Ingrid C. Burke

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Academic Training:

PhD	1987	University of Wyoming	Botany
B.S.	1980	Middlebury College	Biology

Professional Experience:

2016 – present Carl W. Knobloch, Jr. Dean, Yale School of Forestry and Environmental Studies

2008– 2016 Dean (2016), Director (2008-2016), Haub School of Environment and Natural Resources, University of Wyoming, including:
- Academic Programs
- Ruckelshaus Institute

2008–2016 Wyoming Excellence Chair of Ecology, &
Professor, Departments of Botany and of Ecosystem Science and Management

2006–'08 Co-Director, Graduate Degree Program in Ecology, Colorado State University

2002-'03 Interim Director, Graduate Degree Program in Ecology, Colorado State University

2001-'08 University Distinguished Teaching Scholar and Professor, Department of Forest, Rangeland, and Watershed Stewardship, Colorado State University

1998–'01 Professor, Department of Forest Sciences, Colorado State University

1994–'98 Associate Professor, Department of Forest Sciences, Colorado State University

1989–'94 Assistant Professor, Department of Forest Sciences, Colorado State University.

1987–'88 Postdoctoral Fellow, Natural Resource Ecology Laboratory, Colorado State University.

1983–'87 Graduate Teaching and Research Assistant, University of Wyoming.

1982–'83 Graduate Fellow, Graduate Teaching Assistant, Dartmouth College

Honors and Awards

National:

2019- Fellow, Ecological Society of America

2010- Fellow, American Association for the Advancement of Sciences

2004–'05 National Academy of Sciences Education Fellow in the Life Science

1993–'98 National Science Foundation Presidential Faculty Fellow Award

University/Regional:

2018- Fellow, Connecticut Academy of Science and Engineering

2018 Honorary Doctorate, Pace University

2012 Promoting Intellectual Engagement Award, University of Wyoming

2001-'08 University Distinguished Teaching Scholar, Colorado State University

2008 USDA Agricultural Research Service, Rangeland Resources Unit: Award for Enhancing Collaborative Research Partnerships

2007	Warner College of Natural Resources, Colorado State University, Warner Distinguished Teaching/Advising Award
2005	Colorado State University Honors Professor
2000	Mortar Board Rose Award, Colorado State University
1997	Outstanding Woman Scholar Award, Virginia Commonwealth University
1995–'96	Colorado State University Honors Professor
1989	Outstanding Young Alumni Achievement Award, Middlebury College
1989	Sigma Xi, Elected Member
1986	Outstanding Biology Teaching Assistant Award, University of Wyoming
1985	Elected Member Phi Kappa Phi National Honor Society
1982–'83	Melville Cramer Fellowship, Dartmouth College

Professional and Honorary Societies

American Association for the Advancement of Science
American Association of University Women
American Geophysical Union
American Institute of Biological Sciences
Association of Women in Science
Ecological Society of America
Sigma Xi
Soil Science Society of America

Publications:

Underlining shows my own graduate students or postdoctoral associates; italicized and underlined shows undergraduate students. Citation report on Google Scholar. h index: 73 (~18,000 lifetime citations). Recent articles include hyperlinks where possible.

Peer-Reviewed Journal Articles:

1. Renne, R. R., D. R. Schlaepfer, K. A. Palmquist, J. B. Bradford, I. C. Burke, and W. K. Lauenroth. 2019. Soil and stand structure explain shrub mortality patterns following global change type-drought and extreme precipitation. Ecology 100(11) e02824.
2. Renne, R., J. B. Bradford, **I. C. Burke,** and W.K. Lauenroth. 2019. Soil texture and precipitation seasonality influence plant community structure in North American temperate shrub steppe. Ecology https://doi.org/10.1002/ecy.2824
3. Beltz, C. W., M. L, Mobley, and **I. C. Burke**. 2019. Nitrogen addition pulse has minimal effect in big sagebrush (*Artemisia tridentata*) communities on the Pinedale Anticline, Wyoming (USA). PLOS ONE 14(5):e0206563
4. Swindon, J.G., **I. C. Burke** and W. K. Lauenroth. 2019. Seasonal patterns of root production with water and nitrogen additions across three dryland ecosystems. 2019. Ecosystems doi.org/10.1007/s10021-019-00364-y.
5. Swindon, J.G., W.K. Lauenroth, D. R. Schlaepfer, and **I. C. Burke**. 2019. Spatial distribution of roots across three dryland ecosystems and plant functional types. Western North American Naturalist 79(2): 159-169.
6. Rottler, C. M., **I. C. Burke**, K. A. Palmquist, J. B. Bradford, and W.K. Lauenroth. 2017. Reclamation after oil and gas development does not speed up succession or plant

community recovery in big sagebrush ecosystems in Wyoming. Restoration Ecology doi: 10.1111/rec.12543.

7. Keeler, B.L., R. Chaplin-Kramer, A.D. Guerry, P. F. E. Addison, C. Bettigole, **I. C. Burke**, B. Gentry, L. Chambliss, C. young, A. J. Travis, C. T. Carimont, D. R. Gordon, J. Hellman, P. Kareiva, S. Monfort, L. Olander, T. Profeta, H. P. Possingham, C. Slotterback, E. Sterling, T. Ticktin, and B. Vira. 2017. Society is ready for a new kind of science – Is Academia? BioScience 67(7):591-592.
8. Martyn, T.E., J. B Bradford, D. R. Schlaepfer, **I. C. Burke**, and W. K. Lauenroth. 2016. Seed bank and big sagebrush plant community composition in a range margin for big sagebrush. Ecosphere 7(10): e01453.
9. Korfanta, N. M, M. L. Mobley, and **I. C. Burke** 2015. Fertilizing western rangelands for ungulate conservation: an assessment of benefits and risks. Wildlife Society Bulletin doi 10.1002/wsb.519.
10. Otgonsuren, A., W. K. Lauenroth, I. C. Burke, and M. L. Mobley. 2015. Sagebrush steppe recovery on 30-90 year old abandoned oil and gas wells. Ecosphere 6(7):115. Dx.doi.org/10.1890/ES14-00175.1
11. Mobley, M. L., M. J. Cleary, and **I. C. Burke.** 2014. Inorganic nitrogen supply and dissolved organic nitrogen abundance across the US Great Plains. PLoS ONE 9(9):e107775.
12. Mobley, M.L.,R. L. McCulley, **I. C. Burke,** G. Peterson, D. S. Schimel, C. V. Cole, E. T. Elliott, and D. G. Westfall. 2014. Grazing and no-till cropping impacts on N retention in dryland agroecosystems. Journal of Environmental Quality 43 (6):1963-1971.
13. Bradford, J.B., D. R. Schlaepfer, W. K. Lauenroth, and **I. C. Burke.** 2014. Ecohydrological consequences of plant functional type transitions in North American sagebrush ecosystems. Journal of Ecology 102:1408-1418.
14. Otgonsuren, A., **I. C. Burke,** M. L. Mobley, W. K. Lauenroth, and D. R. Schlaepfer. 2014. Natural recovery of soil organic matter in 30-90 year old abandoned oil and gas wells in sagebrush steppe. Ecosphere 5(3):1-13.
15. Gathany, M. and I. C. **Burke.** 2014. The effects of forest thinning practices and altered nutrient supply on soil trace gas fluxes in Colorado. Open Forestry Journal 4: 278-289.
16. Evans, S. E., M. D. Wallenstein, and **I. C. Burke.** 2014. Is bacterial moisture niche a good predictor of shifts in community composition under long-term drought? Ecology 95 (1):110-122.
17. **Burke, I. C.,** E. E. Bontti, J. E. Barrett, P. N. Lowe, W. K. Lauenroth, and R. Riggle. 2013. Impact of labile and recalcitrant carbon treatments on available nitrogen and plant communities in a semiarid ecosystem. Ecological Applications 23(3):537-545.
18. Evans, S.E. and **I.C. Burke.** 2013. Carbon and nitrogen decoupling under an 11-year drought in the shortgrass steppe. Ecosystems 16:20-33.
19. Gathany, M. and **I. C. Burke.** 2012. DAYCENT simulations to test the influence of fire regime and fire suppression on trace gas fluxes and nitrogen biogeochemistry of Colorado. Forests 3(3):506-527. .
20. Munson, S. M., W. K. Lauenroth, and **I. C. Burke**. 2012. Soil carbon and nitrogen recovery on semiarid Conservation Reserve Program Lands. Journal of Arid Environments 79:25-31.
21. Evans, S. E., Byrne, K. M., W. K. Lauenroth, and **I. C. Burke**. 2011. Long-term drought

reduces the dominant species and increases ruderals in a semiarid steppe. Journal of Ecology 99(6):1500-1507. (*This paper won Editor's Choice for 2011*).

