

Christopher M. Gough
Virginia Commonwealth University
Department of Biology
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1000 West Cary St.
Richmond, VA 23284-2012

ACADEMIC AND PROFESSIONAL BACKGROUND

Academic Interests: forest ecology, plant physiological ecology, plant-soil interactions, global change biology, carbon and nitrogen cycling, biogeochemistry, humans and ecosystem function

Education

Ph.D. Forestry, Virginia Tech, 2003

Dissertation: *Physiology and quantification of carbon dynamics in intensively managed loblolly pine stands.*

M.S. Forestry, Virginia Tech, 2000

Thesis: *Environmental influences on gas exchange in fertilized and non-fertilized stands of loblolly pine.*

B.S. Biology major, Music minor, James Madison University, 1997

Honors Thesis: *The nucleotide sequence of an Arabidopsis alpha-glucosidase.*

Professional Experience

Lecturer; Ohio State University; Center for Life Sciences Education; Winter Quarter 2008
Research Faculty/REU advisor; University of Michigan Biological Station; Summers 2003-present (ongoing)

Post-doctoral Researcher; Ohio State University; Department of Evolution, Ecology, and Organismal Biology; 2003 – 2008

Graduate Research Assistant; Virginia Tech; Forestry Department; 1998 – 2003

Field assistant; USDA Forest Service Southeastern Tree Experimental Station; 1998

Laboratory Technician; James Madison University; Biology Department; 1997 – 1998

GRANTS (Total funding awarded: \$1,355,625)

Research Grants

COLLABORATIVE RESEARCH: Disturbance, succession and forest carbon dynamics: an ecosystem-scale experiment at the University of Michigan Biological Station (renewal). \$424,899. Department of Energy, National Institute for Climate Change Research. 2009-2011. Co-PI with Curtis P.S., Vogel C.S., Bohrer G.

COLLABORATIVE RESEARCH: Disturbance, succession and forest carbon dynamics: an ecosystem-scale experiment at the University of Michigan Biological Station. \$649,729. Department of Energy, National Institute for Climate Change Research. 2006-2009. Co-PI with Curtis P.S., Schmid H.P., Vogel C.S.

Mass and energy exchange in a northern mixed hardwood ecosystem. \$280,997. 2005-2006. Department of Energy, National Institute for Global Environmental Change. Co-PI with Curtis P.S., Schmid H.P., Su H.B., and Vogel C.S.

SUBMITTED to NSF Dynamics of Coupled Human and Natural Ecosystems November 18, 2008. COLLABORATIVE RESEARCH: Carbon pools and fluxes in lawns along an urban to rural gradient: interactions of biophysical and sociopsychological controls. VCU PI with Seiler J.R., Wynne R., Thomas V., Munsell J., and Wiseman P.E. of Virginia Tech.

SUBMITTED to NSF Ecosystem Studies January 9, 2009: COLLABORATIVE RESEARCH: Alternatives to Odum's ecosystem development curve: Do nutrient and carbon subsidies to wetlands modulate temporal changes in net ecosystem production? VCU lead PI with Bukaveckas P., Frankling R. (VCU), Bond-Lamberty (Pacific NW Laboratory), Neubauer (Univ. South Carolina). \$540,422 requested by VCU of \$954,817 total.

Service Grants

VCU Council for Community Engagement March 13, 2009: Our Park, Our Environment. Co-PI with Anne Wright, Joy Ware, Robert Reilly, James Vonesh, Edward Crawford, Holly Houltz, and Andrew Garey. 19,000 awarded.

