

SCOTT DONALD BRIDGHAM

Department of Biological Sciences
P.O. Box 369
University of Notre Dame
Notre Dame, IN 46556-0369
(219) 631-4921 Fax: (219) 631-7413 E-Mail: Bridgham.1@nd.edu

Professional Preparation

B.A., English, University of Maine, with Highest Honors, 1980
B.A., Zoology, University of Maine, with Highest Honors, 1982
M.S., Ecology, University of Minnesota, 1986
Ph.D., Ecology, Duke University, 1991
Postdoctoral Research Associate, Natural Resources Research Institute, University of Minnesota,
Duluth, 1991-1992
U.S. Department of Energy Global Change Distinguished Postdoctoral Fellow, University of
Minnesota, Duluth, 1992-1993

Appointments

Assistant Professor, Dept. of Biological Sciences, Univ. of Notre Dame, Sept. 1994 - present.
Research Associate, Natural Resources Research Institute, Univ. of Minnesota—Duluth, July
1992 - Aug. 1994

5 Publications Most Closely Related to Project

- Bridgham, S. D., J. Pastor, J. A. Janssens, C. Chapin, and T. J. Malterer. 1996. Multiple limiting gradients in peatlands: A call for a new paradigm. *Wetlands* 16:45-65.
- Bridgham, S.D., K. Updegraff, and J. Pastor. 1998. Carbon, nitrogen, and phosphorus mineralization in northern wetlands. *Ecology* 79:1545-1561.
- Bridgham, S. D., J. Pastor, K. Updegraff, T. J. Malterer, K. Johnson, C. Harth, and J. Chen. 1999. Ecosystem control over temperature and energy flux in northern peatlands. *Ecological Applications* 9: 1345-1358.
- Updegraff, K., S. D. Bridgham, J. Pastor, P. Weishampel, and C. Harth. *In press*. Response of CO₂ and CH₄ emissions in peatlands to warming and water-table manipulation. *Ecological Applications*.
- Weltzin, J. F., J. Pastor, C. Harth, S. D. Bridgham, K. Updegraff, and C. T. Chapin. *In press*. Response of bog and fen plant communities to warming and water-table manipulations. *Ecology*.

Synergistic Activities

National Science Foundation CAREER Award (9/96 - 8/2001) and numerous Research Experiences for Undergraduates (REU) awards for integration of teaching and research, with an emphasis on undergraduate participation in field research.

Editorial boards of *Soil Science Society of America Journal* (1994-1997) and *Wetlands* (1997-2000).

Steering Committee of the Indiana Grand Kankakee Marsh Restoration Project, 1998 – present.

Leader of Minnesota peatlands site in the Ecosystem Warming Network within the Global Change and Terrestrial Ecosystems (GCTE) under the auspices of the International Geosphere-Biosphere Programme (IGBP).

Member of several funding panels for NSF, EPA, and USDA, frequent ad hoc reviewer for funding agencies and many scientific journals.

Collaborators

Jiquan Chen, Michigan Technological Univ.; Christopher Craft, Indiana Univ.; Steve Frolking, Univ. of New Hampshire; Jan Janssens; Charles Kulpa, Univ. of Notre Dame; Gary Lamberti, Univ. of Notre Dame; Thomas Malterer, Univ. of Minnesota; Wally Miller, Univ. of Nevada; Chein-Lu Ping, Univ. of Alaska; Robert Qualls, Univ. of Nevada; Jim Richardson, North Dakota State Univ.; Nigel Roulet, McGill Univ.; Robert Shannon, Pennsylvania State Univ.; Joseph Schubauer-Berigan, U.S.-EPA; Scott Tyler, Univ. of Nevada; Karen Updegraff, Univ. of Minnesota; Kelman Wieder, Villanova Univ.; Peter Weishampel, Cornell Univ.; Jeffrey White, Indiana Univ.