22. Evans, S. E., **I. C. Burke,** and W. K. Lauenroth. 2011. Controls on soil organic carbon and nitrogen in Inner Mongolia, China: A cross-continental comparison of temperate grasslands. Global Biogeochemical Cycles 25, GB3006.
23. Gathany, M. and **I. C. Burke.** 2011. Post-fire soil fluxes of CO_2, CH_4, and N_2O along the Colorado Front Range. International Journal of Wildland Fire 20(7): 838-846. International Journal of Wildland Fire 20(7):838-846.
24. Bontti, E. E., **I. C. Burke,** and W. K. Lauenroth. 2011. Nitrogen partitioning between microbes and plants in the shortgrass steppe. Plant and Soil 342: 445-457.
25. Adair, E. A. and **I. C. Burke**. 2010. Plant phenology and life span influence soil pool dynamics: *Bromus tectorum* invasion of perennial C3-C4 grass communities. Plant and Soil 335:255-269.
26. Currie, W. S., M. E. Harmon, **I. C. Burke**, S. C. Hart, W. J. Parton, and W. Silver. 2010. Cross-biome transplants of plant litter show decomposition models extend to a broader climatic range but low predictability at the decadal time scale. Global Change Biology 16:1744-1761.
27. Munson, S. M., T. J. Benton, W. K. Lauenroth, and **I. C. Burke**. 2010. Soil carbon flux following pulse precipitation events in the shortgrass steppe. Ecological Research, 25: 205-211.
28. Bontti, E. E., J. P. DeCant, S. M. Munson, M. Gathany, A. Przeszlowska, M. L. Haddix, S. M. Owens**, I. C. Burke**, W. J. Parton, and M. E. Harmon. 2009. Litter decomposition in grasslands of Central North America (US Great Plains). Global Change Biology 15(5):1356-1363. (*paper produced from my graduate class)*
29. McCulley, R. L., **I. C. Burke**, and W. K. Lauenroth. 2009. Conservation of nitrogen increases with precipitation across a major grassland gradient in the central Great Plains of North America. Oecologia 159(3):571-581.
30. McHale, M. R., **I. C. Burke**, M. A. Lefsky, P. J. Peper, and E. G. McPherson. 2009. Urban forest biomass estimates: is it important to use allometric relationship developed specifically for urban trees? Urban Ecosystems 12:95-113.
31. Harmon, M. E., W. L. Silver, B. Fasth, H. Chen, **I. C. Burke,** W. J. Parton, S. C. Hart, W. S. Currie, and LIDET. 2009. Long-term patterns of mass loss during the decomposition of leaf and fine root litter: an intersite comparison. Global Change Biology 15(5):1320-1338.
32. Adair, E. A., W. J. Parton, S. J. Del Grosso, W. L. Silver, M. E. Harmon, S. A. Hall, **I. C. Burke,** and S. C. Hart. 2008. A simple three-pool model accurately describes patterns of long-term litter decomposition in diverse climates. Global Change Biology 14:2636-2660. Global Change Biology 14:2636-2660.
33. Hamman, S. T., **I. C. Burke**, and E. E. Knapp. 2008. Soil nutrients and microbial activity after early and late season prescribed burns in a Sierra Nevada mixed conifer forest. Forest Ecology and Management 256:367-374.
34. Adair, E. C., **I. C. Burke,** and W. K. Lauenroth. 2008. Contrasting effects of resource availability and plant mortality on plant community invasion by Bromus tectorum. Plant and Soil 304:103-115. Plant and Soil 304:103-115.
35. Otgonsuren, A., C. E. Goulden, I. C. Burke, and B. Bulgan. 2008. Soil CO_2 flux in

Hovsgol National Park, Northern Mongolia. Mongolian Journal of Biological Sciences 6:31-38.

36. Cleland, E. E., C. M. Clark, S. L. Collins, J. E. Fargione, L. Gough, K. L. Gross, D. G. Milchunas, S. C. Pennings, W. D. Bowman, **I. C. Burke**, W. K. Lauenroth, G. P. Robertson, J. C. Simpson, D. Tilman, and K. N. Suding. 2008. Species responses to nitrogen fertilization in herbaceous plant communities, and associated species traits. Ecology **89**:1175-1175 (data paper).
37. McHale, M. R., E. G. McPherson, **I. C. Burke**. 2007. The potential of urban tree plantings to be cost effective in carbon credit markets. Urban Forestry and Urban Greening 6:49-60.
38. Hamman, S. T., **I. C. Burke**, and M. E. Stromberger. 2007. Relationships between microbial community structure and soil environmental conditions in a recently burned system. Soil Biology and Biochemistry 39:1703-1711.
39. Parton, W. J., W. L. Silver, I. C. Burke, L. Grassens, M. E. Harmon, W. S. Currie, J. Y. King, E. Carol Adair, L. A. Brandt, S. C. Hart, and B. Fasth. 2007. Global-scale similarities in nitrogen release patterns during long-term decomposition. Science 315: 361-364.
40. Hall, S. A., **I. C. Burke,** and N. T. Hobbs. 2006. Litter and dead wood dynamics in ponderosa pine forest along a 160-year chronosequence. Ecological Applications 16(6): 2344-2355.
41. Bradford, J. B., W. K. Lauenroth, I. C. Burke, and J. M Paruelo. 2006. The influence of climate, soils, weather and land-use on primary production and biomass seasonality in the U.S. Great Plains. Ecosystems 9(6):934-950.
42. Hall, S. A. and **I. C. Burke**. 2006. Considerations for characterizing fuels as inputs to fire behavior models. Forest Ecology and Management 227:102-114.
43. Jia, G. J., **I. C. Burke**, A. F. H. Goetz , M.R. Kaufmann, and B. C. Kindel. 2006. Assessing spatial patterns of forest fuel using AVIRIS data. Remote Sensing of the Environment 102:318-327.
44. Jia, G. J., **I. C. Burke**, A. F. H. Goetz , M.R. Kaufmann, B. C. Kindel. 2006. Estimates of forest canopy fuel attributes using hyperspectral data. Forest Ecology and Management 229:27-38.
45. Bradford, J. B., W. K. Lauenroth, and **I. C. Burke**. 2005. The impact of cropping on primary production in the U.S. Great Plains. Ecology 86(7): 1863-1872.
46. Adler, P.B., D. G. Milchunas, O. E. Sala, **I. C. Burke**, and W. K. Lauenroth. 2005. Plant traits and ecosystem grazing effects: Comparison of US sagebrush steppe and Patagonian steppe. Ecological Applications 15: 774-792.
47. Hall, S.A, **I. C. Burke,** D. O**.** Box, M. R. Kaufmann, and J. M. Stoker. 2005. Estimating stand structure using discrete-return lidar: an example from low density, fire prone ponderosa pine forests. Forest Ecology and Management 208:189-209.
48. Kaye, J.P., R.L. McCulley, and **I.C. Burke**. 2005. Carbon fluxes, nitrogen cycling and soil microbial communities in adjacent urban, native and agricultural ecosystems. Global Change Biology 11:575-587.
49. McCulley, R. L., **I. C. Burke**, J. A. Nelson, W. K. Lauenroth, A. K. Knapp, and E. F. Kelly. 2005. Regional patterns in carbon cycling across the Great Plains of North America. Ecosystems 8:106-121.

50. Lauenroth W.K., Epstein H.E., Paruelo J.M., **Burke I.C.,** Aguiar M.R., and O.E. Sala. 2004. Potential effects of climate change on the temperate zones of North and South America. Revista Chilena De Historia Natural 77 (3): 439-453.
51. Roberts, L., R. L. McCulley, **I. C. Burke**, and W. K. Lauenroth. 2004. Indications of deep soil water usage by limber pine (Pinus flexilis) and skunkbush sumac (Rhus aromatica) in northeastern Colorado: An oxygen isotope study. American Midland Naturalist 152(1): 178-182.
52. Miller A. J., R. Amundson, **I. C. Burke**, and C. M. Yonker. 2004. The effect of climate and cultivation on soil organic C and N. Biogeochemistry 67(1):57-72.
53. Adler, P., D. G. Milchunas, W. K. Lauenroth, O. E. Sala, and **I. C. Burke**. 2004. Functional traits of graminoids in semi-arid steppes: a test of grazing histories. Journal of Applied Ecology 41(4):653-663.
54. Kaye, J. P., **I. C. Burke**, A. R. Mosier, and J. P. Guerchman. 2004. Methane and nitrous oxide fluxes from urban soils to the atmosphere. Ecological Applications 14(4):975-981.
55. McCulley, R.L. and **I.C. Burke**. 2004. Microbial community composition across the Great Plains: Landscape versus regional variability. Soil Science Society of America Journal 68:106-115.
56. Guerchman, J. P., Paruelo, J. M., and **I. C. Burke**. 2003. Land use impacts on the normalized difference vegetation index in temperate Argentina. Ecological Applications 13(3): 616-628.
57. Lowe, P. N., W. K. Lauenroth, and **I. C. Burke**. 2003. Effects of nitrogen availability on competition between *Bromus tectorum* and *Bouteloua gracilis*. Plant Ecology 167: 247-254.
58. Foster, D., F. Swanson, J. Aber, **I. Burke**, N. Brokaw, D. Tilman, and A. Knapp. 2003. The importance of land-use legacies to ecology and conservation. BioScience 53(1): 77-88.
59. Rastetter, E. B., J. D. Aber, D. P. C. Peters, D. S. Ojima, **and I. C. Burke**. 2003. Using mechanistic models to scale ecological processes across space and time. BioScience 53(1): 68-76.
60. **Burke, I. C**. and W. K. Lauenroth. 2002. Ecosystem ecology at regional scales. Ecology 83: 305-306.
61. Kaye, J. P., J. E. Barrett, and **I. C. Burke**. 2002. Stable nitrogen and carbon pools in grassland soils of variable texture and carbon content. Ecosystems 5:461-471.
62. Barrett, J. E., R. L. McCulley, D. R. Lane, **I. C. Burke**, and W. K. Lauenroth. 2002. Influence of climate variability on plant production and N mineralization in central U.S. grasslands. Journal of Vegetation Science 13:383-394.
63. Murphy, K. L., **I. C. Burke**, M. A. Vinton, W. K. Lauenroth, M. R. Aguiar, D. A. Wedin, R. A. Virginia, and P. Lowe. 2002. Regional analysis of litter quality in the central grassland region of North America. Journal of Vegetation Science 13:395-402.
64. **Burke, I. C**., W. K. Lauenroth, G. Cunfer, J. E. Barrett, A. R. Mosier, and P. Lowe. 2002. Nitrogen in the central grasslands region of the United States. BioScience 52(9):813-823.
65. Gill, R. A. and **I. C. Burke**. 2002. Influence of soil depth on the decomposition of *Bouteloua gracilis* roots in the shortgrass steppe. Plant and Soil 241(2):233-242.
66. Gill, R. A., **I. C. Burke**, W. K. Lauenroth, and D. G. Milchunas. 2002. Longevity and

