

CURRICULUM VITAE

RICHARD A. GILL

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EDUCATION

Postdoctoral Training (Botany/Biology), Duke University

Ph.D., Colorado State University (Ecology) 1998.

B.S., Brigham Young University (Conservation Biology: Pre-Professional) 1993.

EXPERIENCE

Washington State University, August 2006-2007, Associate Director for Undergraduate Studies, School of Earth and Environmental Sciences

Washington State University, 2001-Current, Assistant Professor of Environmental Science

Duke University, 1999-2001, Post-doctoral Research Associate, Biology/Botany Department

Colorado State University, 1994-1998, Teaching and Research Assistant, College of Natural Resources

Colorado State University, 1994-1995, Research Associate, Natural Resource Ecology Laboratory

PROFESSIONAL RECOGNITION

2002, Young Faculty Achievement Award, College of Sciences, Washington State University

1998, Elected Member, *Sigma Xi*

1998, Best Oral Research Presentation, Front Range Student Ecology Symposium, Colorado State University, *How do plant functional type changes alter nutrient cycling in semiarid ecosystems?*

1997, Best Oral Presentation, Student Ecology Symposium, Colorado State University, *Influence of Soil Depth on Decomposition Rates*

PUBLICATIONS AND TECHNICAL REPORTS

In Preparation

Gill, RA. Transient impacts of increases in temperature and N-deposition in the subalpine of the Wasatch Plateau, Utah.

Gill, R.A., J.A. Tullis, G. Raber, G. Carbone. Predicted changes in temperate grassland productivity with global climate change. (Analyses Complete)

Chambers, C, R.J. Danehy, R.A. Gill, and J.D. Marshall. Fertilizer N uptake and turnover in a riparian system and the presence of an ecosystem N cycle threshold. (Oecologia)

Gill, RA Influence of grazing and climate variability on successional processes in the subalpine zone of the Wasatch Plateau.

Balogh, Zs., Keller, C. K., Gill, R. A., Bormann, B. T. and Li, C. Y. Biofilm supported increase of chemical weathering and decrease of chemical denudation in pine growth experiments *In preparation for submission to Soil Biology and Biochemistry*

In Review or Published

1. Kelly, Brendon P., and R.A. Gill. CHANGES IN SOIL HYDRAULIC PROPERTIES DUE TO GRAZING MAY CHANGE HIGH PRODUCTIVITY SITES TO LOW PRODUCTIVITY SITES IN SUBALPINE RANGELANDS. (In Review, Plant and Soil)
2. Gill RA. 2007. Influence of 90 years of protection from grazing on plant and soil processes in the subalpine of the Wasatch Plateau, USA. *Rangeland Ecology and Management* 60:88-98.
3. K. Hopfensperger, J. Wu, R.A. Gill. 2006. Plant species richness and erosion potential of a watershed in the Salmon River Subbasin, Idaho. *Western North American Naturalist*.66 (3):354-364.
4. Gill, R.A., H. W. Polley, H.B. Johnson, R.B. Jackson. 2006. Progressive nitrogen limitation limits carbon sequestration in a grassland exposed to past and future atmospheric CO₂. *Ecology* 87:41-52.(Special Feature)
5. Gill, R.A., J.A. Boie, J.G. Bishop, L. Larsen, J.L. Apple, R.D. Evans. 2006. Linking community and ecosystem development on Mount Saint Helens. *Oecologia* 148:312-324.
6. White, Ethan P., Peter B. Adler, William K. Lauenroth, Richard A. Gill, David Greenberg, Dawn M. Kaufmann, Andrew Rossweiler, James A. Rusak, Melinda A. Smith, John Steinbeck, Robert B. Waide, Jin Yao. 2006. A comparison of species-time relationships across ecosystems and taxa. *Oikos* 112:185-195.
7. I.C. Burke, 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, A.R. Mosier, and C.M. Yonker. 2005. Soil organic matter and nutrient dynamics of the shortgrass steppe. *In Ecology of the Shortgrass Steppe*.
8. Lauenroth, William K. and Richard A. Gill. 2003. Turnover of root systems. In *Root Ecology*, H. de Kroon and E. J.W. Visser (eds). Ecological Studies 168 Springer, Berlin. pp. 61-90.
9. Epstein, H.E., R.A. Gill, J.M. Paruelo, W.K. Lauenroth, G.J. Jia, I.C. Burke. 2002. Effects of climate change on plant functional type composition in temperate zone grasslands and shrublands. *Journal of Biogeography* 29(7):875-888.