Thesis advisees: Carmen Chapin, Cornell Univ.; Candice Goy, Univ. of Notre Dame; Chever Kellogg, Univ. of Notre Dame; Laurie Kellogg, Univ. of Notre Dame; Sandra Hellman, EPA; Melanie Vile, Univ. of Notre Dame

Postdoctoral Sponsor: Jake Weltzin, Univ. of Tennessee

Thesis and postdoctoral advisors: Donald McNaught, Univ. of Minnesota (M.S. advisor); Curtis Richardson, Duke Univ. (Ph.D. advisor); John Pastor, Univ. of Minnesota (Postdoc. advisor); Carol Johnston, Univ. of Minnesota (Postdoc advisor)

JOHN PASTOR

Natural Resources Research Institute
University of Minnesota Duluth
5013 Miller Trunk Hwy.
Duluth, MN 55811
218/720-4271
Email: jpastor@nrri.umn.edu

Professional Preparation

B.S., Geology, University of Pennsylvania. May 1974.
M.S., Soil Science, University of Wisconsin, Madison. December 1977.
Ph.D., Forestry and Soil Science, University of Wisconsin, Madison. June 1980 (Graduate Advisors-James G. Bockheim and John Aber).
Postdoctoral Research Associate, Department of Forestry, University of Wisconsin, Madison, WI 53706 (June 1980-July 1983) (Advisor-John Aber).
Postdoctoral Fellow, Environmental Sciences Division, Oak Ridge National Laboratory, Oak Ridge, 37831 (August 1983-June 1985) (Advisor-W.M. Post).

Appointments

Professor, Department of Biology and Natural Resources Research Institute, University of Minnesota, Duluth, MN 55811 (July 1985-present).
Adjunct Professor, Department of Ecology and Behavioral Biology, University of Minnesota, Minneapolis (November 1987-present).

5 Publications Most Closely Related to Project

- Pastor, J. and W.M. Post. 1988. Response of northern forests to CO₂-induced climatic change. *Nature* 334:55-58.
- Pastor, J. and W.M. Post. 1993. Linear regressions do not predict the transient responses of eastern North American forests to CO₂ induced climate change. *Climatic Change* 23:111-119.
- Pastor, J. 1995. Diversity of biomass and nitrogen distribution among species in arctic and alpine tundra. Pages 255-270 in: *Arctic and Alpine Biodiversity: Patterns, Causes, and Ecosystem Consequences*, F.S. Chapin and C. Korner (eds). Springer-Verlag, Heidelberg.
- Pastor, J. and Y. Cohen. 1997. Nitrogen cycling and the control of chaos in a boreal forest model. Pages 304-319 in: *Control and Chaos*, K. Judd, A. Mees, K. Teo, and T. Vincent (eds). Mathematical Modelling Series, Birkhäuser, Boston.
- Bridgman, S.D., J. Pastor, K. Updegraff, T.J. Malterer, K. Johnson, C. Harth, and J. Chen. 1999. Ecosystem control over temperature and energy flux in northern peatlands. *Ecological Applications* 9: 1345-1358.

Synergistic Activities

NSF Ecosystems Studies Panel (March 1989-October 1991)

Testimony on Voyageurs National Park and Boundary Waters Wilderness, U.S. Senate, Committee on Energy and Natural Resources (July 18, 1996)

Visiting Scientist, Macaulay Land Use Research Institute, Aberdeen, Scotland (May 1997)

NAS/NRC Committee to Evaluate Indicators for Monitoring Aquatic and Terrestrial Environments (January 1997 - present)

Testimony on the Effects of Global Climate Change on Minnesota's Ecosystems, State of Minnesota, House Environmental Policy Committee (April 1998)

Collaborators

J.D. Aber, EOS, University of New Hampshire (Former Advisor)

Scott Bridgham, Notre Dame University

Jiquan Chen, Michigan Technological University

Yosef Cohen, University of Minnesota

Steve Frolking, University of New Hampshire

W.M. Post, Oak Ridge National Lab (Post-Doctoral Advisor)

Nigel Roulet, McGill University

Jake Weltzin, University of Tennessee

Former Ph.D. Students and Postdoctoral Fellows

David Wedin, School of Natural Resources, University of Nebraska, Lincoln, NE 68583

Scott Bridgham, Dept. of Biological Sciences, University of Notre Dame, Notre Dame, IN 46556