turnover of roots in the shortgrass steppe: influence of diameter and depth. Plant Ecology 159(2):241-251.

67. Epstein, H. E., R. A. Gill, J. M. Paruelo, G. J. Jia, W. K. Lauenroth, and **I. C. Burke**. 2002. The relative abundance of three plant functional types in temperate grasslands and shrublands of North and South America: Effects of projected climate change. Journal of Biogeography 29(7):875-888
68. Barrett, J. E., D. W. Johnson, **I.C. Burke**. 2002. Abiotic nitrogen uptake in semiarid grasslands of the U.S. Great Plains. Soil Science Society of America 66:979-987.
69. Dodd, M., W. K. Lauenroth, **I. C. Burke**, and P. Chapman. 2002. Associations between vegetation patterns and soil texture in the shortgrass steppe. Plant Ecology 158:127-137.
70. Barrett, J. E., and **I. C. Burke**. 2002. Nitrogen retention in semiarid ecosystems across a soil organic matter gradient. Ecological Applications 12:878-890.
71. Epstein, H. E., **I. C. Burke**, and W. K. Lauenroth. 2002. Regional patterns of decomposition and primary production rates in the U.S. Great Plains. Ecology 83:320-327.
72. Lowe, P. N., W. K. Lauenroth, and **I. C. Burke**. 2002. Effects of nitrogen availability on the growth of native plants and exotic weeds. Journal of Range Management 55:94-98.
73. Epstein, H.E., **I.C. Burke** and A.R. Mosier. 2001. Plant effects on nitrogen retention in the shortgrass steppe two years after 15N addition. Oecologia 128:422-430.
74. Paruelo, J. M., **I. C. Burke**, and W. K. Lauenroth. 2001. Land use impact on ecosystem functioning in eastern Colorado. Global Change Biology 7(6):631-639.
75. Dodd, M. B., W. K. Lauenroth, and **I. C. Burke**. 2000. Nitrogen availability through a coarse-textured soil profile in the shortgrass steppe. Soil Science Society of America Journal 64:391-398. Doi 10.2136/sssaj2000.641391x
76. Hook, P. B. and **I. C. Burke**. 2000. Biogeochemistry in a shortgrass landscape: control by topography, soil texture, and microclimate. Ecology 81(10):2686-2703.
77. Barrett, J. E. and **I. C. Burke**. 2000. Potential nitrogen immobilization in grassland soils: controls by soil organic matter. Soil Biology and Biochemistry 32:1707-1716.
78. Lauenroth, W. K., **I. C. Burke**, and J. M. Paruelo. 2000. Patterns of production and precipitation-use efficiency of winter wheat and native grasslands in the central Great Plains of the United States. Ecosystems 3:344-351.
79. Johnson, D. W., W. Cheng, and **I. C. Burke**. 2000. Biotic and abiotic nitrogen retention in a variety of forest soils. Soil Science Society of America Journal 64:1503-1514.
80. **Burke, I. C**., W. K. Lauenroth, R. Riggle, P. Brannen, B. Madigan, and S. Beard. 1999. Spatial variability of soil properties in the shortgrass steppe: the relative importance of topography, grazing, microsite, and plant species in controlling spatial patterns. Ecosystems 2:422-438.
81. Gill, R. A. and **I. C. Burke**. 1999. Using an environmental science course to promote science literacy. Journal of College Science Teaching XXIX (2):105-110.
82. Epstein, H. E., **I. C. Burke**, and W. K. Lauenroth. 1999. Response of the shortgrass steppe to changes in rainfall seasonality. Ecosystems 2:139-150.
83. Paruelo, J. M.; W. K. Lauenroth, **I. C. Burke**, and O. E. Sala. 1999. Grassland precipitation-use efficiency varies across a resource gradient. Ecosystems 2:64-68.
84. Gill, R. A., and **I. C. Burke**. 1999. Ecosystem consequences of plant life form changes at three sites in the semiarid United States. Oecologia 121(4):551-563.

85. Lauenroth, W. K., **I. C. Burke**, and M. P. Gutmann. 1999. The structure and function of ecosystems in the central North American grassland region. Great Plains Research 9:223-259.
86. Gill, R.A., **I. C. Burke**, D. G. Milchunas, and W. K. Lauenroth. 1999. Relationship between root biomass and soil organic matter pools in the shortgrass steppe of eastern Colorado. Ecosystems 2:226-236.
87. Robles, M. D. and **I. C. Burke**. 1998. Soil organic matter recovery on Conservation Reserve Program fields in southeastern Wyoming. Soil Science Society of America Journal 62:725-730.
88. Epstein, H. E., **I. C. Burke**, and A. R. Mosier. 1998. Plant effects on spatial and temporal patterns of nitrogen cycling in shortgrass steppe. Ecosystems 1:374-385.
89. Milchunas, D. G., W. K. Lauenroth, and **I. C. Burke**. 1998. Livestock grazing: animal and plant biodiversity of shortgrass steppe and the relationship to ecosystem function. Oikos 83:65-74.
90. Paruelo, J. M., E. G. Jobbagy, O. E. Sala, W. K. Lauenroth, and I. C. Burke. 1998. Functional and structural convergence of temperate grassland and shrubland ecosystems. Ecological Applications 8(1):194-206. .
91. **Burke, I. C.**, W. K. Lauenroth, M. A. Vinton, P. B. Hook, R. H. Kelly, H. E. Epstein, M. R. Aguiar, M. D. Robles, M. O. Aguilera, K. L. Murphy, and R. A. Gill. 1998. Plant-soil interactions in temperate grasslands. Biogeochemistry 42:121-143.
92. Chapin, F. S. III, O. Sala, **I. C. Burke**, J. P. Grime, W. K. Lauenroth, A. Lombard, H. A. Mooney, A. R. Mosier, S. Naeem, S. W. Pacala, J. Roy, W. Steffan, and D. Tilman. 1998. Ecosystem consequences of changing biodiversity. BioScience 48(1):45-51.
93. Epstein, H. E., W. K. Lauenroth, **I. C. Burke**, and D. P. Coffin. 1998. Regional productivities of plant species in the Great Plains of the United States. Plant Ecology 134:173-195.
94. Epstein H.E, **I. C. Burke**, A. R. Mosier, and G. L. Hutchinson. 1998. Plant functional type effects on trace gas fluxes in the shortgrass steppe. Biogeochemistry 42:145-168.
95. Vinton, M. A., and **I. C. Burke**. 1997. Contingent effects of plant species on soils along a regional moisture gradient in the Great Plains. Oecologia 110:393-402.
96. Kelly, R. H. and **I. C. Burke**. 1997. Heterogeneity of soil organic matter following death of individual plants in shortgrass steppe. Ecology 78(4):1256-1261.
97. Epstein, H. E., W. K. Lauenroth, **I. C. Burke**, and D. P. Coffin. 1997. Productivity patterns of C_3 and C_4 functional types in the US Great Plains. Ecology 78(3):722-731.
98. Robles, M. D. and **I. C. Burke**. 1997. Legume, grass and Conservation Reserve Program effects on recovery of soil organic matter pools and nutrient availability. Ecological Applications 7(2):345-357.
99. **Burke, I. C.**, W. K. Lauenroth, and W. J. Parton. 1997. Regional and temporal variation in net primary production and nitrogen mineralization in grasslands. Ecology 78(5):1330-1340.
100. Epstein, H. E., W. K. Lauenroth, and **I. C. Burke**. 1997. Effects of temperature and soil texture on ANPP in the U.S. Great Plains. Ecology 78(8):2628-2631.
101. Martinez-Turanzas, G. A., D. P. Coffin, and **I. C. Burke**. 1997. Development of microtopographic relief in a semiarid grassland: effects of disturbance size and soil texture. Plant and Soil 191:163-171.