PUBLICATIONS

Journal Publications

16. **Gough C.M.**, Flower C.¹, Vogel C.S., Dragoni, D., Curtis P.S. 2009. Whole-ecosystem labile carbon production in a north temperate deciduous forest, *Agricultural and Forest Meteorology*, 149: 1531-1540.
¹*M.S. recipient and advisee*
15. Nave L., Vogel C.S., **Gough C.M.**, Curtis P.S. The nitrogen budget of a northern hardwood forest: Sources and net primary productivity requirements, *Canadian J. Forest Research*, in press.
14. **Gough C.M.**, Vogel C.S., Schmid H.P., and Curtis P.S. 2008. Controls on annual forest carbon storage: Lessons from the past and predictions for the future, *BioScience*, 58: 609-622.
13. **Gough C.M.**, Vogel C.S., Schmid H.P., Su H.-B., and Curtis P.S. 2008. Multi-year convergence of biometric and meteorological estimates of forest carbon storage. *Agricultural and Forest Meteorology*. 148: 158-170. (Publication "recommended" by *Faculty of 1000*: <http://www.f1000biology.com/article/id/1103603/evaluation/sections>)
12. Desai A.R., Normeets A., Bolstad P.V., Chen J., Cook B.D., Davis K.J., Euskirchen E., **Gough C.**, Martin J., Ricciuto D.M., Schmid H.P., Tang J., Su H., and Wang W. 2008. Influence of vegetation type, stand age and climate on carbon dioxide fluxes across the

Upper Midwest, USA: Implications for regional scaling of carbon flux. *Agricultural and Forest Meteorology*. 148: 288-308.

11. **Gough C.M.**, Vogel C.S., Harrold K.¹, George K.¹, and Curtis P.S. 2007. The legacy of harvest and fire on ecosystem carbon storage in a north temperate forest, *Global Change Biology* 13: 1935-1949.
¹*undergraduate co-author, NSF Research Experience for Undergraduates advisee*
10. **Gough C.M.**, Vogel C.S., Kazanski C.¹, Nagel L.¹, Flower, C.E., and Curtis P.S. 2007. Coarse woody debris and the carbon balance of a north temperate forest. *Forest Ecology and Management* 244: 60-67.
¹*undergraduate co-author, NSF Research Experience for Undergraduates advisee*
9. Nave LE, and **Gough CM**. 2006. Quantifying ecological change using stable isotopes: digging deep into the past to predict the future. *New Phytologist* 171: 3-6.
8. Sampson D.A., Waring R.H., Maier C.A., **Gough C.M.**, Lacey M.J., and Johnson K.H. 2006. Fertilization effects on forest carbon storage, exchange, and net primary production: a new hybrid process model for stand management. *Forest Ecology and Management* 221: 91-109.
7. Curtis P.S., Vogel C.S, **Gough C.M.**, Schmid H.P., Su H.B., and Bovard B.D. 2005. Respiratory Carbon Losses and the Carbon-Use Efficiency of a Northern Hardwood Forest, 1999 – 2003. *New Phytologist* 167: 437-456.
6. **Gough C.M.**, Seiler J.R., Wiseman P.E, and Maier C.M. 2005. Soil CO₂ efflux in loblolly pine (*Pinus taeda* L.) plantations on the Virginia Piedmont and South Carolina Coastal Plain over a rotation-length chronosequence. *Biogeochemistry* 73:127-147.
5. **Gough C.M.**, Seiler J.R., and Maier, C.A. 2004. Short-term effects of fertilization on loblolly pine (*Pinus taeda* L.) physiology. *Plant, Cell and Environment* 27: 876-886.
4. **Gough C.M.**, and Seiler J.R. 2004. An intensive examination of belowground carbon dynamics in loblolly pine (*Pinus taeda* L.) immediately following diammonium phosphate fertilization. *Tree Physiology* 24: 845-851.
3. **Gough C.M.**, and Seiler J.R. 2004. The influence of environmental, soil carbon, root, and stand characteristics on soil CO₂ efflux in loblolly pine (*Pinus taeda* L.) plantations located on the South Carolina coastal plain. *Forest Ecology and Management* 191: 353-363.
2. **Gough C.M.**, Seiler J.R., Johnsen K.H., and Sampson D.A. 2004. Seasonal photosynthesis in fertilized and non-fertilized loblolly pine. *Forest Science* 50: 1-9.
1. Monroe J.D., **Gough C.M.**, Chandler L.E., Loch, J.E. Ferrante J.E., and Wright P.W. 1999. Structure, properties and tissue localization of apoplasmic alpha-glucosidase in crucifers. *Plant Physiology* 119: 385-397.

