Barbara Fricks, PhD candidate bfricks@colostate.edu
Natural Resources Ecology Laboratory, 1499 Campus Delivery, Fort Collins, CO 80523
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RESEARCH INTERESTS

Science education; microbial decomposition of cellulose in natural systems; soil ecology; biofuels; microbial metagenomics & metaproteomics; microbial enzymatic adaptation; and communicating scientific research to the public.

EDUCATION

2009-Present Colorado State University, Graduate Degree Program in Ecology
Cumulative GPA (46 credits): 3.645

M.S. 2007. The Pennsylvania State University, Soil Science
Thesis: Soil Nitrate Fate in Conventional and Organic Agroecosystems
Cumulative GPA: 3.85
GRE: 1300 (October 2004)

B.A. 2003. The University of Texas at Austin, Botany and Anthropology
Minor: Spanish
Cumulative GPA: 3.2

FORMAL (CLASSROOM) TEACHING EXPERIENCE

2010 LIFE 320 Ecology (Teaching Assistant-grader-including online labs, held office hours and review sessions)
2007 SOILS 071 Environmental Sustainability (Teaching Assistant-designed and led in class lab, grader)
2006 SOILS 101 Introduction to Soil Science (Lab Section Instructor-led weekly labs and graded reports)

OTHER TECACHING EXPERIENCE

2013-2013 Lectured on soil enzymes to high school senior class, Accelerated Schools, Denver CO
2012-2012 Guest lecturer (2 lectures and 1 lab), SOCR 400, Fall 2012, Colorado State University
2012-2012 Summer Soils Institute, Colorado State University
2010-2010 Colorado State University: New GTA training Seminar
2008-2009 Docent, Dig It! The Secrets of Soil, Smithsonian Museum of Natural History, Washington DC
Training (~15 hrs) included seminars on teaching theory/methods and science communication.
2007-2008 Science Policy Intern, Soil Science Society of America, Washington, DC.
Communicated soil and crop science related topics to congressional staffers and federal agencies.

LABORATORY SKILLS

Molecular: Aseptic techniques, DNA extraction, soil enzyme assays, protein extraction, gel preparation
General: microscopy, slide preparation, sample preservation (plant) – microtoming, media preparation
Chemical: Soil pH and inorganic N, Infrared Gas Analyzer, Fourier Transformed mid-IR

FELLOWSHIP

2010-2012 Chevron Graduate Fellow, Colorado Center for Biorefining and Biofuels
2009-2011 NSF IGERT Fellow, Multidisciplinary Approaches to Sustainable Bioenergy Program, Colorado State Univ.
2006 Summer Fellow, Center for Environmental Chemistry and Geochemistry, Pennsylvania State Univ.

SCHOLARSHIPS

2010 Francis Clark Soil Biology Scholarship, Natural Resources Ecology Lab, Colorado State University

RESEARCH EXPERIENCE

2010-present Research Assistant, Graduate Degree Program in Ecology, Colorado State Univ.
2009-2010 Research Fellow, Graduate Degree Program in Horticulture, Colorado State Univ.
2005-2007 Research Assistant, Graduate Degree Program in Soil Science, Pennsylvania State Univ.
2002 Research Assistant, Department of Integrative Biology, Univ. of Texas

PROFESSIONAL SERVICE

Student Representative on Technical committee on soil systems and critical zone processes, American Geophysical Union, Winter 2011 – Present.
Graduate Student Representative, Natural Resource Ecology Lab, Fall 2011-Fall 2012.
Front Range Student Ecology Symposium, Committee Chair-Outreach, Fall 2011 to Spring 2012.
Center for Environmental Chemistry and Geochemistry Student Symposium, Organizing Member, Fall 2006-Spring 2007

ADVISOR

PhD.: Drs. Matt Wallenstein and Ken Reardon
M.S.: Dr. Jason P. Kaye

PEER-REVIEW MANUSCRIPT

Fricks, B., J.P. Kaye, and R. Seidel. 2009. Abiotic NO_3^- Retention in Forest and Agroecosystems. *Soil Science*

Society of America, **73**: 1137-1141.

GRANTS

6/2008 Co-author USDA NRI Conference Grant: 21st Century Frontiers in Soil Science: Solutions to Critical Problems, with Dr. Gary Peterson and Colorado State University as sole PI.

PRESENTATIONS AT CONFERENCES

Fricks, B., Matthew W. Wallenstein, Francisco Calderon, Roger Tree, and Wei Gao. 2012. Effects of UVB on Surface Chemistry of Switchgrass. Ecological Society of America, Austin, TX.

Fricks, B., Matthew W. Wallenstein, and Kenneth F. Reardon. 2011. Characterizing Cellulolytic Enzymes from Soil Using Proteomics: Do differences in enzyme diversity drive home-field advantage for litter decomposition? Argonne Soil Metagenomics Workshop, Bloomingdale, IL.

Fricks, B., J.P. Kaye, and R. Seidel. 2007. Abiotic reactions play a role in nitrate retention in three agroecosystems. Ecological Society of America, San Jose, CA.

Fricks, B., J.P. Kaye, R. Seidel, P. Hepperly. 2007. Historic and present nitrate loss in a long term farming systems trial. Soil Science Society of America, New Orleans, LA.

MEMBERSHIP

American Geophysical Union, Ecological Society of America; Gamma Sigma Delta (Honor Society of Agriculture)