Heather Erickson, Institute of Tropical Forestry, USFS, Rio Piedras, Puerto Rico 00928

Ron Moen, Natural Resources Research Institute, University of Minnesota, Duluth, MN 55811

NIGEL ROULET

Geography Department
McGill University
805 Sherbrooke Street West
Montreal, Quebec H3A 2K6
(514) 398-4945 Fax: (514) 398-7437
roulet@felix.geog.mcgill.ca

Professional Preparation

B.S., Biology/Geography, University of Trent, 1979
M.S., Watershed/Ecosystem, University of Trent, 1981
Ph.D., Geography, McMaster Univ., 1985

Appointments

Director, Centre for Climate & Global Change Research, McGill University, 1996 - present.
Professor, Department of Geography, McGill University, 1999 – present.
Associate Professor, Department of Geography, McGill University, 1994-1999.
Associate Professor, Department of Geography, York University, 1989 – 1993.
Visiting Professor, Department of Geography, Umëa University, Sweden, 1991-1992
Assistant Professor, Department of Geography, York, University, 1985-1989

5 Publications Most Closely Related to Project

Roulet, N. T., A. Jano, C. Kelly, L. Klinger, T. Moore, R. Protz, J. Ritter, and W. Rouse. 1994.
Role of the Hudson Bay Lowland as a global source of methane. *Journal of Geophysical Research* 99(D1):1439-1454.

Devito, K., A. Hill, and N. T. Roulet. 1996. Groundwater – surface water interactions in headwater wetlands on the Canadian Shield. *Journal of Hydrology* 181:127-147.

Waddington, J. M. and N. T. Roulet. 1996. Scales of boreal peatland topography and the spatial variability of CH₄ emissions and CO₂ exchange. *Global Biogeochemical Cycles* 10:233-245.

Braunfireun, B. A. and N. T. Roulet. *In press*. The baseflow and stormflow hydrology of a Precambrian Shield headwater peatland. *Hydrological Processes*.

Hilbert, D. W., Roulet, N. and Moore, T. *In press*. Modeling and analysis of peatlands as dynamic systems. *Journal of Ecology*.

Synergistic Activities

Over 30 invited research seminars and presentations in last 5 years, including invitations to special workshops sponsored by the International Geosphere Biosphere Program (IGBP), NATO Advanced Science Workshops and Study Programs, and Gordon Research Conferences.

Co-Chair of IPCC/OECD committee of global CH₄ emissions inventory, Chair of special sessions for experiments and studies such as the Boreal Ecosystem Atmosphere Study, InterComparison

of Satellite and Land Surface Processes (ISCLSP), and the IGBP meetings on Land Surface Characterization (GAIM/IGAC/GCTE) and Arctic Ecosystems Response to Climate Change (GCTE)

Frequent reviewer of journal articles and research proposal for NSERC, NSF, NASA, EPA, NOAA, etc.

Member of NSERC Strategic Grant Panel D

Associate Editor of *Wetlands*

Collaborators

Scott Bridgham, Univ. of Notre Dame; Jiquan Chen, Michigan Technological Univ.; Steve Frolking, Univ. of New Hampshire; Tim Moore, McGill Univ.; John Pastor, Univ. of Minnesota; Jake Weltzin, Univ. of Tennessee

Ph.D. and M.Sc. Supervision: Craig Allan, Univ. of North Carolina; Alice Dove, Environmental Entrepreneurs Program sponsored by Ontario Association of Environmental Consultants; Mike Waddington, McMaster Univ.

Postdoc. Supervision: David Hilbert, CSIRO, Australia

STEVE FROLKING

Institute for the Study of Earth, Oceans, and Space
University of New Hampshire, Durham, NH 03824
Ph: 603-862-0244; Fax: 603-862-0188; e-mail: steve.frolking@unh.edu

Professional Preparation

- Ph.D., Earth Sciences (Biogeochemistry), University of New Hampshire, 1989-1993.
- M.S., Physics, U. of New Hampshire, 1980-1983.
- B.S. (Summa Cum Laude), Physics, U. of New Hampshire, 1977-1980.