Journal Publications in Preparation

Gough C.M., Fritz E. Management and social indicators of soil carbon storage in a suburban lawn, in preparation for Environmental Management

Flower C.¹, **Gough C.M.**, Vogel C.S., Dragoni, D., Curtis P.S. Biotic and abiotic controls on nonstructural carbohydrate production and reallocation, in preparation for Tree Physiology.

Gough C.M., Hardiman B., Vogel C.S., Nave L., Curtis P.S. Forest canopy diversity and structure constrain the trajectory of net primary production during a successional transition, in preparation for Ecology.

Other Publications

Gough C., Seiler J., and Wiseman E. 2004. Predicting soil CO₂ efflux in the loblolly pine ecosystem across the region. Proceedings of the 12th Biennial Southern Silviculture Conference.

Maier C.A., Johnsen K., Seiler J., **Gough C.**, and Selig M. 2004. Carbon Budgets of Managed Loblolly Pine Forests: Case Study for Greenhouse Gas Accounting Rules and Guidelines for Forestry. Section 1605(b) of the Energy Policy Act of 1992 (EPACT), 42 U.S.C. 13385(b).

Maier C.A., **Gough, C.**, Seiler, J., Sampson D.A., Johnsen, K., and Dougherty, P. 2003. Effects of forest management on soil CO₂ evolution in loblolly pine plantations. Project report meeting book of the NCASI Southern Regional Meeting. Asheville, NC.

Gough C., Seiler J., Johnsen K. and Sampson D.A. 2002. GPP in loblolly pine: a monthly comparison of empirical and process models. Proceedings of the 11th Biennial Southern Silviculture Conference.

Monroe J.D., **Gough. C.**, Ferrante J, Chandler L., Loch C., and Stephen A. 1997. Characterization of the alpha-glucosidase gene family from *Arabidopsis thaliana*: gene structure and properties of enzymes. Plant Physiology 114(s):884. ASPP National Meeting, Vancouver BC.

Monroe J.D., Hall B.D., **Gough C.M.**, and Stephen A.L. 1997. Nucleotide sequence of an alpha-glucosidase gene (Accession No AFO14806) from *Arabidopsis thaliana*. Plant Physiology 115: 863.

PRESENTATIONS

Invited Oral Presentations

Gough C.M. Forest carbon cycling during a century of change: Lessons from the north woods. Joint Global Change Research Institute, University of Maryland, College Park, MD, May 4, 2009.

- Gough C.M.** Controls on annual forest carbon storage: lessons from the past and predictions for the future. Department of Natural Resources, North Carolina State University, Raleigh, NC, November 24, 2008.
- Gough C.M.** The human footprint in a forested ecosystem: Carbon cycling during a century of change. Department of Biology, Homecoming Seminar, James Madison University, Harrisonburg, VA, October 31, 2008.
- Gough C.** Carbon Storage in the North Woods of the Midwest: A Century of Change. Department of Biology, Virginia Commonwealth University, Richmond, VA, January 28, 2008.
- Gough C.** Carbon Storage in the North Woods of the Midwest: A Century of Change. Department of Biological Sciences, University of Wisconsin-Parkside, Kenosha, WI, December 10, 2007.
- Gough C.** Forest carbon storage and prospects for mitigating climate change. Department of Environmental Sciences Spring 2007 Seminar Series, The University of Toledo, Toledo, OH, April 13, 2007.
- Gough C.** Carbon cycling in the north woods of Michigan: A century of change. Department of Biology. Central Michigan University, Mt. Pleasant, MI, January 11, 2007.
- Gough C.** Forest carbon storage and prospects for mitigating climate change. Department of Evolution, Ecology, and Organismal Biology Winter Seminar Series, The Ohio State University, Columbus, OH, February 23, 2006.
- Gough C.,** Seiler J., Wiseman E., and Selig M. 2003. Soil CO₂ efflux over a pine chronosequence. MeadWestvaco Pine Additivity Meeting. Summerville, SC.
- Gough C.,** Seiler J., Johnsen K, Maier C, Sampson D.A., and Butnor J. 2001. Modeling soil CO₂ efflux in managed loblolly pine ecosystems. James Madison University Biology Department Seminar. Harrisonburg, VA.
- Gough C.,** Seiler J., Johnsen K., and Sampson D.A. 2001. GPP in loblolly pine: a monthly comparison of empirical and process models. N.C. State Forest Nutrition Cooperative Annual Meeting. Raleigh, NC.

