, C.J. Wilson, and S.D. Wullschleger. 2015. Microtopographic and depth controls on active layer chemistry in Arctic polygonal ground. *Geophysical Research Letters* 42: 1808-1817. <http://dx.doi.org/10.1002/2014GL062804>
169. Roy Chowdhury, T., E.M. Herndon, T.J. Phelps, D.A. Elias, B. Gu, L. Liang, S.D. Wullschleger, and D.E. Graham. 2015. Stoichiometry and temperature sensitivity of methanogenesis and CO₂ production from saturated polygon tundra in Barrow, Alaska. *Global Change Biology* 21: 722-737. <http://dx.doi.org/10.1111/gcb.12762>
170. Warren, J.M., P.J. Hanson, C.M. Iversen, J. Kumar, A.P. Walker, and S.D. Wullschleger. 2015. Root structural and functional dynamics in terrestrial biosphere models – Evaluation and recommendations. *New Phytologist* 205: 59-78. <http://dx.doi.org/10.1111/nph.13034>
171. Weston DJ, C Timm, A Walker, L Gu, W Muchero, J Schmutz, JA Shaw, GA Tuskan, J Warren and SD Wullschleger. 2015. Sphagnum physiology in the context of changing climate: Emergent influences of genomics and host-microbiome interactions to ecosystem function. *Plant, Cell and Environment* 38: 1737-1751. <http://dx.doi.org/10.1111/pce.12458>
172. Weston, D.J., A. Rogers, T.J. Tschaplinski, L.E. Gunter, S.A. Jawdy, L.E. Heady, N.L. Engle, G.A. Tuskan and S.D. Wullschleger. 2015. Scaling nitrogen and carbon interactions: What are the consequences of biological buffering? *Ecology and Evolution* 5: 2839-2850. <http://dx.doi.org/10.1002/ece3.1565>
173. Wullschleger, S.D. J.M. Warren and P.E. Thornton. 2015. Leaf respiration (*GlobResp*) – Global trait database supports Earth System Models. *New Phytologist* 206: 483-485. <http://dx.doi.org/10.1111/nph.13364>
174. Wullschleger, S.D., A.L. Breen, C.M. Iversen, M.S. Olson, T. Nasholm, U. Ganeteg, M.D. Wallenstein, and D.J. Weston. 2015. Genomics in a changing Arctic: Critical questions await the molecular ecologist. *Molecular Ecology* 24: 2301-2309. <http://dx.doi.org/10.1111/mec.13166>
175. Xu, X., D.A. Elias, D.E. Graham, T.J. Phelps, S.L. Carroll, S.D. Wullschleger, and P.E. Thornton. 2015. A microbial functional-group module for simulating methane production and consumption: application to an incubated permafrost soil. *JGR Biogeosciences* 120: 1315-1333. <http://dx.doi.org/10.1002/2015JG002935>
176. Yang, X., J.C. Cushman, A.M. Borland, E.J. Edwards, S.D. Wullschleger, G.A. Tuskan, N.A. Owen, H. Griffiths, J.A.C. Smith, H.C. De Paoli, D.J. Weston, R. Cottingham, J. Hartwell, S.C. Davis, K. Silvera, R. Ming, K. Schlauch, P. Abraham, J.R. Stewart, H.B. Guo, R. Albion, J. Ha, S.D. Lim, B.W.M. Wone, W.C. Yim, T. Garcia, J.A. Mayer, J. Petereit, S.S. Nair, E. Casey, R.L. Hettich, J. Ceusters, P. Ranjan, K.J. Palla, H. Yin, C. Reyes-García, J.L. Andrade, L. Freschi, L.V. Dever, S.F.