Appointments

1995 - : Research Assistant Professor, Institute for the Study of Earth, Oceans, and Space, University of New Hampshire.
1993-1995: Post-Doctoral Fellow, NOAA Program in Climate and Global Change.
1989-1993: Graduate Fellow, Dept. of Earth Sciences, University of New Hampshire.
1986-1989: Instructor in Physics, U. of New Hampshire and St. Anselm College.

Honors And Fellowships

- NOAA Program in Climate and Global Change Post-Doctoral Fellowship, 1993-1995.
- NASA Graduate Student Researcher Program Fellowship, 1990-1993.
- UNH/NASA Training Grant Graduate Fellowship, 1989-90.

Society Memberships

- American Geophysical Union; Ecological Society of America; Am. Assoc. for Advancement of Science.

5 Publications Most Closely Related to Project

Frolking S, Roulet NT, Moore TR, Richard PJH, Lavoie M. 2000. Modeling northern peatland decomposition and peat accumulation. Submitted to *Global Change Biology*, Feb. 2000.

Bubier JL, Frolking S, Crill P, Linder E (1999) Net ecosystem productivity and its uncertainty in a diverse boreal peatland using CO₂ exchange measurements, *J. Geophys. Res.* 102: 27,683-27,692.

Frolking S, Bubier JL, Moore TR, Ball T, Bellisario LM, Bhardwaj A, Carroll P, Crill PM, Lafleur PM, McCaughey JH, Roulet NT, Suyker AE, Verma SB, Waddington MJ, Whiting GJ (1998) Relationship between ecosystem productivity and photosynthetically-active radiation for northern peatlands, *Global Biogeochem. Cycles.* 12:115-126.

Frolking, S (1997) Sensitivity of spruce/moss boreal forest carbon balance to seasonal anomalies in weather, *J. Geophys. Res.*, 102: 29,053-29,064.

Frolking, S, ML Goulden, SC Wofsy, S-M Fan, DJ Sutton, JW Munger, AM Bazzaz, BC Daube, PM Crill, JD Aber, LE Band, X Wang, K Savage, T Moore, and RC Harriss (1996) Modelling temporal variability in the carbon balance of a spruce/moss boreal forest, *Global Change*

Synergistic Activities

- Member of the IPCC/OECD/IEA Expert Group on N₂O Emissions from Agricultural Soils.
- Member of scientific advisory team for University of New Hampshire's ESIP development group, part of NASA's Earth Science Information Partner (ESIP) WP-Federation. The UNH ESIP addresses the Earth's primary biogeochemical cycles and considers how they are being changed by humans. We are developing a set of coordinated, technologically-oriented products and services which use Geographic Information Systems (GIS) tools to provide spatial information to remote users. This site presents EOS-WEBSTER as our Working Prototype (WP) Earth science data search and retrieval system within NASA's Federation of ESIPs. EOS-WEBSTER represents a dramatic departure from previous centralized data-archiving approaches because it is driven by the requirements of our collaborators within the evolving federation, and the Earth system science community at large. [<http://www.esip.sr.unh.edu/>]

Collaborators

Aber J (UNH); Blanchet J-P (U. Quebec a Montreal); Braswell R (Max Planck Inst. Biogeochem., Jena); Bubier JL (Mt. Holyoke College); Cao MQ (RCEES, CAS, Beijing); Carroll P (USEPA); Crill PM (UNH); Dai ZH (RCEES, CAS, Beijing); Dörsch P (U. Gottingen); Flessa H (U. Gottingen); Haberbosch C (GSF, Oberschleissheim); Holden JB (UNH); Jenkins JP (UNH); Kimball J (U Montana); Kittel T (NCAR); Lafleur PM (Trent U.); Lammers RB (UNH); Li C (UNH); Linder E (UNH); McCaughey JH (Queen's U); McDonald K (NASA JPL); Moore B (UNH); Moore TR (McGill U); Mosier AR (USDA); Ojima DS (Col. State U.); Parton WJ (Col. State U.); Potter CS (NASA Ames); Priesack E (GSF, Oberschleissheim); Richard P (U. Montreal); Roulet NT (McGill U); Running SW (U Montana); Salas W (UNH); Smith KA (U Edinburgh); Stenger R; Suyker AE (U. Nebraska); Verma SB (U. Nebraska); Vörösmarty CJ (UNH); Waddington MJ (McMaster U); Wang XK (RCEES, CAS, Beijing); Way JB (NASA JPL); Weitz A (Max Planck Inst. Biogeochem., Jena); Wenzhi S (RCEES, CAS, Beijing); Whiting GJ (Christopher Newport U); Xiao X (UNH); Zhuang YH (RCEES, CAS, Beijing); Zimmermann R (U. Bayreuth).