Oral Presentations

- Curtis P.S., **Gough C.M.**, Vogel C.S., Schmid H.P., Dragoni D. 2007. Ecosystem Processes and Interannual Variability in Fluxes At the University of Michigan Biological Station. Annual Ameriflux Meeting. Boulder, CO, October 17, 2007.
- Gough, C.M.**, Vogel C.S., Schmid, H.P., Curtis, P.S. 2007. Forest Carbon Storage in the Upper Midwest: Connecting the Past with the Future. 19th Biennial North American Forest Biology Workshop, Bloomington, IN, May 23, 2007.
- Maier, C., Sampson, D.A., Teskey, R., Johnsen, K., **Gough, C.** 2006. Ecosystem Respiration: Components and Processes. Critical Processes and Properties Regulating Carbon Cycling in Southern Forests, Crowne Plaza Hotel, Asheville, NC May 31 - June 2, 2006.
- Gough, C.M.**, Seiler, J.R., and Selig, M.F. 2004. Soil CO₂ efflux in loblolly pine plantations: impacts of forest management, stand age, climate and productivity. 18th Biennial North American Forest Biology Workshop. Houghton, MI.
- Sampson, D.A., and **Gough, C.M.** 2004. Carbon exchange and sequestration of pine ecosystems: simulations from the process model SECRET_3PG. 2004. 18th Biennial North American Forest Biology Workshop. Houghton, MI.
- Gough C.,** Seiler J., and Wiseman E. 2003. Predicting soil CO₂ efflux in the loblolly pine ecosystem across the region. The 12th Biennial Southern Silviculture Conference. Biloxi, MS.

- Gough C.**, Seiler J, Johnsen K, and Maier C. 2002. Influences on soil CO₂ efflux in intensively managed loblolly pine stands. 17th Biennial North American Forest Biology Workshop. Pullman, WA.
- Gough C.**, Seiler J., Johnsen K, Maier C, Sampson D.A., and Butnor J. 2001. A model for soil carbon efflux in managed loblolly pine ecosystems. Southern Forest Science Conference. Atlanta, GA.
- Gough C.**, Seiler J., Johnsen K., and Sampson D.A. 2001. GPP in loblolly pine: a monthly comparison of empirical and process models. The 11th Biennial Southern Silviculture Conference. Knoxville, TN.
- Gough C.**, Seiler J. and Johnsen K. 2000. Environmental influences on gas exchange in fertilized and non-fertilized loblolly pine. 16th Biennial North American Forest Biology Workshop. Merida, Yucatan, Mexico.
- Gough C.**, and Monroe J. 1998. Purification and properties of acidic alpha-glucosidase from crucifers. Washington Area Section of American Society of Plant Physiologists. Baltimore, MD.
- Monroe J.D., **Gough C.M.**, Chandler L.E., and Loch C.M. 1998. Localization and properties of an acidic alpha-glucosidase in vegetative tissue of broccoli and arabidopsis. ASPP National Meeting, Madison, WI.
- Gough C.**, Hall B., Stephen A. and Monroe J. 1997. Cloning and sequencing of two divergent alpha-glucosidase genes from *Arabidopsis*. Washington Area Section of American Society of Plant Physiologists. Washington, DC.

