

Erica A.H. Smithwick - Curriculum Vita

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RESEARCH FOCUS

Dr. Smithwick is a landscape and ecosystem ecologist whose research focuses on how disturbances (especially wildfire) affect ecosystem carbon storage and nutrient cycling. She uses field measurements and improves models to forecast the effect of changing climate on disturbance regimes and ecosystem function at regional scales. Current research is focused on the influence of these changes on socio-ecological resilience and sustainability, with special attention to protected area management in Africa and the U.S.

APPOINTMENTS

2013-present	Associate Professor of Geography, Department of Geography, The Pennsylvania State University
2015- present	Founding Director, Center for Landscape Dynamics, Earth and Environmental Systems Institute, The Pennsylvania State University
2007- present	Graduate Faculty, Intercollege Graduate Degree Program in Ecology; Dual- Title Graduate Degree Program in Biogeochemistry; and, Human Dimensions of Natural Resources and the Environment, The Pennsylvania State University
2007-present	Faculty Associate, Earth and Environmental Systems Institute, College of Earth and Mineral Sciences, The Pennsylvania State University
Jan-Jul 2016	Visiting Scientist/Fulbright Scholar, Rhodes University, South Africa
2007- 2013	Assistant Professor of Geography, Department of Geography, The Pennsylvania State University
2002 -2007	Postdoctoral Research Associate, University of Wisconsin-Madison, Landscape and Ecosystem Ecology Laboratory of Dr. Monica G. Turner

EDUCATION

Oregon State University	PhD	2002	Forest Science/Ecology
University of Montana	MS	1997	Forestry/Resource Conservation
Tufts University, <i>Cum laude</i>	BS	1995	Geology and Environmental Studies

FUNDED RESEARCH PROJECTS

Penn State Institutes of Energy and Environment Seed Grant. **Ecological migration in a large-scale quasi-experiment design in china: implications of climate change, landscape structure, ecosystem services, and government intervention.** Co-Principal Investigator (Principal Investigator: Guangqing Chi), 07/01/2017 – 6/30/2018, (\$25,000)

Penn State Human Health and Environment Seed Grant. **From environmental change to left-behind children's well-being in rural highlands: the nexus of pasture productivity, family processes, labor migrants, and child development.** Co-Principal Investigator (Principal Investigator: Guangqing Chi), 07/01/2017 – 6/30/2019, (\$50,000)

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The National Socio-Environmental Synthesis Center (SESYNC). **Landscape diversity and dietary diversity.** Co-Principal Investigator (Principal Investigator: Sarah Gergel), 03/01/2017 – 08/31/2017, (\$21,541)

Ecology Institute, The Pennsylvania State University. **Virtual ecology.** Co-Principal Investigator (Principal Investigator: Alexander Klippel), 2015-2017, (\$2,500)

College of Earth and Mineral Sciences, The Pennsylvania State University. Wilson Travel Grant. Principal Investigator. 2017-2018, (\$2000)

USDI Joint Fire Sciences Program. **Firescapes in the mid-Atlantic: mismatches between social perceptions and prescribed fire use.** Principal Investigator, 08/01/2016- 07/31/2019, (\$327,726)

National Science Foundation. **CNH-L: Visualizing forest futures under climate uncertainty: integrating indigenous knowledge into decision support tools for collaborative decision making.** Principal Investigator, 06/01/2016 - 05/31/2021 (\$1,700,000)

Penn State Institutes of Energy and Environment Seed Grant. **Mapping and measuring forests and wetlands with a UAS-based Lidar/multispectral system.** Co-Principal Investigator (Principal Investigator: Doug Miller), 2016-2017, (\$25,000)

J. William Fulbright Research/Teaching Award to South Africa, Rhodes University. **Measuring and monitoring forest carbon stocks and biodiversity.** Principal Investigator, 1/1/2016 – 6/30/2016

Center for Online Innovation in Learning, Penn State University. **Interactive videos in online learning.** Principal Investigator, 7/1/15 to 6/30/16, (\$36,106)

2015/2016 Penn State Institute of Energy and Environment Seed Grant. **Landscapes of fire and people: how climate, human values, and shifting ecologies will influence mid-Atlantic forest management.** Principal Investigator, 3/15/16 – 6/30/15, (\$24,737)

The John Wesley Powell Center for Analysis and Synthesis. **Forecasting forest response to N deposition: integrating data from individual plant responses to soil chemistry with a continental-scale gradient analysis.** 1/1/2014 – 12/31/2015, Co-Principal Investigator, (\$167,790)

The National Park Service. **Identifying critical thresholds: relating soil solution and exchangeable chemistry to detrimental plant responses.** Principal Investigator, 2/1/14-12/31/15. (\$20,549)

Penn State Institute of Energy and Environment Seed Grant. **Sustainable intensification of grazing land to produce food and bioenergy.** Principal Investigator, 1/1/13 – 12/31/14, (\$25,000)