102. Coffin, D. P., W. K. Lauenroth, and **I. C. Burke**. 1996. Recovery of vegetation in a semi-arid grassland 53 years after disturbance. Ecological Applications 6(2):538-555.
103. Kelly, R. H., **I. C. Burke**, and W. K. Lauenroth. 1996. Soil organic matter and nutrient availability responses to reduced plant inputs in shortgrass steppe. Ecology 77:2516-2527.
104. Paruelo, J. M., H. E. Epstein, W. K. Lauenroth, and **I. C. Burke**. 1997. ANPP estimates from NDVI for the Central Grassland region of the U.S. Ecology 78(3):953-958.
105. Epstein, H. E., W. K. Lauenroth, **I. C. Burke**, and D. P. Coffin. 1996. Ecological responses of dominant grasses along two climatic gradients in the Great Plains of the United States. Journal of Vegetation Science 7:777-788.
106. **Burke, I. C**., E. T. Elliott, and C. V. Cole. 1995. Influence of macroclimate, landscape position, and management on soil organic matter in agroecosystems. Ecological Applications 5(1):124-131.
107. Paruelo, J. M., W. K Lauenroth, E. H. Epstein, **I. C. Burke**, M. R. Aguiar, and O. E. Sala. 1995. Regional climatic similarities in the temperate zones of North and South America. Journal of Biogeography 22:2689-2699.
108. Vinton, M.A. and **I. C. Burke**. 1995. Interactions between individual plant species and soil nutrient status in shortgrass steppe. Ecology 76(4):1116-1133.
109. Ihori, T., **I. C. Burke**, W. K. Lauenroth, and D. P. Coffin. 1995. Effects of cultivation and abandonment on soil organic matter in northeastern Colorado. Soil Science Society of America Journal 59(4):1112-1119.
110. Ihori, T., **I. C. Burke**, and P. B. Hook. 1995. Nitrogen mineralization in native, cultivated, and abandoned fields in shortgrass steppe. Plant and Soil 171(2):203-8.
111. **Burke**, I. C., W. K. Lauenroth, and D. P. Coffin. 1995. Soil organic matter recovery in semiarid grasslands: Implications for the Conservation Reserve Program. Ecological Applications 5(3):793-801.
112. Hook, P. B. and **I. C. Burke**. 1995. Evaluation of methods for estimating net nitrogen mineralization in a semiarid grassland. Soil Science Society of America Journal 59(3):831-6.
113. Hook, P. B., W. K. Lauenroth, and **I. C. Burke.** 1994. Spatial patterns of roots in a semiarid grassland: abundance of canopy openings and regeneration gaps. Journal of Ecology 82:485-494.
114. Riebsame, W. E., K. A. Galvin, R. Young, W. J. Parton, **I. C. Burke**, L. Bohren, E. Knop. 1994. Integrated modeling of land use and cover change. BioScience (44(5):350-356.
115. **Burke, I. C.** and W. K. Lauenroth. 1993. What do LTER results mean? Extrapolating from site to region and decade to century. Ecological Modeling 67:19-35.
116. Barnwell, T. O., R. B. Jackson, E. T. Elliott, **I. C. Burke**, C. V. Cole, K. Paustian, E. A. Paul, A. S. Donigian, A. S. Patwardhan, A. Rowell, and K. Weinrich. 1992. An approach to assessment of management impacts. Water, Air, and Soil Pollution 64:423-435.
117. Coppinger, K., W. A. Reiners, I. C. Burke, and R. K. Olson. 1991. Net erosion on a sagebrush steppe landscape as determined by 137-Cs distribution. Soil Science Society of America Journal 55(1):254-258.

118. Hook, P., **I. C. Burke**, and W. K. Lauenroth. 1991. Heterogeneity of soil and plan N and C associated with individual plants and openings in North American shortgrass steppe. Plant and Soil 138:247-256.
119. **Burke, I. C**., T. G. F. Kittel, W. K. Lauenroth, P. Snook, and C. M. Yonker. 1991. Regional analysis of the central Great Plains: sensitivity to climate variability. Bioscience 41(10):685-692.
120. Wood, C. W., D. G. Westfall, G. A. Peterson, and **I. C. Burke**. 1990. Impacts of cropping intensity on C and N mineralization in no-till dryland agroecosystems. Agronomy Journal 82(6):1115-1120.
121. **Burke, I. C**., A. R. Mosier, L. Porter, and L. O'Deen. 1990. Diffusion preparation of soil extracts for N and 15-N analyses by automated combustion-mass spectrometry. Soil Science Society of America Journal 54:1190-1192.
122. **Burke, I. C**., D. S. Schimel, W. J. Parton, C. M. Yonker, L. A. Joyce, and W. K. Lauenroth. 1990. Regional modeling of grassland biogeochemistry using GIS. Landscape Ecology 4:45-54.
123. **Burke, I. C**., W. A. Reiners, and D. S. Schimel. 1989. Organic matter turnover in a sagebrush steppe landscape. Biogeochemistry 7:11-31.
124. **Burke, I. C**., C. Yonkers, W. J. Parton, C. V. Cole, K. Flach, and D. S. Schimel. 1989. Texture, climate, and cultivation effects on organic matter in U. S. Grassland Soils. Soil Science Society of America Journal 53(3):800-805.
125. Reiners, W. A., L. L. Strong, P. A. Matson, I. C. Burke, and D. S. Ojima. 1989. Estimating biogeochemical fluxes across sagebrush-steppe landscapes with thematic mapper imagery. Remote Sensing of the Environment 28:121-129.
126. **Burke, I. C**. 1989. Control of N mineralization in a sagebrush steppe landscape. Ecology 70(4):1115-1126.
127. **Burke, I. C**., W. A. Reiners, and R. K. Olson. 1989. Topographic control of vegetation in a sagebrush steppe landscape. Vegetatio 84:77-86.
128. **Burke, I. C.,** W. A. Reiners, D. S. Sturges, and P. A. Matson. 1987. Herbicide treatment effects on properties of mountain big sagebrush soils after fourteen years. Soil Science Society of America Journal 51:13371343.
129. Young, D. R., **I. C. Burke**, and D. H. Knight. 1985. Water relations of high elevation phreatophytes in Wyoming. American Midland Naturalist 114(2): 384392.

Books:

Lauenroth, W. K., and **I. C. Burke,** eds. 2008. Ecology of the Shortgrass Steppe: a Long Term Perspective. Oxford University Press

National Resource Council Books (I served on the committees and co-authored these reports):

1. Renewable Fuel Standard: Potential Economic and Environmental Effects of U.S. Biofuel Policy. 2012. Committee on Economic and Environmental Impacts of Increasing Biofuel Production (co-chair). Board on Agriculture and Natural Resources and Board on Energy and Environmental Systems, National Academies Press, 2012.
2. A New Biology for the 21st Century. A New Biology for the 21st Century . 2009. Committee on a New Biology for the 21st Century: Ensuring the United States Leads the

Coming Biology Revolution (member). Board on Life Sciences, National Academies Press, 2009.

3. Environmental Impacts of Wind Energy Projects. Committee on Environmental Impacts of Wind Energy (member). Board on Environmental Science and Toxicology. National Academies Press. 2007.
4. Review of EPA's Environmental Monitoring and Assessment Program. Committee to Review EMAP (member). Board on Environmental Science and Toxicology, National Academies Press, 1995