Poster Presentations

- Gough C.M.**, Flower C.E.¹, Vogel C.S., Dragoni D., Curtis P.S. Whole-Ecosystem Labile Carbon Production in a North Temperate Deciduous Forest. American Geophysical Union Fall Meeting, San Francisco, CA, December 17, 2008.
¹*M.S. student and advisee*
- Curtis P.S., **Gough C.M.**, Vogel C.S., Hardiman B., Bohrer G., Nave L.E. Projecting carbon cycling trajectories in forests of the upper Midwest, USA: Has carbon storage peaked? American Geophysical Union Fall Meeting, San Francisco, CA, December 17, 2008.
- Vogel, C.S., **Gough C.M.**, Curtis P.S. Do continuous data improve estimates of annual soil respiration?: The importance of measurements during rapid weather changes. Automated Soil Respiration Workshop, Durham, NH, September 11, 2007.
- Flower, C.E.¹, **Gough, C.M.**, Vogel, C.S., Curtis, P.S. Seasonal Patterns of Carbohydrate Allocation in Mature Aspen and Oak: Reconciling Above-canopy Measurements of CO₂ Exchange and Allometric Measurements of Tree Growth. 19th Biennial North American Forest Biology Workshop, Bloomington, IN, May 23, 2007.
¹*M.S. student and advisee*
- Wood C.¹, Hardimann B., **Gough C.**, Curtis P. Factors influencing soil carbon dynamics in Ohio prairies. OSU College of Biological Sciences Undergraduate Research Colloquium, Columbus, OH, April 27, 2007.
¹*Outstanding Poster Award, OSU Undergraduate Research Colloquium; undergraduate lead author and advisee*
- Curtis P.S., **Gough C.**, Vogel C., Schmid H.P. Disturbance, succession and forest carbon dynamics: Re-examining Odum's theory of ecosystem development with the tools of Fluxnet. North American Carbon Program Investigators Meeting. Colorado Springs, CO, January 22, 2007.

- Gough C.M.**, Vogel C.S., Kazanski C.¹, Nagel L.¹, Flower, C.E., and Curtis P.S. Coarse Woody Debris and Ecosystem Carbon Dynamics in a North Temperate Forest. The American Geophysical Union, Fall Meeting 2006. San Francisco, CA, December 15, 2006.
¹*undergraduate co-author, NSF Research Experience for Undergraduates advisee*
- Curtis P.S., Vogel C.S., Schmid H.P., and **Gough C.M.** Disturbance, succession and forest carbon dynamics: an ecosystem-scale experiment at the University of Michigan Biological Station. The American Geophysical Union, Fall Meeting 2006. San Francisco, CA, December 15, 2006.
- Nave, L.E. Vogel C.S., **Gough C.M.**, Curtis P.S. The Nitrogen Budget of a Northern Hardwood Forest: Sources and net Primary Productivity Requirements The American Geophysical Union, Fall Meeting 2006. San Francisco, CA, December 12, 2006.
- Gough C.M.**, Vogel C.S., Schmid H.P., and Curtis P.S. Disturbance, succession and forest carbon dynamics: an ecosystem-scale experiment at the University of Michigan Biological Station. New Research at UMBS~Flux. Annual Ameriflux Meeting. Boulder, CO, October 16, 2006.
- Herman J.¹, **Gough C.**, Curtis P. Roots in the Prairie: Unraveling the belowground performance of non-native plant species in an experimental prairie restoration. OSU College of Biological Sciences Undergraduate Research Colloquium, Columbus, OH, May 1, 2006.
¹*Outstanding Poster Award, OSU Undergraduate Research Colloquium; undergraduate lead author and advisee*
- Gough C.M.**, Vogel C.S., Harrold K.¹, George K.¹, and Curtis P.S. The legacy of forest harvest and burning on ecosystem carbon storage in the northern Midwest, USA. American Geophysical Union, Fall Meeting 2005. San Francisco, CA.
¹*undergraduate co-author, NSF Research Experience for Undergraduates advisee*
- Curtis P.S., **Gough C.M.**, and Vogel C.S. Forest carbon storage in the northern midwest, USA: a bottom-up scaling approach combining local meteorological and biometric data with regional forest inventories. American Geophysical Union, Fall Meeting 2005. San Francisco, CA.
- Gough C.M.**, Vogel C.S., Curtis P.S., Schmid H.P. and Su H.-B. 2005. Carbon storage in the upper Midwest, USA. Seventh International Carbon Dioxide Conference. Boulder, CO.
- Sampson D.A., **Gough C.M.**, Seiler J.R. 2005. Rotation-length carbon storage in managed loblolly pine (*Pinus taeda* L.) forests of the southeastern United States. Seventh International Carbon Dioxide Conference. Boulder, CO.
- Gough C.M.**, Vogel C.S., Curtis P.S., Schmid H.P. and Su H.-B. 2005. Carbon sequestration in northern Great Lakes forests. Fourth Annual Conference On Carbon Capture & Sequestration: Developing Potential Paths Forward Based on the Knowledge, Science and Experience to Date. Alexandria, VA.
- Gough C.M.**, Vogel C.S., Curtis P.S., Schmid H.P. and Su H.-B. 2004. Reconciling differences between eddy-covariance and biometric based estimates of annual C storage. American Geophysical Union Fall Meeting. San Francisco, CA.
- Desai A.R., Normeets A., Bolstad P.V., Chen J., Cook B.D., Curtis P.S., Davis K.J., Euskirchen E., **Gough C.**, Martin J., Ricciuto D.M., Schmid H.P., Tang J., Su H., Vogel C. 2004. Impact of vegetation cover and stand age on scaling carbon fluxes in the upper Midwest: a multiple eddy flux site study. American Geophysical Union Fall Meeting. San Francisco, CA.
- Gough C.M.**, Curtis P.S., Vogel C.S., Schmid H.P. and Su H.-B. 2004. Annual carbon storage from 1999 through 2002 in a northern hardwood forest assessed using eddy-covariance and biometric methods. Annual Ameriflux Meeting. Boulder, CO.