The Sustainability Institute Reinvention Fund, Penn State. **Building sustainable communities through the digital global classroom.** Principal Investigator, 7/1/2014-6/30/2015, (\$36,500)

College of Earth and Mineral Sciences Gladys Snyder Educational Grant. **Parks as stories: video learning tools to enhance landscape sustainability.** Principal Investigator, 7/1/12 – 6/30/13, (\$5000)

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NASA Research Opportunities in Space and Earth Sciences. **Influence of disturbance and seasonality on regional carbon flux upscaling.** Principal Investigator, 7/1/2011 to 6/30/2014, (\$883,605)

College of Earth and Mineral Sciences George H. Deike Jr. Research Grant. **Pyrogeography: understanding complexity and resilience on African landscapes.** Principal Investigator, 7/1/12 – 6/30/13, (\$50,000)

National Science Foundation-Division of Ecosystem Biology (EAGER). **Spatial patterns of nutrient limitation and carbon storage in South African coastal lowland landscapes.** Principal Investigator, 7/1/09-6/31/12, (\$150,675)

National Science Foundation-Division of Ecosystem Biology (REU-EAGER). **Spatial patterns of nutrient limitation and carbon storage in South African coastal lowland landscapes.** Principal Investigator, 8/1/10 – 7/31/12, (\$15,500)

Appalachian Trail Conservancy. **Characterization of “elevational landscapes” along the Appalachian Trail Mega-Transect.** Principal Investigator, 10/1/08 – 9/30/09, (\$20,000)

Department of Energy, National Institute of Climatic Change Research. **Consequences of novel disturbance regimes on climate-induced biogeographic shifts along the Appalachian Trail.** Principal Investigator, 4/1/09 – 3/31/11, (\$125,000)

United States Department of the Interior Joint Fire Science Program. **Climate, fire and carbon: tipping points and landscape vulnerability in the Greater Yellowstone Ecosystem.** Principal Investigator, 7/1/09- 12/31/10, (\$140,653)

National Science Foundation. **GK-12: Carbon education and research together for humanity.** Co-Principal Investigator, (Principal Investigator: Renee Diehl), 3/15/10 – 2/28/15, (\$3,000,000)

National Science Foundation -Coupled Natural Human Systems. **Climatic extremes, mining, and *Mycobacterium ulcerans*: a coupled systems approach.** Co-Principal Investigator, (Principal Investigator: Petra Tschakert), 10/09- 8/31/14 (\$1,421,997)

National Science Foundation, Ecosystem Science Program. **RCN: The Novus project for integrating paleo- and neo-ecosystem ecology.** Participant, 2012-2017, (\$499,753)

National Science Foundation, Ecosystem Science Program. **Ecosystem response to disturbance from decadal to millennial timescales: support for the PROBE workshop.** Participant, 2011-2012, (\$29,917)

PEER-REVIEWED PUBLICATIONS

Submitted, In Review

1. **Smithwick EAH**, Baxter E, Kim K, Rocco S. Interactive videos enhance learning about socio-ecological systems. Submitted to *Journal of Geography*, June 9, 2017, revisions submitted July 27, 2017

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2. Horn KJ, Thomas RQ, Pardo LH, , Lawrence GB, Clark CM, Fenn ME, Lawrence GB, Perakis SS, **Smithwick EAH**, Baldwin DC, Braun S, Nordin A, Perry CH, Phelan JN, Schaberg PG, St.Clair SB, Warby R, Watmough S. Nitrogen deposition differentially affects growth and survival of tree species across the U.S. *Nature Plants*, revisions submitted June 20, 2017
3. Peeler JL*, **Smithwick EAH**. Species distribution modeling identifies potential post-fire invasion of cheatgrass (*Bromus tectorum*) in Rocky Mountain montane forests, USA. Submitted to *Landscape Ecology*, June 23, 2017

Published or In Press

2017

1. Averill, K*, Moretnsen D, **Smithwick E**, Kalisz S, McShea W, Bourg N, Parker J, Royo A, Abrams M, Apsley D, Blossey B, Boucher D, Caraher K, DiTommaso A., Johnson S, Masson R, Nuzzo V. In press. A regional assessment of the effects of white-tailed deer on plant invasion. *AoB Plants*. Accepted, July 31, 2017.
2. Baldwin D*, Manfreda S, Keller K, **Smithwick EAH**. 2017. Predicting root zone soil moisture with soil properties and satellite near-surface moisture data across the conterminous United States, *Journal of Hydrology* 546:393-404, <http://dx.doi.org/10.1016/j.jhydrol.2017.01.020>
3. Taber ED*, Hutchinson, ML, **Smithwick EAH**, Blanford JI. 2017. A decade of colonization: the spread of the Asian Tiger Mosquito in Pennsylvania and Implications for disease risk. *Journal of Vector Ecology* 42(1): 3-12. <https://doi.org/10.1111/jvec.12234>