10. Gill, Richard A., H. Wayne Polley, Hyrum B. Johnson, Laurel J. Anderson, Hafiz Maherali, and Robert B. Jackson. 2002. Nonlinear grassland response to past and future atmospheric CO₂. *Nature* 417:279-282.
11. Gill, Richard A., Ingrid C. Burke, William K. Lauenroth, Daniel G. Milchunas. 2002. Root longevity and turnover in the shortgrass steppe: Influence of diameter and depth. *Plant Ecology* 159 (2): 241-251
12. Gill, Richard A. and Ingrid C. Burke. 2002. Influence of soil depth on the decomposition of *Bouteloua gracilis* roots in the shortgrass steppe. *Plant and Soil* 241:233-242.
13. Gill, R.A., R.H. Kelly, W.J. Parton, K.A. Day, R.B. Jackson, J.A. Morgan, J.M.O. Scurlock, L.L. Tieszen, D.S. Ojima, J. van de Castle, X.S. Zhang. 2001. Enhancing the worldwide grassland NPP database using simple environmental variables to estimate belowground productivity. *Global Ecology and Biogeography* 11:79-86.
14. Gill, Richard A. and Robert B. Jackson. 2000. Global patterns of root turnover for terrestrial ecosystems. *New Phytologist* 147:13-31.
15. Gill, Richard A. and Ingrid C. Burke. 1999. Ecosystem consequences of plant life form changes at three sites in the semiarid United States. *Oecologia* 121:551-563.
16. Gill, Richard A., and Ingrid C. Burke. 1999. Using an environmental science course to promote scientific literacy. *Journal of College Science Teaching* 29:105-110.
17. Gill, Richard A. and Robert B. Jackson. 2000. Global patterns of root turnover for terrestrial ecosystems. In *Root dynamics and global change: An ecosystem perspective*. Norby, R.J., Fitter, A.H., and Jackson, R.B. (eds.) pp. 13-31. Cambridge University Press, Cambridge, UK.
18. Gill, Richard A., Ingrid C. Burke, Daniel G. Milchunas, and William K. Lauenroth. 1999. Relationship between root biomass and soil organic matter pools in the shortgrass steppe of eastern Colorado. *Ecosystems* 2: 226-236.
19. 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. Murphy, R.A. Gill. 1998. Plant-Soil interactions in grasslands. *Biogeochemistry* 42:121-43.

GRANTS AND CONTRACTS

- Environmental Protection Agency/Department of Energy. The interaction of carbon sequestration and water availability along a subambient to elevated CO₂ gradient PI Robert Jackson; Co-PI R. Gill \$500,000 including subcontract to WSU (\$149,746)
- National Science Foundation. Acquisition of stable isotope mass spectrometers for global change training and research. R.D. Evans is lead PI. G. Edwards, R. Gill, C. Kent Keller, and G. Mount are co-PI's. \$828,549 total (\$579,984 NSF; \$248,565 Washington State University).
- Washington State University New Faculty Seed Grant. *Linking space and time to understand the ecology of subalpine meadow ecosystems* \$15,700 (5/15/2004-8/15/2005).

Washington State University Undergraduate Teaching and Learning Improvement Grant. Redesigning the Introductory Environmental Science Curriculum to Foster Active Learning and Critical Thinking. \$23,000.

Washington State University, College of Sciences Honors Course Development Minigrant; \$4,000 (Society and the Global Environment)

National Science Foundation. *Chemical hydrology of vascular plant growth: role of root-fungus associations* \$249,722 (Funded 7/01/2003; Collaborator with PI: Keller, Bormann, Dickinson, Li)

National Science Foundation. *Using long-term chart quadrats to evaluate plant demography in the subalpine: rescuing the Great Basin Experimental Range data sets.* \$68,632. (Funded 3/1/2003).

U.S. Department of Agriculture–National Research Initiative (USDA-NRI) Competitive Grants Program. *Carbon dioxide induced changes in belowground C and N cycling in grasslands.* Postdoctoral Grant: Duke University (transfer to Washington State University). (2000-2002). \$90,000

Washington State University New Faculty Seed Grant. Top down or underground: Controls over succession at Mount St. Helens, Washington. (2002-2003) \$7,600.

COMMITTEE SERVICE AT WSU

- Hydroecology Search Committee, School of Earth and Environmental Sciences, Chair 2006-2007
- Center for Environmental Research, Outreach, and Education Steering Committee Member 2006-
- School of Earth and Environmental Science Steering Committee: 2005-
- College of Sciences Organizational Implementation Committee: 2004-Current
- Honors Council Presidential Committee. 2004-Current
- School of Earth and Environmental Science ESP/Biogeochemistry Search Committee 2002-2003
- Program in Environmental Science and Regional Planning Aquatic Ecology Search Committee 2002-2003
- School of Biological Sciences Ecosystem Ecologist Search Committee 2002-2003
- College of Science Computer/Network Security Committee, 2001-Current.