- Gough C.M.**, Curtis P.S., Vogel C.S., Schmid H.P. and Su H.-B. 2004. Annual carbon storage over 4 years in a northern hardwood forest assessed using eddy-covariance and biometric methods. 18th Biennial North American Forest Biology Workshop. Houghton, MI.
- Gough C. M.**, Seiler J. R., Wiseman P.E. and Maier C.A. 2003. Impacts of Forest Management, Climate, and Productivity on Soil CO₂ Efflux from Loblolly Pine (*Pinus taeda* L.) stands located on the Virginia Piedmont and the South Carolina coastal plain. American Geophysical Union Fall Meeting. San Francisco, CA.
- Seiler J., **Gough C.**, Selig M., and Maier C. 2003. Estimating soil CO₂ efflux in managed loblolly pine ecosystems: what we know and how we can apply it to carbon sequestration. Second Annual Conference on Carbon Sequestration: Developing and Validating the Technology Base to Reduce Carbon Intensity. Alexandria, VA.
- Gough C.**, Selig M., and Seiler J. 2002. Opportunities for reducing carbon turnover in managed loblolly pine stands: effects of fertilization and thinning. USDA Symposium on Natural Resource Management to Offset Greenhouse Gas Emissions. Raleigh, NC.

TEACHING AND MENTORING

Instructor of Record

Non-majors “Biology 102 – Human biology: A Case Study Approach”; Ohio State University; Winter quarter 2008; 375 students; instructor overall rating 4.6/5.0 (OSU average = 4.2).

Biology 693: Mid-Atlantic Global Change Biology; Spring semester 2009; Virginia Commonwealth University.

Guest Lectures/Teaching Assistant

Honors College Berglund Seminar Series; April 17, 2009; Confronting climate change: Can forests offset our carbon dioxide emissions?

Guest Lecturer (2 lectures); LFSC 101; Virginia Commonwealth University; March 16, 18, 2009; Topic: The physical basis for climate change

Guest Lecturer; Ecosystem Ecology; Virginia Commonwealth University; November 19, 2008; Title: Controls on annual forest carbon storage: Lessons from the past and predictions for the future.

Guest Lecturer; Environmental Microbiology; Virginia Commonwealth University; September 22, 2008; Title: Plant-microbial interactions in biogeochemical cycling.

Co-developer and instructor of short course titled “Ecophysiological methods for global change research”; University of Michigan Biological Station; 2007.

Guest Lecturer; General Biology for Non-majors; Ohio State University; 2007, 2008; Topic: “The scientific basis for global climate change”

Guest Lecturer; General Biology; Ohio State University; 2006;

Topic: “Rising atmosphere carbon dioxide and global climate change: Are they related?”

Guest Lecturer; Plant Physiological Ecology; Ohio State University; 2003, 2005, 2008; Topic: Plant water relations.