2016

4. **Smithwick EAH**, Baldwin DC*, Naithani KJ*. 2016. Grassland productivity in response to nutrient additions and herbivory is scale-dependent, *PeerJ* 4:e2745; DOI 10.7717/peerj.2745
5. **Smithwick EAH**. 2016. Build social costs into wildfire risks. *Nature* (Correspondence) 535 (7611): 231. doi:10.1038/535231b
6. Wu J*, **Smithwick EAH**. 2016. Landscape fragmentation as a risk factor for Buruli ulcer disease. *American Journal of Tropical Medicine and Hygiene*, 95(1): 63-69. doi: 10.4269/ajtmh.15-0647
7. Averill KM*, Mortensen DA, **Smithwick EAH**, Post E. 2016. Generalist herbivore feeding selectivity is plant species-specific, regardless of nature/introduced status. *Biological Invasions* 18(5): 1247-1263. DOI: 10.1007/s10530-016-1063-z
8. Tschakert P, Ricciardi V, **Smithwick EAH**, Machado M, Ferring D, Hausermann H, Bug L. 2016. Situated knowledge of pathogenic landscapes in Ghana: understanding the emergence of Buruli ulcer through qualitative analysis. *Social Science and Medicine* 150: 160-171. <http://dx.doi.org/10.1016/j.socscimed.2015.12.005>

2015

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9. Taber E* and **Smithwick EAH**. 2015. Influence of protected areas on malaria prevalence in sub-Saharan Africa. *Applied Geography* 64:35-45. doi:10.1016/j.apgeog.2015.09.001
10. Wu, J*, Tschakert P, Klutse E, Ferring D, Ricciardi V, H Hausermann H, Oppong J, **Smithwick EAH**. 2015. Buruli ulcer disease and its association with land cover in Southwestern Ghana. *PLoS Neglected Tropical Disease* 9(6):30003840. doi: 10.1371/journal.pntd.0003840
11. Keane RE, McKenzie D, Falk DA, **Smithwick EAH**, Miller, C., Kellogg, L-K. B. 2015. Representing climate, disturbance, and vegetation interactions in landscape models. *Ecological Modelling* 309-310: 33-47. doi:10.1016/j.ecolmodel.2015.04.009
12. Hagarty J, Azanu D, Atosona B, Voegborlo R, **Smithwick EAH**, Singha K. 2015. Chemistry of natural waters and its relation to Buruli Ulcer in Ghana. *Journal of Hydrology: Regional Studies* 3: 457-472. doi:10.1016/j.ejrh.2015.03.006
13. McCormack, ML*, Crisfield E, Raczka B, Schnekenburger F, Eissenstat DM, **Smithwick EAH**. 2015. Sensitivity of four ecological models to adjustments in fine root turnover rate. *Ecological Modeling* 297: 107-117. doi:10.1016/j.ecolmodel.2014.11.013

2014

14. **Smithwick, EAH**, ML McCormack*, M Lucash, G Sivandran. 2014. Improving the representation of roots in terrestrial models. *Ecological Modelling* 291: 193-204. doi:10.1016/j.ecolmodel.2014.07.023
15. McCormack ML*, Adams TS, **Smithwick EAH**, Eissenstat DM. 2014. Variability in root production and root phenology alter estimates of fine root turnover rate. *Ecology* 95: 2224-2235. <http://dx.doi.org/10.1890/13-1942.1>
16. McLauchlan KK, PE Higuera, DG Gavin, SS Perakis, MC Mack, H Alexander, J Battles, F Biondi, B Buma, D Colombaroli, S Enders, DR Engstrom, FS Hu, JR Marlon, J Marshall, M McGlone, J L. Morris, LE Nave, BN Shuman, **E Smithwick**, DH Urrego, DA Wardle, CJ Williams, JJ Williams. 2014. Reconstructing disturbances and their biogeochemical consequences over multiple timescales. *BioScience* 64(2): 105-116.

2013

17. McCormack ML*, Eissenstat DM, Prasad AM, **Smithwick EAH**. 2013. Regional scale patterns of fine root lifespan and turnover under current and future climate. *Global Change Biology* 19(6): 1697-1708. doi: 10.1111/gcb.12163
18. **Smithwick EAH**, Eissenstat DM, Lovett G, Bowden R, Rustad L, and Driscoll C. 2013. Root Stress and Nitrogen Deposition: Consequences and Research Priorities *New Phytologist* 197 (3): 712-719. doi: 10.1111/nph.12081

2012

19. **Smithwick EAH**, Naithani KJ*, Balsler TC, Romme WH, and Turner MG. 2012. Fine-Scale Spatial Distribution of Microbial Communities and Soil Nitrogen Cycling Following Wildfire. *PLoS One*, 7(11):e50597. doi: 10.1371/journal.pone.0050597