- Boxall, J. Waller, J. Davies, P. Bupphada, N. Kadu, K. Winter, R.F. Sage, C.N. Aguilar, J. Schmutz, J. Jenkins, and J.A.M. Holtum. 2015. A roadmap for research on crassulacean acid metabolism (CAM) to enhance sustainable food and bioenergy production in a hotter, drier world. *New Phytologist* 207: 491-504. <http://dx.doi.org/10.1111/nph.13393>
177. Ali, A., C. Xu, A. Rogers, N.G. McDowell, B.E. Medlyn, R. Fisher, S.D. Wullschleger, P.B. Reich, J.A. Vrugt, W.L. Bauerle, L. S. Santiago, and C.J. Wilson. 2015. Global scale environmental control of photosynthetic capacity. *Ecological Applications* 25: 2349-2365. <http://dx.doi.org/10.1890/14-2111.1>
178. Herndon, E.M., B.F. Mann, T. Roy Chowdhury, Z. Yang, D.E. Graham, S.D. Wullschleger, L. Liang, and B. Gu. 2015a. Pathways of anaerobic organic matter decomposition in tundra soils from Barrow, Alaska. *JGR Biogeosciences* 120: 2345-2359. <http://dx.doi.org/10.1002/2015JG003147>
179. Herndon, E.M., Z. Yang, J. Bargar, N. Janot, T.Z. Regier, D.E. Graham, S.D. Wullschleger, B. Gu, and L. Liang. 2015b. Geochemical drivers of organic matter decomposition in the active layer of arctic tundra. *Biogeochemistry* 126: 397-414. <http://dx.doi.org/10.1007/s10533-015-0165-5>
180. Throckmorton, H.M., J.M. Heikoop, B.D. Newman, G.L. Altmann, M.S. Conrad, J.D. Muss, G.B. Perkins, L.J. Smith, M.S. Torn, S.D. Wullschleger, and C.J. Wilson. 2015. Pathways and transformations of dissolved methane and dissolved inorganic carbon in Arctic tundra watersheds: Evidence from analysis of stable isotopes. *Global Biogeochemical Cycles* 29: 1893-1910. <http://dx.doi.org/10.1002/2014GB005044>
181. Ali, A.A., C. Xu, A. Rogers, R.A. Fisher, S.D. Wullschleger, E.C. Massoud, J.A. Vrugt, J.D. Muss, N.G. McDowell, J.B. Fisher, P.B. Reich and C.J. Wilson. 2016. A global scale mechanistic model of photosynthetic capacity (LUNA V1.0). *Geoscientific Model Development* 9: 587-606. <http://dx.doi.org/10.5194/gmd-9-587-2016>
182. Yang, Z., S.D. Wullschleger, L. Liang, D.E. Graham, and B. Gu. 2016a. Effects of warming on the degradation and production of low molecular-weight labile organic carbon in an Arctic tundra soil. *Soil Biology and Biochemistry* 95: 202-211. <http://dx.doi.org/10.1016/j.soilbio.2015.12.022>
183. Yang, Z., W. Fang, X. Lu, G-P Sheng, D.E. Graham, L. Liang, S.D. Wullschleger, and B. Gu. 2016b. Warming increases methylmercury production in an Arctic soil. *Environmental Pollution* 214: 504-509. <http://dx.doi.org/10.1016/j.envpol.2016.04.069>
184. Xu, X., S. Goswami, J. Gullede, S.D. Wullschleger, and P.E. Thornton. 2016. Interdisciplinary research in climate and energy sciences. *Wiley Interdisciplinary Reviews: Energy and Environment* 5: 49-56. <http://dx.doi.org/10.1002/wene.180>
185. Xu, X., F. Yuan, P. J. Hanson, S.D. Wullschleger, P.E. Thornton, W.J. Riley, X. Song, D.E. Graham, C. Song, and H. Tian. 2016. Reviews and syntheses: Four decades of modeling methane cycling in terrestrial ecosystems. *Biogeosciences* 13: 3735-3755. <http://dx.doi.org/10.5194/bg-13-3735-2016>
186. Throckmorton, H.M., B.D. Newman, J.M. Heikoop, G.B. Perkins, X. Feng, D.E. Graham, D. O'Malley, V.V. Vesselinov, J. Young, S.D. Wullschleger, and C.J. Wilson. 2016. Active layer hydrology in an Arctic tundra ecosystem: quantifying water sources and cycling using stable isotopes. *Hydrological Processes* 30: 4972-4986. <http://dx.doi.org/10.1002/hyp.10883>
187. Langford, Z.L., J. Kumar, F.M. Hoffman, R.J. Norby, S.D. Wullschleger, V.L. Sloan, and C.M. Iversen. 2016. Mapping Arctic plant functional type distributions in the Barrow Environmental Observatory using WorldView-2 and LiDAR datasets. *Remote Sensing* 8: Article 733. <http://dx.doi.org/10.3390/rs8090733>
188. Abraham, P.E., H. Yin, A.M. Borland, D. Weighill, S.D. Lim, H.C. De Paoli, N. Engle, P.C. Jones,