Teaching Assistant; General Biology Laboratory; Virginia Tech; 2002; overall rating 3.9/4.0; Responsibilities: Teach laboratory, write and administer exams and quizzes, develop student projects, facilitate learning through multi-media presentations on the course website and in the classroom.

Teaching Assistant; Dendrology; Virginia Tech; 1998, 2001, 2003; overall rating 3.6/4.0

Responsibilities: Facilitate learning of >100 plant species through field education.
Teaching Assistant; Silviculture; Virginia Tech; 2002
Responsibilities: Teach field and laboratory component of course.
Guest Lecturer; Forest Ecology; Virginia Tech; 2002
Topic: "Carbon accounting 101: the balance between ecosystem photosynthesis and respiration".
Guest Lecturer; Forest Biology; Virginia Tech; 2002
Topic: Photosynthesis and respiration
Teaching Assistant; Forest Ecology; Virginia Tech; 1999, 2000
Responsibilities: Cultivate student-writing skills, teach field and laboratory component of course.

Mentoring Experience

Joseph Wood; Virginia Commonwealth University; Graduate committee member; 2009-present
Hunter Elliot; Virginia Commonwealth University; Undergraduate research mentor; 2009-present
Eliza Fritz; High school student science research mentor; school year 2008-2009
Research topic: Suburban lawn management and soil carbon storage
Chris Wood; Ohio State University; undergraduate student; 2006-2007^{2,3}
Research topic: Prairie species and soil fertility effects on soil carbon and nitrogen cycling.
Charles Flower; Ohio State University; M.S. recipient; 2005-2007
Thesis title: Seasonal carbohydrate allocation in big tooth aspen (*Populus grandidentata* Michx.) and northern red oak (*Quercus rubra* L.) from northern lower michigan.
Suparna Biswas; Ohio State University; M.S. recipient; 2003-2005
Thesis title: "Coarse woody debris pools and fluxes in a northern deciduous forest, Michigan, USA".
Brad Ewing; Ohio State University; undergraduate student; 2003-2006
Research topic: Fine root dynamics in a northern hardwood forest.
Jennifer Herman; Ohio State University; undergraduate student; 2005-2006^{2,3}
Poster title: "Roots in the Prairie: Unraveling the belowground performance of native and non-native plant species in an experimental prairie restoration".
Sarah Yeskel; Univ. of Michigan Biological Station research associate; 2005
Research topic: Fine root dynamics over successional time in a northern hardwood forest.
Claire Baldeck; Ohio State University; Research Experience for Undergraduates; 2005
REU project: "Effects of temperature and moisture on the efflux of CO₂ from litter".
Katie Harrold; Middlebury College; Research Experience for Undergraduates; 2005^{1,4}
REU project: "Soil carbon and coarse woody debris pools across a burned and clearcut forest chronosequence".
Kristen George; St. Cloud State University; Research Experience for Undergraduate; 2004^{1,4}
REU project: "Microbial CO₂ Flux from Organic and Mineral Soil: Impacts of Tree Species Composition and Stand Age".
Clare Kazanski; Carleton College; Research Experience for Undergraduates; 2006¹
REU project: "The contribution of coarse woody debris to ecosystem respiration: laboratory measurements".
Laura Nagel; Allegheny College; Research Experience for Undergraduates; 2006¹
REU project: "The contribution of coarse woody debris to ecosystem respiration: field measurements".

¹co-author of peer-reviewed manuscript; ²Outstanding Poster Award, OSU Undergraduate Research Colloquium; ³lead author of presentation; ⁴co-author of presentation

HONORS AND AWARDS

Gamma Sigma Delta Graduate Dissertation Award of Merit for 2004, awarded to one Virginia Tech Ph.D. graduate annually
Outstanding Graduate Student Award 2002-2003, awarded to one graduate student annually from each college by the Virginia Tech Graduate School
A.B. Massey Award 2002-2003, awarded to one graduate student annually from the Forestry Department
William J. Dann Graduate Fellowship, 2000-2003, awarded to an outstanding graduate student from the Forestry Department
Virginia Tech Graduate Student Association travel grant, 2000
Outstanding Undergraduate Presentation Award, American Society of Plant Physiologists Washington D.C. Section Meeting, 1998
Magna Cum Laude, James Madison University, 1997
Distinction in Biology, James Madison University, 1997