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20. Hausermann H, Tschakert P, **Smithwick EAH**, Ferring D, Amankwah R, Klutse E, Hagarty J, Kromel L. 2012. Contours of risk: spatializing human behaviors to understand disease dynamics in changing landscapes. *EcoHealth* (9): 251-255, doi:10.1007/s10393-012-0780-8.
21. McCormack ML*, Adams TS, **Smithwick EAH**, Eissenstat DM. 2012. Predicting fine root lifespan from functional traits in temperate trees. *New Phytologist* 195(4): 823-831. doi: 10.1111/j.1469-8137.2012.04198.x

2011

22. Westerling AL, Turner MG, **Smithwick EAH**, Romme WH, Ryan MG. 2011. Continued warming could transform Greater Yellowstone fire regimes by mid-21st Century, *Proceedings of the National Academy of Sciences* 108: 13165-13170. doi: 10.1073/pnas.1110199108
23. Turner MG, Romme WH, **Smithwick EAH**, Tinker DB, Zhu J. 2011. Variation in aboveground cover influences soil nitrogen availability at fine spatial scales following severe fire in subalpine conifer forests. *Ecosystems* 14(7):1081-1095. doi: 10.1007/s10021-011-9465-3
24. Cleveland MR*, **Smithwick EAH**, Wardrop DH, Brooks RB. 2011. The wetland disturbance index: links with soil and water nitrate concentrations. *Wetlands* 31(5):853-863. doi: 10.1007/s13157-011-0200-9

2010

25. **Smithwick EAH**. 2010. Pyrogeography: Lessons for future northeastern U.S. landscapes. *Penn State Environmental Law Review* 18(2): 101-121.

2009

26. Turner MG, **Smithwick EAH**, Tinker DB, and Romme WH. 2009. Variation in foliar nitrogen and aboveground net primary production in young postfire lodgepole pine. *Canadian Journal of Forest Research-Revue Canadienne De Recherche Forestiere* 39:1024-1035. <https://doi.org/10.1139/X09-029>
27. **Smithwick EAH**, Kashian DM, Ryan MG, and Turner MG. 2009. Long-term nitrogen storage and soil nitrogen availability in post-fire lodgepole pine ecosystems. *Ecosystems* 12:792-806. <http://dx.doi.org/10.1007/s10021-009-9257-1>
28. **Smithwick EAH**, Ryan MG, Kashian DM, Romme WH, Tinker DB, and Turner MG. 2009. Modeling the effects of fire and climate change on carbon and nitrogen storage in lodgepole pine (*Pinus contorta*) stands. *Global Change Biology* 15:535-548. doi: 10.1111/j.1365-2486.2008.01659.x

2008

29. Schoennagel T, Turner MG, and **Smithwick EAH**. 2008. Landscape heterogeneity following large fires: insights from Yellowstone National Park, USA. *International Journal of Wildland Fire* 17: 742-753. doi: 10.1071/WF07146
30. Metzger KL, **Smithwick EAH**, Tinker DB, Romme WH, Balsler TC, and Turner MG. 2008. Influence of coarse wood and pine saplings on nitrogen mineralization and microbial

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communities in young post-fire *Pinus contorta*. *Forest Ecology and Management* 256:59-67.
<https://doi.org/10.1016/j.foreco.2008.03.043>

2007

31. Turner, MG, **Smithwick EAH**, Metzger KL, Tinker DB, and Romme WH. 2007. Inorganic nitrogen availability following severe stand-replacing fire in the Greater Yellowstone Ecosystem, inaugural paper, *Proceedings of the National Academy of Science* 104 (12): 4782-4789. doi: 10.1073/pnas.0700180104

2006

32. **Smithwick EAH**. 2006. Editorial: Role of microbial communities in mediating ecosystem response to disturbance, Special Issue in *Plant and Soil* 289:1-3. doi:10.1007/s11104-006-9084-5
33. **Smithwick EAH**, Harmon ME, Domingo JB. 2006. Changing temporal patterns of forest carbon stores and net ecosystem carbon balance: The stand to landscape transformation, *Landscape Ecology* 22(1): 77-94. doi: 10.1007/s10980-006-9006-1