My advisors

Robert Harriss (NCAR), Changsheng Li (U. New Hampshire), Berrien Moore III (U. New Hampshire), John Aber (U. New Hampshire).

My advisees (2 MS, 2 PhD)

Antje Weitz (Max Planck Inst. Biogeochem., Jena Germany), Kevin Tu (UC-Berkeley), Julian Jenkins (U. New Hampshire), Jon Holden (U. New Hampshire).

JIQUAN CHEN

School of Forestry & Wood Products
Michigan Technological University
1400 Townsend Drive
Houghton, MI 49931-1295
(906) 487-3432
jiq@mtu.edu

Professional Preparation

Inner Mongolia University, Plant Ecology
Chinese Academy of Science, Forest Ecology, M.S. 1986
University of Washington, Ecosystem Analysis, Ph.D. 1991
University of Washington, Postdoctoral Assoc., Stream & landscape, 1/1992 – 8/1993

Appointments

9/1998 – present: Associate Prof., School of Forestry & Wood Products, Michigan Technological University, MI
9/1993 – 8/1998: Assistant Prof., School of Forestry & Wood Products, Michigan Technological University, MI
1/1992 – 8/1993: Research Associate, College of Forest Resources, University of Washington, WA
8/1987 – 12/1991: Research Assistant, College of Forest Resources, University of Washington, WA
9/1986 – 7/1987: Research ecologist, Chinese Academy of Science, China
8/1983 – 8/1986: Research Assistant, Chinese Academy of Science, China

5 Publications Most Closely Related to Project

Chen, J. S.Saunders, T.Crow, K.D. Brosofske, G.Mroz, R.Naiman, B.Brookshire, and J.Franklin. 1999. Microclimatic perspectives in forest ecosystems and landscapes. *BioScience* 49(4): 288-297.
Bridgham, S.D., J.Pastor, K. Updegraff, T.J. Malterer, K.Johnson, C. Harth, and **J. Chen**. Ecosystem control over temperature and heat flux will modulate climate change effects on northern peatlands. *Ecological Applications* 9: 1345-1358.
Chen, J. and J.F. Franklin. 1997. Growing-season microclimate variability within an old-growth Douglas-fir forest. *Climate Research* 8(1): 27-34.
Chen, J., J. F. Franklin, and T. A. Spies. 1995. Growing season microclimatic gradients extending into old-growth Douglas-fir forests from clearcut edges. *Ecological Applications* 5(1): 74-86.
Chen, J., J. F. Franklin, and T. A. Spies. 1993. Contrasting microclimatic patterns among clearcut, edge, and interior area of old-growth Douglas-fir forest. *Agricultural and Forest Meteorology* 63(3/4): 219-237.

Synergistic Activities

Memberships:

National Association of State Universities and Land-Grant Colleges (NASULGC) (3/1999 - present)/American Association for the Advancement of Science (AAAS) (1995 - present)/Ecological Society of America (1987 - present)/Society for Conservation Biology (1996 - present)/International Association for Landscape Ecology (1991 - present)/Society of American Foresters (1993 - present)/International Canopy Network (ICAN) (1995 - present)/Xi Sigma Pi (1989 - present)/SINO-Ecologists Club (1988 - present)/Northwest Sciences (1998-

present)

Frequent reviewer for: National Science foundation, USDA NRI, Ecological Applications, Forest Science, Canadian Journal of Forest Research, Journal of Ecology, Forest Ecology and Management, etc.