Book Chapters

1. Burke, I.C. 2019. Foreword. Pages xiii – xv in Esty, D. C. ed. A Better Planet: Forty Big Ideas for a Sustainable Future. Yale University Press.
2. Burke, I.C., and J.C. Cameron. 2019. Epilogue: How to Make Big Ideas Work. Pages 371-374 in Esty, D. C. ed. A Better Planet: Forty Big Ideas for a Sustainable Future. Yale University Press.
3. **Burke, I. C.** and W. K. Lauenroth. 2011. Theory of Ecosystem Ecology. Pages 243-258 in Scheiner, S and M. Willig, eds, Theory of Ecology. Oxford University Press.
4. Peters, D. P. C., W. K. Lauenroth, and **I. C. Burke**. 2008. The role of disturbances in shortgrass steppe community and ecosystem dynamics. Chapter 6 In Lauenroth, W. K., and **I. C. Burke**, eds. 2008. Ecology of the Shortgrass Steppe: a Long Term Perspective. Oxford Press.
5. Gutmann, M., P., W. J. Parton, G. Cunfer, and **I. C. Burke**. 2005. Population and environment in the U.S. Great Plains. Pages – 105 in Entwisle, B., and P. C. Sterns, editors. Population, landuse, and environment: Research Directions. National Academy Press. 330 p.
6. **Burke, I. C**., W. K. Lauenroth, and C. A. Wessman. 1998. Progress in understanding biogeochemistry at regional to global scales. Pages 165-194 In Groffman, P. and M. Pace, eds. Successes, Limitations, and Challenges in Ecosystem Science. Springer-Verlag, New York.
7. Lauenroth, W. K., D. P. Coffin, and **I. C. Burke**. 1997. Effects of plant mortality on population dynamics and ecosystem structure: a case study. Pages 234 - 254 In Smith, T. M., H. H. Shugart, and F. I. Woodward. Plant Functional Types. Cambridge University Press.
8. **Burke, I. C**., W. K. Lauenroth, and D. G. Milchunas. 1997. Biogeochemistry of managed grasslands in the Central Grasslands of the U.S. Pages 85-102. In Paul, E. and K. Paustian, eds. Organic matter in U.S. agroecosystems. Lewis Publishers.
9. Sala, O. E., W. K. Lauenroth, and **I. C. Burke**. 1996. Carbon budgets of temperate grasslands: potential impacts of climate change. Pages 101-120 In Breymeyer, A. I., D. O. Hall, J. M. Melillo, and G. I. Agren, eds. Global Change: Effects on Coniferous Forests and Grasslands. Scientific Committee on Problems in the Environment volume 56. 459 p.
10. **Burke, I. C**., and W. K. Lauenroth. 1996. Biodiversity at landscape to regional scales. Pages 304-310 In Global Biodiversity Assessment. United Nations Environmental Program. Cambridge University Press, Cambridge.

11. Lauenroth, W. K., and **I. C. Burke**. 1995. Great Plains, Climate variability. Pages 237-249 In Encyclopedia of Environmental Biology, Volume 2. Academic Press.
12. Coffin, D. P., W. K. Lauenroth, and **I. C. Burke**. 1993. Spatial dynamics in recovery of shortgrass steppe ecosystems. Pages 75-108 In Gardner, R.H., ed. Theoretical approaches to predicting spatial effects in ecological systems. Lectures on Mathematics in the Life Sciences, Volume 23. American Mathematical Society, Providence, Rhode Island.
13. Schimel, D. S. and **I. C. Burke**. 1992. Spatial interactive models of atmosphere-ecosystem coupling. Pages 284-289 in Goodchild, M. F., B. O. Parks, and L. T. Steyaert, eds. Environmental Modeling with GIS. Oxford University Press New York.
14. Brock, S. and **I. Burke**. 1980. Vegetation of the Ray Mountains, in Farquhar, N. and J. Schubert, eds. Ray Mountains, Alaska: Environmental Analysis and Resources Statement. Middlebury College Press, Middlebury, Vermont. 390 pp.
15. W .J. Parton, S. J. Del Grosso, **I. C. Burke,** and D. S. Ojima. 2008. The Shortgrass Steppe and Ecosystem Modeling. Chapter 15 In Lauenroth, W. K., and I. C. Burke, eds. 2008. Ecology of the Shortgrass Steppe: a Long Term Perspective. Oxford Press.
16. **Burke, I. C**., W. K. Lauenroth, W. J. Parton, and C. V. Cole. 1994. Interactions of landuse and ecosystem function: A case study in the central Great Plains. Pages 79 - 95 In Groffman, P. M. and Likens, G. E., eds. Integrated Regional Models: Interactions Between Humans and Their Environment. Chapman Hall, New York.
17. Coleman, M. B., T L Bearly, **I. C. Burke**, and W. K. Lauenroth. 1994. Linking ecological simulation models to geographic information systems: an automated solution. Pages 397-412 In Michener, W. and J. Brunt, eds. Environmental Information Management and Analysis: Ecosystem to Global Scales..Taylor and Francis, London.
18. Gutmann, M., S. Pullum-Pinon, S. Gonzalez Baker, and **I. Burke**. 2004. German-origin settlement and agricultural land use in the twentieth-century Great Plains. Pages 138-168 In Helbich, W. and W. D. Kamphoefner, eds. German-American Immigration and Ethnicity in Comparative Perspective. Max Kade Institute for German-American Studies. University of Wisconsin Press. 356 P.
19. Elliott, E. T., **I. C. Burke**, C. A. Monz, S. D. Frey, K. H. Paustian, H. P. Collins, E. A. Paul, C. V. Cole, R. L. Blevins, W. W. Frye, D. J. Lyon, A. D. Halvorsen, D. R. Huggins, R. F. Turco, and M. V. Hickman. 1994. Terrestrial carbon pools: preliminary data from the Corn Belt and Great Plains regions. Pages 179 - 19 1 In Doran, J. W., D. C. Coleman, D. F. Bezdicek, and B. A. Stewart, eds. Defining Soil Quality for a Sustainable Environment. SSSA Special Publication no. 35. Madison, WI.
20. Pickett, S. T. A., **I. Burke**, V. H. Dale, J. R. Gosz, R. G. Lee, S. W. Pacala, and M. Shachak. 1994. Integrated Models of Forested Regions. Pages 120 - 141 in Groffman, P and Likens, G. E. et al, eds. Integrated Regional Models. Chapman and Hall. New York.
21. Aber, J. D., and **I. C. Burke** (rappateurs), with B. Acock, H. K. M. Bugmann, P. Kabat, J.-C. Menaut, I. R. Noble, J. F. Reynolds, W. L.Steffen, and J. Wu. 1999. Hydrological and biogeochemical processes in complex landscapes – What is the role of temporal and spatial ecosystem dynamics? Pages 335- 356 In Tenhunen, J. D., and P. Kabat, eds. Integrating hydrology, ecosystem dynamics, and biogeochemistry in complex landscapes. John Wiley and Sons. 367 p.

22. **Burke, I. C**. Landscape and regional biogeochemistry: approaches. 2000. Pages 277-288 In Sala, O.E., R.B. Jackson, H.A. Mooney, and R. Howarth, (eds) Methods in Ecosystem Science. Springer Verlag New York.
23. **Burke, I.C**., J.P. Kaye, S.P. Bird, S.A. Hall, R.L. McCulley, and G.L. Sommerville. 2003. Evaluating and testing models of terrestrial biogeochemistry: The role of temperature in controlling decomposition. Pages. 225-253 In Canham, C.D., J.J. Cole, and W.K. Lauenroth, editors. *Models in Ecosystem Science*. Princeton (NJ): Princeton University Press.
24. Epstein, H. E., J. M. Paruelo, G. Pineiro**, I. C. Burke**, W. K. Lauenroth, and J. E. Barrett. 2006. Interactions of water and nitrogen on primary productivity across spatial and temporal scales in grassland and shrubland ecosystems. Pages 201 – 217 in D'Odorico, P. and A. Porporato, eds. Dryland Ecohydrology. Springer-Verlag.
25. Lauenroth, W. K., **I.C. Burke,** and J. A. Morgan. The Shortgrass Steppe: The Region and Research Sites. Chapter 1 In Lauenroth, W. K., and I. C. Burke, eds. 2008. Ecology of the Shortgrass Steppe: a Long Term Perspective. Oxford Press.
26. **Burke, I. C.,** A.R. Mosier, P. B. Hook, D.G. Milchunas, J.E. Barrett, M.A. Vinton, R. L. McCulley, J. P. Kaye, R. A. Gill, H.E. Epstein, R. H. Kelly, W. J. Parton, C.M. Yonker, P. Lowe, and W.K. Lauenroth. 2008. Soil Organic Matter and Nutrient Dynamics of Shortgrass Steppe Ecosystems. Chapter 13 In Lauenroth, W. K., and I. C. Burke, eds. 2008. Ecology of the Shortgrass Steppe: a Long Term Perspective. Oxford Press.
27. Mosier, A. R., W. J. Parton, R. E. Martin, D. W. Valentine, D. S. Ojima, D. S. Schimel, **I. C. Burke,** E. C. Adair, and S. J. Del Grosso. 2008. Soil-Atmosphere Exchange of Trace Gases in the Colorado Shortgrass Steppe. Chapter 14 In Lauenroth, W. K., and I. C. Burke, eds. 2008. Ecology of the Shortgrass Steppe: a Long Term Perspective. Oxford Press.
28. D.G. Milchunas, W. K. Lauenroth**, I. C. Burke,** and J. K. Detling. 2008. Effects of Grazing on Vegetation. Chapter 16 In Lauenroth, W. K., and I. C. Burke, eds. 2008. Ecology of the Shortgrass Steppe: a Long Term Perspective. Oxford Press.
29. **Burke, I. C.,** W. K. Lauenroth, M.F. Antolin, J.D. Derner, D.G. Milchunas, J. A. Morgan, and P. Stapp . The Future of the Shortgrass Steppe. Chapter 19 In Lauenroth, W. K., and I. C. Burke, eds. 2008. Ecology of the Shortgrass Steppe: a Long Term Perspective. Oxford Press.