INSTRUCTIONAL RESPONSIBILITIES

Spring	2006	UH 410 The Science and Culture of Place (Domain of the Sciences)
Spring	2005-2006	ESRP/Bio 592 Ecosystem and Global Change Biology (3 Credits)
Fall/Spring	2004-2006	ES/RP 101 Humans and the Natural Environment (4 Credits)
Fall/Spring	2001-2004	ES/RP 150 Natural Science and the Environment (3 credits)
Fall	2003	ES/RP GEOL 565 Biogeochemistry and Global Change (4 credits)
Spring credits)	2004	UH 300 Honors Seminar: Humans and the Global environment (2

PROFESSIONAL SERVICE

Keynote Address, North Central High School Science Symposium, Of Roots and Legacies, May 7, 2007

Nature Conservancy Advisory Board, Sagebrush steppe ecosystems (2006-Current).

Co-Chair, Education Committee, Center for Environmental Research, Outreach, and Education, Washington State University

Associate Editor, Western North American Naturalist (2006-Current)

USDA NRICGP Managed Ecosystems Panel Member (2006)

WSU Washington D.C. Outreach, Environmental Science and Engineering trip with Vice Provost for Research

WSU Critical Thinking Project, Participant

Graduate Faculty, Program in Environmental Science and Regional Planning

Ad-Hoc Reviewer: National Science Foundation (Ecosystems Panel); USDA-NRI Managed Ecosystems Panel

President: Colloquium in the Life Sciences, Colorado State University, 1997-1998.

Howard Hughes Fellowship Mentor: Duke University 2000.

Graduate Student Representative: Long-Term Ecological Research — Shortgrass Steppe Site.

Invited Contributor: The New Phytologist & NIGEC conference on belowground dynamics and global change; Oak Ridge, Tennessee 1999

Graduate Student Representative: Long-Term Ecological Research — Shortgrass Steppe Site.

Committee Member: Colloquium in the Life Sciences, 1995-1997.

GRADUATE STUDENT COMMITTEES AS CHAIR

J. Boie, M.S. "Potential control of nutrient availability over photosynthesis, biomass, and plant defense at Mount Saint Helens, Washington" May 2003.

Lena Hakim, M.S., Indices of Sustainability. August 2005.

B. Kelly. MS. "CHANGES IN SOIL HYDRAULIC PROPERTIES DUE TO GRAZING MAY CHANGE HIGH PRODUCTIVITY SITES TO LOW PRODUCTIVITY SITES IN SUBALPINE RANGELANDS." May 2006