Awards: Charlie C. Bullard Fellow, 9/1/1999- 6/30/2000, Harvard University
1999 most influential in the development of my scientific career, Intel Sci., Talent Search
The 2nd for the Graduate Student Seminar, 1990. University of Washington
Outstanding Graduate Student for 1983-1987, Chinese Academy of Science

Professional Service (selected):

International Relationship Committee (93-99), chair, 1996-99, Ecological Society of America
Asia Ecology Section, Chair, 1993-94, Ecological Society of America
SINO-ECO Club, president, 1993-94
Acta Ecology, Associate Editor (1998 - present)
National Association of State Universities and Land-Grant Colleges (NASULGC), Ecology Section, Executive Committee Member, (9/99 – present)

Research: PI and CO-PIs of 32 funded projects since 1993. Three examples are:

1. Adaptive landscape management: hypothesis, options, and returns (Chen and Desanker), USDA National Res. Initiative (NRI), \$228,000, 9/97 - 8/00)
2. Carbon and energy flow and plant community response to climate change in peatlands (Chen), National Science Foundation (NSF), \$355,159, 8/97 - 7/01)
3. CO₂ and H₂O fluxes of managed forests in responding to global climate change (Chen), WESTGEC/NIGEC/DOE, \$150,000 (7/1/97- 6/30/00).

Collaborators

(i) **Collaborators:** Bible, Ken; Bradshaw, Gay A.; Bridgham, Scott D.; Brosofske, Kim D.; Burton, Andrew; Crow, Thomas, R.; Davis, Ken; Desanker, Paul V.; Dong, Jianping; Drummer, Thomas D.; Erickson, Heather; Ford, David; Franklin, Jerry F.; Gale, Margaret R. Gustafson, Eric; Harmon, Mark; Harth, Cal; Hobbie, Eric; Hsiao, Ted; Huebner, Cindy; Jurgensen, Martin; Longdo, Andy J.; Mladenoff, David; Mroz, Glenn D.; Naiman, Robert J.; North, Malcolm; Parker, Geoffrey G; Pastor, John; Paw U, Kyaw Tha; Peterson, Rolf; Pregitzer, Kurt; Qi, Ye; Reed David D.; Saunders, Sari C. ; Shaw, Dave; Shaw, Roger; Spies, Tom A.; Suchanek, Thomas H.; Updegraff, Karen; Ustin, Susan L.; Waite, Thomas

(ii) **Graduate & postdoctoral advisors:** Jerry Franklin (Univ of Washington), Robert Naiman (Univ of Washington), Tom Spies (USDA Forest Service, Corvallis)

(iii) **Thesis Advisor for :** Brosofske, Kim D. (PhD); Euskirchen, Eugenie (PhD); Gerdis, Dorris (PhD, INC); Gerdis, Lynn (MS); Jateith, Malanding (PhD); Ma, Siyan (PhD); Marshal, Treneice (MS); Rudnicki, Mark (MS); Saunders, Sari C. (PhD); Silbernagel, Janet. (PhD); Song, Bo (PhD); Watkins, Radley (MS); Xu, Ming (PhD, INC); Waengsothorn, Surachit S. (MS)

1. **Postdoctoral associates:** Xinli Wang, Daolan Zheng, Sari Saunders, Kim Brosofske

JAKE FREDERICK WELTZIN

Department of Ecology & Evolutionary Biology
University of Tennessee
Knoxville, TN 37996-1610
(423) 974-5218
jweltzin@utk.edu

Professional Preparation

University of Arizona; Renewable Natural Resource Studies, Global Change; PhD., 1998
Texas A & M University; Range Science; M.S., 1990
Colorado State University; Range and Forest Management; B.S., *cum laude*, 1987

Appointments

Assistant Professor. Department of Ecology and Evolutionary Biology, University of Tennessee.
1999-Present.
Post-doctoral Research Associate. Department of Biological Sciences, University of Notre Dame.
1998-1999.
Graduate Research Assistant. School of Renewable Natural Resources, University of Arizona.
1993-1998.
Project Manager/Plant Ecologist. Raedeke Associates, Inc., Seattle, Washington. 1990-1993.
Graduate Research Assistant. Department of Range Science, Texas A & M University. 1988-
1990.
NSF-REU supplement to Southern Turkana Ecosystem Project, Natural Resources Ecology
Laboratory, Colorado State University. 1987.