Symposium Proceedings, Book Reviews, and Other Publications

1. **Burke, I. C.** 2010. Travel trade-offs for scientists. Science 330:1476.
2. **Burke, I. C**. and W. K. Lauenroth. 2008. "Environmentalist" label not in our best interest. Frontiers in Ecology 7:240.
3. **Burke, I. C**. 2002. Book review of Ricklefs, Economy of Nature. BioScience 52(3): 303-305.
4. **Burke, I. C**. 2001. The national meetings: A primer on professional development and etiquette for graduate students (and others). Ecological Bulletin 82(3):198-199.
5. **Burke, I. C.** and W. K. Lauenroth. 1997. Teaching and research performance: Are they related? Ecological Bulletin 78(1):97-101.
6. **Burke, I. C**., and W. K. Lauenroth. 1997. The research-service balance and career trajectories. Ecological Bulletin 78(3)229-231.

7. **Burke, I.** 1989. Ecosystem analysis. Review of Schulze, E. D. and H. Zwolfer (eds). 1987. Potentials and limitations of ecosystem analysis. Ecological Studies Volume 61. Springer Verlag. Ecology 70(2):523-524.
8. **Burke, I**. 1982. The Mahoosuc Mountains, a Natural Areas Inventory. Maine State Critical Areas Program, State Planning Office, Augusta, Maine. 57 pp.
9. Cole, C. V., I. C. Burke, W. J. Parton, D. S. Schimel, and J. W. B. Stewart. 1989. Analysis of historical changes in soil fertility and organic matter levels of the North American Great Plains. 1989. Pages 436-438 In Unger, P. W., T. V. Sneed, and R. W. Jensen, eds. Proceedings of the International Conference on Dryland Farming, Bushland Texas, August 1988. Texas A & M University, College Station, TX.

Selected Invited Presented Papers (symposia and major talks)

Burke, I. C. 2015. Climate for Science: Colorado to Wyoming. Colorado-Wyoming Academy of Sciences, Denver.

Burke, I. C. 2014. Science as Dangerous Profession. Wyoming Series on Dangerous Ideas.

Burke, I. C. 2012. Biogeochemical consequences of woody plant encroachment. International workshop on woody plants in rangelands, Uruguay.

Burke, I. C. 2011. Grassland C and N in a changing world. Presented to the Chinese National Agricultural Academy. Beijing.

Burke, I.C. When does nitrogen matter? Duke University, Nicholas School of the Environment, 2010.

Burke, I. C. W. K. Lauenroth, J. E. Barrett, and S. E. Evans. 2009. Coupled biogeochemical cycles in arid and semiarid ecosystems. Invited symposium paper: Coupled Biogeochemical Cycles Symposium, Ecological Society of America meetings.

Burke, I. C. 2008. Managing ecosystems in a Changing Environment. Invited presentation to Region 2 Forest Service leaders, Colorado Springs, CO, Nov. 2008.

Burke, I. C. and William K. Lauenroth. 2008. A theory of ecosystem ecology. Invited symposium paper, Theory of Ecology Symposium, Ecological Society of America meetings.

Burke, I. C., and William K. Lauenroth. 2007. A theory of ecosystem ecology. Invited symposium paper: Theory of Ecology Symposium, University of Connecticut, Oct. 2007.

Burke, I.**C**. 2007. Environmental change and evolutionary history: when are our impacts reversible? Inaugural Lecture for the new Osher Lifelong Learning Center, Fort Collins, CO.

Burke, I. C., William K. Lauenroth, John M. Blair, and Eliana Bontti. 2005. Why do we care about nitrogen in semi-arid grasslands? Invited Symposium paper, Soil Science Society of American Annual Meetings, Salt Lake City, Utah.

Burke, I. C. 2004. Assessing ecosystem carbon changes for carbon crediting: important considerations. Keynote address to the Finnish Council on National Resources, symposium on Carbon Credit Science in Finland.

Burke, I. C. 2003 Soil carbon monitoring: processes, procedures, and errors. Keynote address to the European Soil Monitoring Network, Edinburgh, October 2003.

Burke, I. C., W. K. Lauenroth, J. A. Morgan, A. R. Mosier, and R. A. Pielke. 2003. Carbon management, land use, and global change: feedbacks among carbon, nutrient, and water cycles. Invited symposium paper: Biogeochemistry of grassland and shrubland

ecosystems: local to regional linkages and impacts of land use. Ecological Society of America meetings, Savannah, Georgia.

Burke, I. C. E. C. Adair, R. L. McCulley, P.Lowe, S. DelGrosso and W. K. Lauenroth. 2002. The importance of pulse dynamics in nutrient availability and ecosystem functioning: evidence and questions. Invited workshop paper: Pulse Dynamics Workshop, Ecological Society of America, Tucson.

Burke, I. C., J. P. Kaye, S. P. Bird, S. A. Hall, R.L. McCulley, and G. L. Sommerville. 2001. Evaluating and testing models of terrestrial biogeochemistry. Invited lecture, Cary Conference, Institute of Ecosystem Studies Millbrook NY.

Burke, I. C. 2001. Effects of row-crop agriculture in the shortgrass steppe region on C and N balance. Invited symposium paper. American Geophysical Union meetings, Boston, MA.

Burke, I. C. 2000. Spatial and temporal scaling in LTER. Invited Plenary at the All-Scientists Long Term Ecological Research Network meeting, Snowbird, UT.

Burke, I. C. 1999. Landuse management in the central grassland region: What are the important patterns? Invited symposium paper, Great Plains Grasslands Millenium Symposium, Omaha, NE.

Burke, I. C. 1998. Regional analysis of ecosystem structure and function: scaling from sites to regions. Invited workshop paper: The contribution of long-term ecological research and monitoring to broad-scale management needs: integrating up from regional intensive sites to develop regional perspectives", Estes Park, Colorado.

Burke, I. C. 1998. Complexity and Ecosystem Function at Landscape to Regional Scales: How do we simulate such complexity? Invited Presented at the Global Change and Terrestrial Ecology Synthesis meeting, Barcelona, Spain.

Burke, I. C. 1997. Moving from long-term to large-scale: Regional analysis of ecosystem structure and function by LTER programs. Invited symposium paper: Long Term Research in Ecology, cross-site collaborations for the future. Albuquerque, NM.

Burke, I. C. 1997. Global Change: Past, Present, and Future. Invited public lecture in Richmond, VA, sponsored by the Award Committee for the Distinguished Woman Scholar, Virginia Commonwealth University.

Burke, I. C. 1996. Great Plains carbon: great integrator, great stores, and great unknowns. Invited symposium paper: Synthesis in Ecology. Center for Ecological Synthesis and Analysis.

Burke, I. C. 1997. Advances in solving ecological problems: Regional to global scale studies. Invited lecture at the Cary Conference, Institute for Ecosystem Studies, Millbrook, NY.

Burke, I. C., H. E. Epstein, M. A Vinton, R. Kelly, K. Murphy, M. Robles, W. Lauenroth, M. Aguiar, and R. Gill. 1996. Species effects on grassland ecosystems. Invited symposium paper presented to the Symposium on Species Effects on Soils. Soil Science Society of America.

B**urke, I. C.** and W. K. Lauenroth. 1995. Biodiversity and ecosystem function at landscape to regional scales. Invited symposium paper: Global Change and Terrestrial Ecosystems Symposium on Biological Diversity and Ecosystem Function, Cedar Creek, Minn.

Burke, I. C. 1996. Regional analysis of the central grasslands: GIS-facilitated pattern and simulation analysis. Invited plenary lecture to the Third International Conference/Workshop on Integrating GIS and Environmental Modeling, Sante Fe, NM.

Burke, I.C. 1994. Landscape Biodiversity and Ecosystem Function. Invited workshop paper: Scientific Committee on Problems of the Environment Workshop on Biodiversity and Ecosystem Function, Monterey, California.

Burke, I. C. 1993. Regional assessment of land use in the central Great Plains. Plenary address to the Eighth Annual U.S. Landscape Ecology Symposium, Oak Ridge, TN.

Burke, I. C., and W. K. Lauenroth. 1992. Regional assessment of land use. Invited workshop presentation: International Workshop of Integrated Regional Models: Analysis of Interactions between Humans and their Environments, Institute of Ecosystem Studies, Millbrook, New York.

Burke, I. C., and W. K. Lauenroth. 1992. Regional analysis of climate change in grasslands. Invited workshop paper: Scientific Committee on Problems in the Environment workshop on Climate Change in Grasslands and Forests, Uppsala, Sweden.

Burke, I. C., W. K. Lauenroth, W. J. Parton, and C. V. Cole. 1991. The relevance of soil microbiological processes at the regional scale. Invited presentation: Soil Ecology meetings, Corvallis, Oregon.

Burke, I. C., and W. K. Lauenroth. 1990. What do LTER results mean? Extrapolating from site to region and decade to century. Invited plenary lecture: Long-Term Ecological Research All-Scientists meeting, Estes Park.