2005

34. **Smithwick EAH**, Mack MC, Turner MG, Chapin III FS, Zhu J, Balser TC. 2005. Spatial heterogeneity and soil nitrogen dynamics after severe fire in a black spruce (*Picea mariana*) forest, Alaska: Distinct controls at different scales. *Biogeochemistry* 76: 517-537. doi: 10.1007/s10533-005-0031-y
35. **Smithwick EAH**, Turner MG, Mack MC, Chapin III, FS. 2005. Post-fire soil N cycling in northern conifer forests affected by severe, stand-replacing wildfires. *Ecosystems* 8: 163-181. doi: 10.1007/s10021-004-0097-8
36. **Smithwick EAH**, Turner MG, Metzger KL, Balser TC. 2005. Variation in NH₄⁺ mineralization and microbial communities with stand age in lodgepole pine (*Pinus contorta*) forests, Yellowstone National Park (USA). *Soil Biology and Biochemistry* 37: 1546-1559. doi: 10.1016/j.soilbio.2005.01.016
37. Homann PS, Harmon ME, Remillard SM, **Smithwick EAH**. 2005. What the soil reveals: Maximum ecosystem C stores of the Pacific Northwest region, USA. *Forest Ecology and Management* 220: 270-283. doi: 10.1016/j.foreco.2005.08.035

Pre-2004

38. Miller JM, Turner MG, **Smithwick EAH**, Dent LC, Stanley EH. 2004. Spatial extrapolation: the science of predicting ecological patterns and processes. *Bioscience* 54(4): 310-320 doi:10.1641/0006-3568(2004)054[0310:SETSOP]2.0.CO;2
39. **Smithwick EAH**, Harmon ME, Domingo JB. 2003. Modeling multi-scale effects of light limitations and edge-induced mortality on carbon stores in forest landscapes. *Landscape Ecology* 18(7): 701-721 doi: 10.1023/B:LAND.0000004254.94982.67
40. Korontzi S, Ward DE, Susott RA, Yokelson RJ, Justice CO, Hobbs PV, **Smithwick EAH**, Hao WM. 2003. Seasonal variation and ecosystem dependence of emission factors for selected

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- trace gases and PM_{2.5} for southern African savanna fires. *Journal of Geophysical Research* 108(D24), 4758. doi: 10.1029/2003JD003730
41. **Smithwick EAH**, Harmon ME, Acker SA, Remillard SM. 2002. Potential upper bounds of carbon stores in the Pacific Northwest. *Ecological Applications* 12(5): 1303-1317. doi: 10.1890/1051-0761(2002)012[1303:PUBOCS]2.0.CO;2
42. **Hoffa EA**, Ward DE, Hao WM, Susott RA, Wakimoto RH. 1999. Seasonality of carbon emissions from biomass burning in a Zambian savanna. *Journal of Geophysical Research* 104: 13,841 – 13,853. doi: 10.1029/1999JD900091

BOOK CHAPTERS, BOOK REVIEWS, PROCEEDINGS, DATA SETS, ETC.

43. Blackstock, D., Edel-Malizia, S., Bittner, K., and **Smithwick, E.** 2017. Investigating Interactive video assessment tools for online and blended learning. *Proceedings of the International Conference on eLearning*, Orlando, FL, U.S.A.
44. Keane, RE, Loehman, R, Clark, J, **Smithwick EAH**, Miller C. 2015. Exploring interactions among multiple disturbance agents in forest landscapes: simulating effects of fire, beetles, and disease under climate change. Ch.8, pp 201-231, in *Simulation Modeling of Forest Landscape Disturbances*, Perera A., Rimmel, R. and Buse L., eds., Springer International Publishing Switzerland, doi: 10.1007/978-3-319-19809-5_8.
45. Wu, J*, **Smithwick EAH**, Ferring D, Hausermann H, Oppong J, Ricciardi V, Tschakert P 2015. Buruli Ulcer (BU) and landscape disturbance in Ghana 2007-2010. Data set. Available online [<http://www.datacommons.psu.edu/>] at The Pennsylvania State University, University Park, Pennsylvania, U.S.A. doi:10.13014/D3G44N6X
46. **Smithwick, EAH**, Westerling A L, Turner MG, Romme WH, Ryan MG. Vulnerability of Landscape Carbon Fluxes to Future Climate and Fire in the Greater Yellowstone Ecosystem.” In: Questioning Greater Yellowstone’s Future: Climate, Land Use, and Invasive Species. Proceedings of the 10th Biennial Scientific Conference on the Greater Yellowstone Ecosystem. October 11–13, 2010, Mammoth Hot Springs Hotel, Yellowstone National Park. C. Andersen, ed., 131–134. Yellowstone National Park, WY, and Laramie, WY: Yellowstone Center for Resources and University of Wyoming William D. Ruckelshaus Institute of Environment and Natural Resources
47. **Smithwick EAH**. 2011. Pyrogeography and biogeochemical resilience, pp143-164 in *The Landscape Ecology of Fire*, eds. by D. McKenzie, D. Falk, C. Miller, Springer.
48. **Smithwick EAH**. 2010. Disturbance ecology, biogeochemistry and resilience: three decades of inquiry. Organized Oral Session 34. *Bulletin of the Ecological Society of America* 91:80-93.
49. **Smithwick EAH**. 2006. Gentle introduction to complexity on landscapes. Book Review for *Ecology* 87(11):2954-2955, doi: 10.1890/0012-9658(2006)87[2954:GITCOL]2.0.CO;2