5 Publications Most Closely Related to Project (of 16 since 1990)

Weltzin, J.F., C. Harth, S.D. Bridgham, J. Pastor, and M. Vonderharr. *Submitted*. Structure and production of bog bryophytes: response to warming and water-table manipulations. *Oikos*.

Hanson, P.J. and J.F. Weltzin. *Accepted, in revision*. Drought and climate change as vectors of disturbance in temperate forest communities. *Science of the Total Environment*.

Weltzin, J.F., J. Pastor, C. Harth, S.D. Bridgham, K. Updegraff, and C.T. Chapin. *In press*. Response of bog and fen plant communities to warming and water-table manipulations. *Ecology*.

Williams, D.G., G.R. McPherson, and J.F. Weltzin. 1999. Stress in wildland plants: implications for ecosystem structure and function. Pages 907-929 *in* M. Pessaraki, ed. *Handbook of plant and crop stress*, second edition. Marcel Dekker, New York, NY.

Weltzin, J.F. and G.R. McPherson. 1999. Facilitation of conspecific seedling recruitment and shifts in temperate savanna ecotones. *Ecological Monographs* 69:513-534.

Synergistic Activities

Weltzin, J.F. and G.R. McPherson (editors). *In preparation*. *Precipitation and Terrestrial Ecosystems*. A 15-chapter monograph contracted through the University of Arizona Press, designed to explore various approaches used to predict responses of ecosystems to changes in precipitation regimes, to bring together disparate components of this particular aspect of global change research, and to highlight the emerging research interest in the importance of precipitation regimes in structuring natural ecosystems.

Modeling net ecosystem carbon exchange (NEE_C); with S.D. Bridgham and J. Pastor. We are

developing an empirical model to predict net ecosystem exchange of carbon; the model is unique in that it 1) is based on data from experimental bog and fen mesocosms, and 2) incorporates intra-diel (sunrise to sunset), inter-seasonal (early to late growing season, and winter), and inter-annual variation in biotic and abiotic processes to predict NEE_C .

Developing research and teaching linkages between University of Tennessee Department of Ecology and Evolutionary Biology and Oak Ridge National Laboratory Environmental Sciences Division. Despite the proximity of these two world-class departments, there are relatively few student or staff research and teaching links within the fields of plant ecology and ecosystem science; my goal is to improve professional, graduate, and undergraduate interactions between these two units.

The democratic classroom. Graduate students work as a group to conceptualize and conduct their own experimental research, with the goal of submitting a quality manuscript to an ecological journal by semester-end.

Collaborators

Jeff Amthor, Oak Ridge National Laboratory; Scott Bridgham, University of Notre Dame; Jim Brown, University of New Mexico; Carmen T. Chapin, Cornell University; Jiquan Chen, Harvard; Mike Coughenour, Natural Resources Ecology Laboratory; Steve Frolking, University of New Hampshire; Paul Hanson, Oak Ridge National Laboratory; Cal Harth, Natural Resources Research Institute; Rod Heitschmidt, USDA - Agricultural Research Service; Tim Kittel, National Center for Atmospheric Research; Alan Knapp, Kansas State University; Joe McAuliffe, Desert Botanical Garden; Guy McPherson, University of Arizona; Ron Neilson, USDA - Forest Service, Pacific Northwest Research Station; Keith Owens, Texas A & M University; John Pastor, University of Minnesota, Duluth; James Reynolds, Duke University; Nigel Roulet, McGill University; Keirith Snyder, University of Arizona; Tony Svejcar, USDA - Agricultural Research Service; Karen Updegraff, University of Minnesota; Ross Virginia, Dartmouth College; David Williams, University of Arizona

Advisors

Postdoctoral advisors: Scott Bridgham, University of Notre Dame; John Pastor, University of Minnesota, Duluth
Ph.D. Advisor: Guy McPherson, University of Arizona

Advisees (Total of 3 current graduate students)

Patrice Cole, Dane Kuppinger, Benjamin Tsai