Burke, I. C., T. G. F. Kittel, L. A. Joyce, C. M. Yonker, D. S. Schimel, and W. J. Parton. 1989. Spatial modeling of ecosystem processes at the regional scale. Invited symposium paper: Spatial Modeling Symposium, Ecological Society of America Annual Meetings, Toronto.

Burke, I. C., D. S. Schimel, and W. J. Parton. 1988. Spatial modeling of soil organic matter and productivity in the Great Plains using GIS. Invited symposium paper: GIS in Ecology Symposium, Ecological Society of America Annual Meetings, Davis CA.

Grants and Contracts (only major grants (>$100,000) included for recent years):

Shortgrass Steppe Field Station. National Science Foundation. Principal Investigator. $230,000. 2009-2010.

Electronically Steerable Flash LIdar system for Vegetation Studies. Ball Aerospace. Principal Investigator. $200,000. 2008 – 2011.

Shortgrass Steppe Field Station. National Science Foundation. Principal Investigator. $270,000. 2007-8.

Shortgrass Steppe Field Station. National Science Foundation. Principal Investigator. $232,000. 2005-2009.

Shortgrass Steppe Long Term Ecological Research Program. National Science Foundation. Co-Principal Investigator. $4,680,000. 2002-2008.

Carbon, Water and Land-Use in Conservation Reserve Program Lands of the Shortgrass Prairie II. Co-Principal Investigator ($220,000)

Carbon, Water and Land-Use in Conservation Reserve Program Lands of the Shortgrass Prairie I. Co-Principal Investigator ($428,769)

Application of remotely sensed imagery to assessing the probabilities and carbon consequences of fire. NASA. $930,000. 2001-2004. Principal Investigator.

Ecosystem significance of soil as a long term sink for anthropogenic additions of N. National Science Foundation Ecosystems Program. $686,000. 1997-2000. Principal Investigator.

Development of User-friendly graphical interfaces for ecological simulation models and spatial databases. National Science Foundation Computational Biology Program. Co-Principal Investigator. $457,205. 1996-1999.

A Regional Assessment of Landuse Change in the Central Grasslands of the U.S. Environmental Protection Agency. Principal Investigator. $1,500,000. 1996-1999.

Shortgrass Steppe Long Term Ecological Research Program. National Science Foundation. Principal Investigator. $3,360,000. 1996 - 2002.

Population and environment in the US Great Plains. National Institutes of Health. Co-Principal Investigator. $475,000. 1995-2000.

Acquisition of an isotope facility to study atmosphere-ecosystem interactions. National Science Foundation -- Academic Research Infrastructure Program. Co - Principal Investigator. $250,000 (3 years).

Transient responses of grasslands and forests to climate change. Electric Power Research Institute. Co-Principal Investigator. Funded August 1994, $203,000 (1 year)

Constraints on production and decomposition in temperate semiarid grasslands. National Science Foundation. Co-Principal Investigator. Funded August 1994, $200,000 (3 years).

Cross-site LTER project of vegetation structure - soil process interactions-- A Supplement to BSR-9011659 LTER. National Science Foundation. Co-Principal Investigator. Funded April 1993. $74,781 (1 year).

Presidential Faculty Fellows Award. National Science Foundation. Principal Investigator. Funded May 1993. $500,000 (5 years).

Importance of plant species composition to ecosystem properties in the Central Great Plains grasslands. Dissertation Improvements Award for Mary Ann Vinton (Co-PI), National Science Foundation. Principal Investigator. Funded June, 1992, $11,000 (2 years).

Cross-Site Assessment of Climate Change on Ecosystem Dynamics -- A Supplement to BSR-9011659 LTER. National Science Foundation. Co-Principal Investigator. Funded May, 1992, $110,000 (1 year)

Agroecosystem carbon pools and dynamics. Environmental Protection Agency. Co-Principal Investigator. Funded May, 1991, $900,000 (3 years).

Regional analysis of ecosystem structure and function in the Central Grasslands of the United States. National Science Foundation, Ecosystem Studies. Principal Investigator. Funded April 1991, $427,000 (3 years).

Development of an integrated computing environment. Long-Term Ecological Research Program - Shortgrass Steppe. National Science Foundation. Principal Investigator. Funded April 1990, $46,000 (1 year).

Long-Term Ecological Research Program - Shortgrass Steppe. National Science Foundation. Co-principal Investigator. January 1991, $3,300,000 (6 years).

A Grassland/Agroecosystem Hierarchical GIS. Long-Term Ecological Research Program - Shortgrass Steppe. National Science Foundation. Principal Investigator. Funded March 1989, $87,000 (1 year).

Regional modeling of trace gas production in grassland and boreal ecosystems. NASA. Co-principal Investigator, Funded April 1989, $600,000 (4 years).

A Grassland/Agroecosystem Hierarchical GIS and LTER Network Bulletin Board. Long-Term Ecological Research Program - Shortgrass Steppe. National Science Foundation. Principal Investigator. Funded June 1, 1988 for $100,000 (1 year).

University and Professional Service: (denotes current activities)*

National and International Service (* current appointment)

Conservation Fund, Board member, 2019-present

National Academy of Sciences, National Research Council, Committee on the Practice of Sustainability, Workshop on Lanscape Analysis. Chair, 2015

National Academy of Sciences, National Research Council, Committee on Scientific Tools and Approaches for Sustainability. 2013 - 2014

Review Editor, Third National Climate Assessment, United States Global Change Research Program, 2013.

Environmental Protection Agency, Science Advisory Board, Member, 2010 – 2016

Environmental Protection Agency, Scientific Advisory Board's Committee on Ecological Processes and Effects. Chair, 2006 -.

Grand Challenges in Natural Resources Scholarship and Education: Working group member, Association of Public and Land-Grant Universities. 2013.

National Academy of Sciences, National Research Council, Committee on Environmental and Economic Impacts of BioFuels. 2010 - 2011. Co-Chair.

Teton Science School Board, Member 2008-2016

Environmental Protection Agency, Scientific Advisory Board's Committee on Report of the Environment, Member 2008-2012

Ecological Society of America, International Honorary Award, Chair 2004- 2010

Advisory Committee for the Kansas-Oklahoma University Cybercommons NSF EpScor project. Member, 2011 – present

Advisory Board for the Chinese Agricultural Academy, Member 2011 - present

Council of Environmental Deans and Directors, National Council on the Environment. Member, 2008 – 2016

Soil Science Society of America, Task Force on Diversity, 2006 - 2010

*Contributing Editor, Faculty of 1000, 2006 – present

*Sand County Foundation, Member, Board of Directors, 2005- present

Member, Domain Specific Advisory Committee, National Environmental Observatory Network (NEON). 2008-present

Program Committee for 10th Yellowstone National Park Bienniel Science Conference, Member, 2009-10.

Steering Committee, American Association for the Advancement of Science, Report on Vision and Change in Undergraduate Biology Education, A Call to Action. 2009-2011.

Soil Science Society of America Task Force on Diversity, 2007-9.

National Academy of Sciences, National Research Council, Committee on a New Biology for the 21st Century: Ensuring the United States Leads the Coming Biology Revolution. 2007-2009

Co-Organizer/Professor: Ecosystem modeling for Mongolian Scientists. 10 day workshop in Mongolia, Summer 2006.

Environmental Protection Agency, Expert Panel, Indicators for Ecological Processes, 2007-2008.

Long Term Ecological Research Program, Synthesis Committee: Leader, Biogeochemical Research. 2005

National Science Foundation, Long Term Ecological Research Program, Site Review Team Member for North Temperate Lakes site, May 2005

National Academy of Sciences – National Research Council. Committee on the Environmental Impacts of Wind Energy. 2005-7.

NASA, Peer Review of Carbon Science Proposals, June 2004.

National Science Foundation, Division of Environmental Biology. Committee of Visitors, 2003.

Oak Ridge National Laboratory Distributed Active Archive Center, User Working Group.2002-2007

Long Term Ecological Research Network, Scientific Vision Committee. 2000 - 2005 .

National Academy of Sciences, Environmental Studies and Toxicology Advisory Board, 1999 – 2002

National Science Foundation Long Term Ecological Research, Urban Competition Panel, July 1997

National Science Foundation Long Term Ecological Research National Network Executive Committee, 1997-2000.

White House Committee on Ecological Index Sites, 1997-1999.

Forest Ecology and Management, Editorial Board, 1997-1999.

Steering Committee, Dahlem Conference 1998, Linking Biogeochemistry and Hydrology at Landscape to Regional Scales. Berlin.

Ecosystems, Editorial Board, 1997-2000.

Scientific Testimony: to Senate Subcommittee on Science, Technology, and Space, September 17, 1996, on Computational Biology and Ecosystem Ecology.

International Geosphere-Biosphere Program, Global Change and Terrestrial Ecosystems program, Scientific Steering Committee, and Focus 4.2 Leader: Biodiversity and Ecosystem Function at Landscape to Regional Scales.

Ecological Society of America, Nominating Committee, 1996-7, 1999.