- R. Agh, D.J. Weston, S.D. Wullschleger, T. Tschaplinski, D. Jacobson, J.C. Cushman, R.L. Hettich, G.A. Tuskan, and X. Yang. 2016. Temporal dynamics of transcripts, proteins, and metabolites that define crassulacean acid metabolism in *Agave*. *Nature Plants* 2: 16178. <http://dx.doi.org/10.1038/nplants.2016.178>
189. Raz-Yaseef, N., M.S. Torn, Y. Wu, D.P. Billesbach, A.K. Liljedahl, T.J. Kneafsey, V.E. Romanovsky, D.R. Cook, and S.D. Wullschleger. 2017. Large CO₂ and CH₄ emissions from polygonal tundra during spring thaw in northern Alaska. *Geophysical Research Letters* 44: 504-513. <http://dx.doi.org/10.1002/2016GL071220>
190. Walker, A.P., K.R. Carter, L. Gu, P.J. Hanson, A. Malhotra, R.J. Norby, S.D. Sebestyen, S.D. Wullschleger, and D.J. Weston. 2017. Biophysical drivers of seasonal variability in *Sphagnum* gross primary production in a northern temperate bog. *JGR Biogeosciences* 122: 1078-1097. <http://dx.doi.org/10.1002/2016JG003711>
191. Raz-Yaseef, N., J. Young-Robertson, T. Rahn, V. Sloan, B. Newman, C. Wilson, S.D. Wullschleger, and M.S. Torn. 2017. Evapotranspiration across plant types and geomorphological units in polygonal arctic tundra. *Journal of Hydrology* 553: 816-825. <https://doi.org/10.1016/j.jhydrol.2017.08.036>
192. Rogers, A., S.P. Serbin, K.S. Ely, V.L. Sloan, and S.D. Wullschleger. 2017. Terrestrial biosphere models underestimate photosynthetic capacity and CO₂ assimilation in the Arctic. *New Phytologist* 216: 1090-1103. <http://dx.doi.org/10.1111/nph.14740>
193. Walker, A.P., L. McCormack, J. Messier, I. Myers-Smith, and S.D. Wullschleger. 2017. Trait covariation: The functional warp of plant diversity? *New Phytologist* 216: 976-980. <http://dx.doi.org/10.1111/nph.14853>
194. Wullschleger, S.D. 2017. Scientist Profile, Stan D. Wullschleger. *New Phytologist* 216: 981-983. <http://dx.doi.org/10.1111/nph.14869>
195. Fisher, J.B., D.J. Hayes, C. Schwalm, D.N. Huntzinger, E. Stofferahn, K. Schaefer, Y. Luo, S.D. Wullschleger, S. Goetz, C.E. Miller, P. Griffith, S. Chadburn, A. Chatterjee, P. Ciais, T. Douglas, H. Genet, A. Ito, B. Poulter, B. Rogers, H. Tian, W. Wang, X. Yongkang, Z-L Yang, and N. Zeng. 2018. Missing pieces to modeling the Arctic-Boreal puzzle. *Environmental Research Letters* (in press). <https://doi.org/10.1088/1748-9326/aa9d9a>
196. Chen, H.M., Z. Yang, R.K. Chu, N. Tolic, L. Liang, D.E. Graham, S.D. Wullschleger, and B. Gu. 2018. Molecular insights into Arctic soil organic matter degradation under warming. *Environmental Science and Technology* (in review).
197. Jubb, A.M., J.R. Eskelsen, X. Yin, J. Zheng, M.J. Philben, E.M. Pierce, D.E. Graham, S.D. Wullschleger, and B. Gu. 2018. Characterization of iron oxide nanoparticle biofilms at the air–water interface in Arctic tundra waters. *Science of the Total Environment* (in review).
198. Wales, N., J.D. Gomez-Velez, B. Newman, C.J. Wilson, B. Dafflon, F. Soom, T. Kneafsey, and S.D. Wullschleger. 2018. Understanding the relative importance of vertical and horizontal flow in ice-wedge polygon landscapes using tracers. *Water Resources Research* (in review).
199. Zheng, J., T. Roy Chowdhury, Z. Yang, B. Gu, S.D. Wullschleger, and D.E. Graham. 2018. Impacts of temperature and soil characteristics on methane production and oxidation in Arctic polygonal tundra. *Biogeosciences* (in review).
200. Zheng, J., P.E. Thornton, S.L. Painter, B. Gu, S.D. Wullschleger, and D.E. Graham. 2018. Modeling anaerobic soil organic carbon decomposition in Arctic polygon tundra: Insights into soil geochemical influences on carbon mineralization. *Biogeosciences* (in review).
201. Young-Robertson, J.M., N. Raz-Yaseef, L.R. Cohen, B. Newman, T. Rahn, V. Sloan, C.J. Wilson,

and S.D. Wullschleger. 2018. Evaporation dominates evapotranspiration on Alaska's Arctic Coastal Plain. *Arctic, Antarctic, and Alpine Research* (in press).