S. Brown MS Candidate. In Progress

L. Bissey. M.S. Candidate. In Progress

K. Hamblin-Hart Ph.D. Candidate In Progress

H. Palmer Andrus M.S. Candidate In Progress

THESIS COMMITTEE SERVICE

Gretchen Beth Snyder, M.S. Candidate, ESRP, In Progress

Laura Robison, M.S. Candidate, ESRP, In Progress

Kristine Eckards, M.S. Candidate, Teaching and Learning, In Progress

Michael Cashman, M.S. Candidate, ESRP, In Progress

Jeremy Avise, Ph.D. Candidate, Civil and Environmental Engineering, In Progress

Shannon Wills, M.S. Candidate, WSU-Vancouver, In Progress

Akihiro Koyama, Ph.D. Candidate, University of Idaho, In Progress

Molly Muir Brooke, M.S., School of Biological Sciences, December 2006

David Uberange, M.S. Candidate

Joel Pankey, Ph.D. Candidate, School of Biological Sciences, In Progress

B. Scharenbrock, M.S. Candidate, University of Idaho, December 2003

K. Canto, M.S. Candidate, April 2003

K. Hopfensperger, M.S. Candidate, February 2003

J. Sandquist, M.S., ESRP, April 2002

M. Monahan, M.S. ESRP, August 2002

HONORS THESES SUPERVISED

Nicole Aragone, Spring 2004

UNDERGRADUATE THESES SUPERVISED

Blake Stokes, NATRS, Fall 2003

CONFERENCE PARTICIPATION AND SEMINAR PRESENTATIONS

1. The Edge of the Sky: Community and Ecosystem Responses to Disturbance on the Wasatch Plateau. Environmental Science Departmental Seminar. March 30, 2006
2. Grazing Impacts on Soil and Water Dynamics in Subalpine Rangelands. American Geophysical Union Fall Meeting, 2005, San Francisco, CA
3. Soil Responses to Global Change. Department of Soil Sciences. University of Idaho. March 2005
4. Measuring root turnover and belowground net primary production. Max Plank Institute; Jena Germany. May 2004.
5. The Legacy of Grazing Mountain Meadows. Soil Science Society of America, Seattle, WA October 2004, Invited Symposium Talk
6. Bissey, Lauren, J.L. Smith, R.A. Gill, R. J. Watts. Fate of Organic Matter During ISCO with Catalyzed Hydrogen Peroxide Propagations (CHP). The Third International Conference on Oxidation and Reduction Technologies for In-Situ Treatment of Soil and Groundwater, San Diego, CA.
7. Gill RA Linking communities and ecosystems to understand the ecological consequences of disturbance. Environmental Science and Regional Planning Seminar. Washington State University.
8. Gill RA. Asymmetries and Legacies: Ecosystem responses to past and future atmospheric CO₂. Civil and Environmental Engineering Seminar. Washington State University.
9. Gill RA. Soils and Global Change: Interactions between carbon, nitrogen, and water. Soils Department Seminar, Fall 2003.
10. Gill R.A. Impacts of 130 years of grazing on ecosystem carbon dynamics in the subalpine zone of the Wasatch Plateau. American Geophysical Union, San Francisco, California, December 2003
11. Gill, R.A., H. W. Polley, H.B. Johnson, R.B. Jackson. Short and medium-term C and N dynamics in a grassland exposed to past and future atmospheric CO₂. Ecological Society of America, Savannah, Georgia, August 2003.

12. Gill RA Belowground responses to global change. Geology Seminar. Washington State University
13. Gill, R.A. 2003. Soil responses to and recovery from disturbance. Washington State University ESRP Seminar, February 2003.
14. Gill, R.A. 2002. The ecosystem's hidden half: belowground consequences of disturbance. Brigham Young University Department of Integrated Biology. October 2002.
15. Jackson, R.B., R.A. Gill, H.W. Polley, H.B. Johnson, H. Maherali, L.J. Anderson. 2002. Grassland responses to past and future atmospheric CO₂. Symposium Talk. Ecological Society of America, Tucson, Arizona, August 2002.
16. Gill, Richard A., Laurel J. Anderson, H. Wayne Polley, Hyrum B. Johnson, Robert B. Jackson. 2000. Soil Responses to Atmospheric CO₂: Storage and Fluxes of Carbon and Nitrogen in a Grassland Exposed to a Gradient in CO₂ Concentration. American Geophysical Union Meeting, San Francisco, California. December 2000. Special Session on Soil Responses to CO₂.
17. Gill, R.A., J. Loreti, and R.B. Jackson. 2000. Global patterns of root turnover evaluated for vegetation, climate, and root respiration. Ecological Society of America Meetings, Snowbird, Utah. August 2000.
18. Johnson, Hyrum B. and Gill, Richard A. 2000. The Role of Shrub Steppe Vegetation in the Global Carbon/Nitrogen Balance. Symposium: Sagebrush Steppe Communities: Origin, Ecology, Impacts and Resources. Society for Range Management, Boise, Idaho. February 2000.
19. Gill, Richard A., Ingrid C. Burke, Daniel G. Milchunas, and William K. Lauenroth. 1999. *Bouteloua gracilis* root dynamics through a soil profile. Ecological Society of America Meetings, Spokane, Washington. August 1999.
20. Gill, R. A. and I. C. Burke. 1997. Influence of shrub invasion on the vertical distribution of soil organic matter in thorn savanna and desert grassland. Poster Presentation. Ecological Society of America Meetings, Albuquerque, NM, August 1997.
21. Gill, R. A., I. C. Burke, D. G. Milchunas, and W. K. Lauenroth. 1996. ¹⁴C inputs to soil organic matter fractions 10 years after labeling. Oral Presentation. Soil Science Society of America Meetings, Indianapolis, Indiana, November 1996.
22. Burke, I.C., H.E. Epstein, R.H. Kelly, M.A. Vinton, P.B. Hook, M.D. Robles, M.R. Aguiar, K. Murphy, R.A. Gill. Plant-Soil interactions in grasslands. Oral Presentation. Soil Science Society of America Meetings, Indianapolis, IN, Nov 1996.
23. Gill, Richard A., Ingrid C. Burke, Daniel G. Milchunas, and William K. Lauenroth. 1996. Assimilated ¹⁴C transfer to empirical soil organic matter pools 10 years after labeling in a shortgrass steppe ecosystem. Oral Presentation. Ecological Society of America Meetings, Providence, Rhode Island, July 1996.