ELECTED POSTS AND SERVICE

Virginia Commonwealth University Faculty learning community for Bio 101 reorganization; 2008-2009
Developer of VCU Biology Research Capstone Course, in University review, 2008
Proposal reviewer, National Science Foundation, Ecosystem Studies Program, 2005, 2006 (2), 2007 (2)
Tree Physiology Editorial Review Board, 2005
Referee for: *Global Change Biology* (5), *New Phytologist* (3), *Tree Physiology* (4), *Journal of Geophysical Research – Atmospheres*, *Journal of Tropical Forest Science*, *Applied Soil Ecology* (2), *Annals of Forest Science*, *Ecosystems* (2), *Forest Ecology and Management* (6), *Annals of Botany*, *Pedosphere*, *Environmental Management*, *Boreal Environment Research*, *Agricultural and Forest Meteorology*, *Plant Ecology*, *Canadian Journal of Forest Research*
Proposal reviewer for U.S. Civilian Research & Development Foundation, 2005
Ohio State College of Biological Sciences Undergraduate Student Research Fair Judge, 2004, 2005, 2006, 2007
Forestry Dept Budget and Planning Committee, Graduate Student Representative, 2001-2003
Graduate Student Association, Forestry Department Representative, 2001-2002
Forestry Dept Graduate Affairs Committee, Graduate Student Representative, 2001-2003
University Graduate Honor Court Panelist, College of Natural Resources Rep., 2002-2003
Graduate Student Orientation Committee, Forestry Department Representative, 2002
Forestry Department Graduate Student Mentoring Program Chair, 2002
University Board of Visitors Graduate Student Representative Selection Committee, 2002
4-H Natural Resources Student Presentations – Judge, 1999
Virginia High School Science Fair – Judge, 1998

PROFESSIONAL MEMBERSHIPS

American Geophysical Union
Society of American Foresters
Golden Key Club National Honor Society
Phi Sigma, Biological Research Honor Society
Phi Kappa Phi National Honor Society

RESEARCH OUTREACH AND APPLICATION

Research in the popular press

Natural defense: Research shows just how important and fragile forests are in global warming; Sept 30, 2008. Kevin Mayhood. Columubus Dispatch.

Scientists point to forests for carbon cycling solutions is the media's take on a synthesis presented in *BioScience* of our carbon cycling research conducted at the Univ. of Michigan Biol. Station, Sept 2008. <http://www.sciencedaily.com/releases/2008/09/080908185330.htm>

Aspen trees starved in global warming experiment. AP release published by *NY Times*, *Chicago Tribune*, *USA Today*, *CBS*, *NBC*, *ABC* and several thousand news outlets, May 2008.

Article here: http://www.usatoday.com/weather/climate/2008-05-22-aspen_globalwarming_experiment_N.htm

U-M scientists remove thousands of aspens to glimpse forest's future released by the University of Michigan Media Department, May 2008.

Article with multimedia: <http://www.ns.umich.edu/htdocs/releases/story.php?id=6562>

Modern forests suffer from century old logging legacy featured in OSU research news and several popular news outlets, December 2005:

<http://researchnews.osu.edu/archive/carbstor.htm>

Global change and forest carbon cycling: Lessons from the great north woods was featured in the James Madison University's "Living Connection" Biology Department Newsletter, 2007: <http://www.jmu.edu/biology/2007newsletter.pdf>

Research in policy publications

Research publication cited In: *The First State of the Carbon Cycle Report (SOCCR): The North American Carbon Budget and Implications for the Global Carbon Cycle.* A Report by the U.S. Climate Change Science Program and the Subcommittee on Global Change Research <http://www.climatechange.gov/Library/sap/sap2-2/final-report/default.htm>

Research publication cited In: *Carbon Storage in British Columbia's Forests and Management Options.* Pacific Institute for Climate Solutions, November 2008. Eds: Black, Jassal, Fredeen. <http://www.pics.uvic.ca/assets/pdf/Forestry.pdf>

Research publication citation by an NGO conservation group: <http://forestethics.org/article.php?id=2125>