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SYNERGISTIC ACTIVITIES

Science Community

- Invited External Peer Reviewer, Research Councils UK (RCUK)
- Invited External Peer Reviewer, NSF-Ecosystems (2x)
- Invited External Peer Reviewer, NSF-Geography and Spatial Sciences (2x)
- Invited Panelist, NSF-Ecosystems
- Invited Panelist, NASA ROSES Terrestrial Ecology
- Chair, Users Working Group, NASA/Oak Ridge National Laboratory Distributed Active Archive Center for Biogeochemical Dynamics (ORNL DAAC), 2014-2016
- Member, Users Working Group, NASA/Oak Ridge National Laboratory Distributed Active Archive Center for Biogeochemical Dynamics (ORNL DAAC), 2011-2016

Journals

- Associate Editor, *Ecosystems*, 1/1/2015 – present
- Associate Editor, *Regional Environmental Change*, 1/1/2014 - present
- Editorial Advisory Board member, *Global Change Biology* 2008-2010
- Peer-reviewer:
 - Biogeochemistry*
 - Bioscience*
 - Canadian Journal of Forest Research*
 - Ecology*
 - Ecology and Society*
 - Ecological Modelling*
 - Ecosystems*
 - Ecological Applications*
 - Ecological Monographs*
 - Environmental & Ecological Statistics*
 - Forest Ecology and Management*
 - Geophysical Research Letters*
 - Global Change Biology*
 - Global Ecology and Biogeography*
 - International Journal of Applied Earth Observation and Geoinformation*
 - Journal of Biogeography*
 - Journal of Ecology*
 - Journal of Mountain Science*
 - Landscape Ecology*
 - Nature Climate Change*
 - New Phytologist*
 - PeerJ*
 - Physical Geography*
 - Plant and Soil*
 - PLoS*
 - Proceedings of the National Academy of Sciences*
 - Soil Biology and Biochemistry*
 - Soil Science Society of America Journal*
- Guest Editor for *Plant and Soil* Special Issue: Microbial communities and post-disturbance ecosystem function, 2006

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Membership in Professional Associations

- American Geophysical Union
- Ecological Society of America
- International Association of Landscape Ecology

Organized Conference Sessions

- Visualizing indigenous forest futures. Resilience 2017, Stockholm, Sweden, August 2017
- Landscape Resilience to changing disturbance dynamics: bold approaches and solutions, International Association of Landscape Ecology – US Chapter, Annual Meeting, Newport RI, April 2012
- Understanding Variability in Social Ecological Systems, American Association of Geographers Annual Meeting, Seattle WA, April 2011
- Disturbance and Disturbance Interactions, Association of American Geographers Annual Meeting, Washington DC, April 2010
- Disturbance ecology, biogeochemistry and resilience: three decades of inquiry, Ecological Society of America Annual Meeting, Albuquerque, NM, August 2009
- Role of microbial communities in mediating ecosystem response to disturbance, Ecological Society of America Annual Meeting, August 2006

Organized Workshops

- Visualizing Forest Futures (VIFF) Community Workshop. December 2016, College of Menominee Nation, Keshena Wisconsin
- National Council for Science and the Environment: The Food-Energy-Water Nexus, 16th National Conference and Global Forum on Science, Policy and the Environment, January 2016, Washington D.C.
- Chequamegon Ecosystem Atmosphere Study: Observing and simulating carbon cycle impacts of forest management and climate variability in heterogeneous landscapes, June 2012, Kemp Natural Resources Station, Woodruff WI, co-organizer with Ankur Desai.
- Spatial Landscape Modeling, International Association of Landscape Ecology - US Chapter Annual Meeting, Madison WI, April 2008
- Introduction to Remote Sensing, LTER All-Scientists Meeting, Snowbird UT, 2000
- Career Planning, LTER All-Scientists Meeting, Snowbird UT, 2000

Invited Workshop Participation

- National Academy of Sciences: A Century of Wildland Fire Research: Contributions to Long-term Approaches for Wildland Fire Management, March 2017
- Santa Fe Institute Workshop: Reinventing the Grid: Designing Resilient, Adaptive and Creative Power Systems, Santa Fe Institute, Santa Fe, New Mexico, April 2015
- KNAW Academy Colloquium. Climate models revisited: the biogeochemical consequences of mycorrhizal dynamics, Amsterdam, The Netherlands, April 2015
- Shifting Seasons: Building Tribal Capacity for Climate Change Adaptation Summit, Kenosha WI, October 2014
- NOVUS Workshop: Fort Collins Colorado USA, September 2014
- Global Sustainable Bioenergy and LACAf, Kruger National Park, South Africa, May 2014
- Global Sustainable Bioenergy and LACAf, Ititaba, Sao Paulo, Brazil, November 2013
- COMPASS Scientific Communication Workshop, Pennsylvania, September 2013
- Scaling root processes: Global Impacts Workshop, DOE, Washington DC, March 2012