Smithsonian Museum Grasslands Advisory Committee, 1995-9.

Ecological Applications, Editorial Board (Associate Editor), 1995-2008. Ecological Society of America.

International Long-Term Ecological Research for Eastern Asia; National Science Foundation Planning Team, Taipei, Taiwan, April 1995.

National Science Foundation. Center for Ecological Synthesis panel, April 1994 - September 1994.

Scientific Committee on Problems of the Environment (SCOPE), International Workshop on Biodiversity and Global Change. March 1994, Asilomar, California.

Global Change and Terrestrial Ecosystems, International Geosphere - Biosphere Program. Cross-continental transects workshop. Point Reyes, California, August 1993.

Scientific Committee on the Problems of the Environment (SCOPE), International Workshop on "The effects of climate change on production and decomposition in coniferous forests and grasslands", Participant. September 1992, Uppsala, Sweden.

National Science Foundation, Committee of Visitors. Review of the National Science Foundation Ecological Cluster, Ecology and Ecosystems Programs, July 1992.

Ecological Society of America, Awards Committee, 1991 - 1993

National Science Foundation, Research Training Grants Panel, 1991.

International Council of Scientific Unions (ICSU), International Geo-Biosphere Program (IGBP) jointly sponsored International Global Atmospheric Chemistry Project (IGAC): Member, Coordinating Committee for the "Mid-latitude Ecosystems as Net CO_2 Sinks" Activity. 1991 - 2000.

National Academy of Science, National Research Council, EPA EMAP Review and Advisory Panel, 1991-1995.

National Science Foundation, Conservation and Restoration Biology Panel, 1990.

National Science Foundation, Long Term Ecological Research Program, review team member, North Inlet site, May, 1989.

Host, GIS Workshop for the National Science Foundation, Long Term Ecological Research Program. September 18-29, 1989

Host, Fourth Annual Landscape Ecology Symposium, "Linking Landscape Structure to Ecosystem Processes". Colorado State University, Fort Collins, Colorado, March 1518, 1989.

University Service – (1987-2012; have not tallied since then)

At-Large Representative of the College of Natural Resources to the Faculty Council, Colorado State University, 1990-1993.

Faculty Council, Committee on Committees. Representative of the College of Natural Resources, Colorado State University. 1992-1995.

Program for Ecological Studies, Colorado State University, Secretary, Member of Executive Committee 1990-2.

Faculty Research Grants Committee, 1991-92, College of Natural Resources Representative.

At-Large Representative of the College of Natural Resources to the Faculty Council, Colorado State University, 1994 - 7.

Chair, CSU Faculty Honors Council, University Honors Program, Colorado State University, 1994-2001.

CSU University Symposium on Undergraduate Research and Creativity. Committee member, representative of the College of Natural Resources, 1995-present

University Commencement Speaker Committee, member, 1995-6.

Commission on Undergraduate Education, 1995-7, College of Natural Resources Representative. Advisory Committee to the Colorado State University Experiment Station, College of Natural Resources Representative, 1995-.

CSU Graduate Degree Program in Ecology, Member, Executive Committee 1997-1999

Chair, Honors Program Search Committee for Assistant Director, 1998.

Member, CSU University Honors Task Force, 1999

Member, CSU University Task Force on Environmental Studies, 1999
Member, CSU College of Natural Resources, Interdisciplinary Vision Committee, 2000
Member, CSU Search Committee for Vice President for Research, 2000
Member, CSU Academic Enhancement Program Review Team, 2002
Member, CSU Board of Governor's Teaching Award Review Committee, 2003
Member, Review Team of CSU Office of Instructional Services, 2005
Member, CSU Honorary Degrees and Buildings committee, 2004-2005.
Member, Advisory Board for The CSU Institute on Teaching and Learning (TILT) 2006 –
Member, CSU Graduate School Advisory Committee for Bridge to Doctorate Program, 2006 -8
Member, CSU Course Re-design committee for TILT, 2006-2007
Member, CSU University Library Vision Committee, 2007
Member and Co-Chair, CSU University Task Force on School of the Environment
Member, Energy Resources Council, University of Wyoming, 2008-2016
Member, School of Energy Resources, Academic Council, University of Wyoming, 2008-10.
Member, UW President's Task Force on Biodiversity, 2011
Chair, Task Force on the University Studies Program, Stage 1, University of Wyoming, 2011-12
*Member, Honors Program Review Committee, University of Wyoming, 2015

College and Department Service (primarily at Colorado State University)

College of Natural Resources, Member of GIS Committee. 1990-
College of Natural Resources, Member of Computer Committee. 1991-
College of Natural Resources, Member of Dean's Search Committee, 1991.
College of Natural Resources, Member of Associate Dean's Search Committee, 1992.
Department of Forest Sciences, Member of Head's Search Committee, 1997-8
Member, Environmental Studies White Paper Committee, 1998
Member, College of Natural Resources Commencement Committee, 1999-2002.
Co-Chair, Natural Resources Management Degree Program, 1999-present
Chair, Search Committee, Remote Sensing Faculty Position, 2001-2002
Member, CSU Advisory Committee for the Center on Collaborative Conservation, 2005 – 2008
Member, WCNR Search Committee for Information Technology Webmaster
Graduate committee member, PhD and M.S. students (40 to date)
Courses taught:

Careers in Ecology (ECOL 5550; Doctoral Seminar FES): 2012, 2013, 2014, 2015,2018,2019
Environment (ENR 1200), 2010, 2011, 2012
Biogeochemistry (NR 660), 1989, 1990, 1991, 1993, 1994, 1995, 1996, 1998, 1999, 2000, 2001, 2005, 2007, 2015
Ecosystem Ecology (EY 581), 2002, 2004, 2006
Introduction to Geographic Information Systems (NR 322), 1991
Synecology (team-taught) (EY 501), 1992, 1993, contributed other years as well.
Environmental Science (NR 120), 1992, 1993, 1997, 1998, 1999, 2006, 2007
Environment Science Honors (NR 120b), 1994, 1995, 1997, 1998, 1999
Forestry Graduate Seminar (F 793), 1992, 1993, 1994, 1995, 1997, 1998, 1999, 2000
General Ecology (BY 220 and 320), Fall 2000, 2001,2002,2004,2005.

Freshman Experience Seminar (NRCC192): Fall 2001,2002.
Graduate Seminar in Ecology (EY592): Spring 2003
Freshman Honors Seminar (HP 192): Fall 2004, 2005

Students, Postdoctoral Associates:

Tamiko Ihori, M.S. 1993
Mary Ann Vinton, Ph.D. 1994 (currently Associate Professor, Creighton University)
Paul Hook, Postdoctoral Associate 1993 – 94 (currently Senior Wetland and Watershed Scientist, Intermountain Aquatics)
Martin Aguiar, Postdoctoral Associate 1994 – 95 (currently Professor, Director of Environmental Studies at Univ. of Buenos Aires)
Robin Kelly, M.S. 1995 (currently Research Associate, Colorado State University)
Marcos Robles, M.S. 1995 (currently Scientist, Nature Conservancy, New Mexico)
Howard Epstein Ph.D. 1998 (currently Professor, University of Virginia)
Jeb Barrett, Ph. D. 1999 (currently Associate Professor, Virginia Tech. University)
Rick Gill, Ph.D. 1999 (currently Associate Professor, Brigham Young University)
Penny Sinton, MS 2000 (currently Environmental Scientist, Geomega, Boulder, CO)
Rebecca McCulley, PhD 2002 (currently Associate Professor, University of Kentucky)
Carol Adair, PhD 2000-2005 (currently Assistant Professor, University of Vermont)
Sonia Hall, PhD 2000-2005 (currently Arid Lands Ecologist, Nature Conservancy, Washington)
Bohyoung Sohn, MS 2000 (currently a scientist in Korea)
Jason Kaye, Postdoctoral Associate, 2001-2002 (current Professor, Pennsylvania State University)
Sarah Hamman, PhD 2006 (currently Restoration Ecologist, Center for Natural Lands Management, Nature Conservancy Scientist, Washington State)
Melissa McHale, PhD 2007 (currently Assistant Professor, North Carolina State University).
Mark Gathany, PhD 2008 (currently Associate Professor, Cedarville University)
Eliana Bontti, PhD 2009. (currently Postdoctoral fellow, Darwin Institute)
Kirstin Holfelder, MS 2009 (currently PhD student, Colorado State University).
Sara Brown, PhD 2011 (currently Assistant Professor, New Mexico Highlands University)
Sarah Evans, PhD 2012 (currently Assistant Professor, Michigan State University)
Matt Cleary, MS 2012
Avirmed Otgonsuren, PhD 2013 (Fulbright Scholar with me, currently Research Scientist, Wildlife Conservation Society of Mongolia)
Caitlin Rottler, PhD 2015
Meg Mobley, Postdoctoral Associate, 2012 – 2014 (currently Instructor at Oregon State University)
Jessica Swindon, Masters student 2016-18, Yale (currently at Aquaponics).
Chris Beltz, PhD student, 2014- present