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- PROBE Workshop: Paleo Reconstructions of Biogeochemical Environments, NSF, Manhattan, KS, April 2012
- Living Laboratory Workshop, Eastern Cape South Africa, September 2011
- Steering Committee, Wild Coast Living Laboratory, South Africa, 2011-2013

Elementary and High School Outreach

- WiSciFiles Live Chat (Facebook) with two middle school classrooms in PA, March 2016: <http://wpsu.psu.edu/live-wiscifiles/>
- Mentor, Summer Experience in Earth and Mineral Sciences (SEEMS), a research program for underrepresented high school students, “Pennsylvania Soils: From Landscape to Field Plots and Back Again,” Penn State University, Summer 2012
- Instructor, “Our breathing planet: Introduction to the Carbon Cycle”, MathOptions program for 7th grade girls, Penn State DuBois, DuBois, Pennsylvania, May 2011
- Participant and Speaker, Remote sensing of land use change and Buruli Ulcer, Penn State University, September 2013
- Participant and Speaker, Experiencing Authentic Science as Process, Penn State University, May 2011
- Participant and Speaker, Teacher Workshop and Kickoff Meeting for Ghana Buruli Ulcer project, Penns Valley High School, December 2010
- Speaker, Complex System Science: Yellowstone Ecosystem and Buruli Ulcer, Penns Valley High School, December 2010
- Participant and speaker, Penns Valley Teacher Workshop, Complex Systems Science, Penn State University, November 2010
- Instructor, “Seeing Through the Smoke: Understanding Fire in Yellowstone National Park” Environmental Issues in National Parks Lecture Series, public lecture and high school outreach program, Ashland University, Ashland, Ohio, April 2007
- Instructor and Mentor, Summer Experience in Earth and Mineral Sciences (SEEMS), a research program for underrepresented high school students, “Nitrogen Cycling in the Bald Eagle Watershed”, Summer 2008
- Instructor, “Our breathing planet: Introduction to the Carbon Cycle”, MathOptions program for 7th grade girls, Penn State DuBois, DuBois, Pennsylvania, May 2008

Public service

- Panelist for Discussion of “Managing Risk in a Changing Environment”, State Theatre (Spring 2017)
- Panelist for Discussion of “Before the Flood”, University Park, PA (Fall 2016)
- Pennsylvania State Wildlife Action Plan Revision Climate Change Committee, 2013 - 2015
- Pennsylvania Natural Resources Working Group for Climate Change Adaptation member, PA Department of Environment, The Nature Conservancy, others, 2010-2012
- Invited U.S. Senate Science Briefing: H.R. 4200 (salvage logging legislation), 2006
- Instructor Ecosystem Dynamics of Fire, USDA course for prescribed fire managers, sponsored by the Fish and Wildlife Service, Stevens Point, WI, 2007

PRESS AND OUTREACH

- Television, Videos and Documentaries
 - Invited expert guest, WPSU Conversation Live: Climate (TV and FM Radio), Thursday April 27th 2017

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- Interviewed and filmed for WPSU documentary “Managing Risk in a Changing Environment” <http://wpsu.psu.edu/changingclimate/>
- WPSU documentary “Carbon and Conservation in South Africa”, November 4, 2015, hosted on YouTube <https://www.youtube.com/watch?v=sqTdsCgaAGQ>
- Featured in WPSU documentary (WiSciFiles) about Women in Science profiles <https://wpsu.psu.edu/digital/women-in-science-profiles/>
 - WiSciFiles video was featured on Penn State’s main home page (pennstate.edu)
- Featured in **Centre Daily Times**
 - “Erica Smithwick sets out on a ‘grand adventure’ March 11, 2017 <http://www.centredaily.com/living/article138013778.html>
 - “Penn State climatologists screen “before the flood”; talk climate change”, Nov 2, 2016 <http://www.centredaily.com/news/local/education/penn-state/article112213327.html>
- Featured in **Penn State News:**
 - How land use affects the spread of disease, Sept 8, 2016 <http://news.psu.edu/story/424659/2016/09/08/research/how-land-use-affects-spread-disease>
 - Professor awarded Fulbright to study tree carbon storage, teach in South Africa, October 30, 2015 <http://news.psu.edu/story/378044/2015/10/29/research/professor-awarded-fulbright-study-tree-carbon-storage-teach-south>
 - Local women in STEM-related professions to be highlighted in new WPSU web series, Feb 13, 2017 <http://news.psu.edu/story/450351/2017/02/13/public-events/local-women-stem-related-professions-be-highlighted-new-wpsu>
 - Climate change impacts on Menominee nation’s forest home focus of NSF funding: <http://news.psu.edu/story/431109/2016/10/10/climate-change-impacts-menominee-nations-forest-home-focus-nsf-funding>
 - Interactive videos used to explore complexities of conservation in online course: <http://news.psu.edu/story/372878/2015/10/05/academics/interactive-videos-used-explore-complexities-conservation-online>
 - “Taste test?” Deer preferences seem to help non-native invasive plants spread, April 25, 2016 <http://news.psu.edu/story/406166/2016/04/25/research/taste-test-deer-preferences-seem-help-non-native-invasive-plants>
 - “Interactive video quizzes prove successful for student engagement.” October 7, 2016, <http://tlt.psu.edu/2016/10/07/interactive-video-quizzes-prove-successful-for-student-engagement/>
- Quoted interview
 - “Northeast Christmas tree farmers get drought in their stockings” **Christian Science Monitor**, December 8, 2016, <http://www.csmonitor.com/Environment/Inhabit/2016/1208/Northeast-Christmas-tree-farmers-get-drought-in-their-sockings>
 - NSF Press Release: “NSF awards \$16.7 million for research on how humans, environment interact: https://www.nsf.gov/news/news_summ.jsp?cntn_id=189781
 - “Deer turn up their noses at some invasive species,” **Futurity**, April 16, 2016 <http://www.futurity.org/deer-invasive-species-plants-1141442-2/>
 - “How fire could change the face of the West” **Wired Magazine**, July 6, 2012 <https://www.wired.com/2012/07/western-fire-transformation/>

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- “Why Big, Intensive Wildfires are the New Normal.” **National Geographic**, August 30, 2013, <http://news.nationalgeographic.com/news/2013/08/130827-wildfires-yosemite-fire-firefighters-vegetation-hotshots-california-drought/>
- “Climate change to increase Yellowstone wildfires dramatically,” July 25, 2011, **ScienceDaily** <https://www.sciencedaily.com/releases/2011/07/110725152847.htm>
- “Wildfire!” **WhyFiles**, July 7, 2011 <http://whyfiles.org/2011/wildfire-2/>

TEACHING

EMS Freshman Seminar, Fall 2016 and Fall 2017: Global Conservation
Botany 301, Landscape ecology module, Rhodes University Spring 2016
Global Parks and Sustainability (GEOG097/296/001), resident, online, and hybrid
Landscape Ecology (GEOG 414, GEOG 311)
Graduate Seminar in Ecological Modeling (GEOG 510/597)
Advances in Ecology (ECLGY 597, 4 lecture module)
Perspectives in Landscape Ecology (GEOG 597E, Graduate Seminar, Fall 2008)
Landscape Genetics and Microbial Biogeography (ECOL 597B, Spring 2008)
Introduction to Physical Geography (GEOG 010)
Conservation and Climate: Ecosystem Change in Sub-Saharan Africa (GEOG 497U)

INVITED SEMINARS, COLLOQUIA

- 2017 **Smithwick, EAH**. Lehigh University, PA. September 29, 2017
- 2017 **Smithwick EAH**. Digital Storytelling through interactive video. COIL Conversations Live, The Pennsylvania State University, University Park, PA, USA, March
- 2017 **Smithwick EAH**. Molo to Muti: evolving adventures in transformative global engagement in South Africa. Fulbright Seminar Series, The Pennsylvania State University, University Park, PA, USA, 20 March
- 2017 **Smithwick EAH**. Landscape ecology as a framework to understand socio-ecological systems. SCRiM Seminar Series, The Pennsylvania State University, University Park, PA, USA, March
- 2016 **Smithwick EAH**. Recreation, Parks, and Tourism Management Seminar, The Pennsylvania State University, University Park, PA, USA 14 October
- 2016 **Smithwick EAH**. Thinking spatially and socially: enhancing landscape management under rapid ecological change. Big Questions Ecology Colloquium, The Pennsylvania State University, University Park, PA, USA, 3 October
- 2016 **Smithwick EAH**. Perceiving forest change: bridging indigenous knowledge and virtual ecology. Department of Environmental Studies, Rhodes University, South Africa, June 15
- 2016 **Smithwick EAH**. Landscape ecology as a scientific framework to address socio-ecological systems in Africa. Department of Botany, Rhodes University, South Africa, March 2
- 2015 **Smithwick EAH**. Linking plants and soils to understand ecosystem thresholds in response to nitrogen deposition. University of Maryland Center for Environmental Science, Appalachian Laboratory, February 12
- 2014 **Smithwick EAH**. Scaled productivity response of nutrient additions in South African Grasslands, 2nd Africa-IALE webinar on Landscape Ecology, May 29
- 2014 **Smithwick EAH**. Shifting geographies of resilience: fire, climate, and vegetation of Yellowstone National Park. Department of Botany, Rhodes University, Grahamstown, South Africa, April 7
- 2014 **Smithwick EAH**. Shifting geographies of disturbance: managing for ecological resilience in a

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- changing world. Department of Geography, Texas A & M University, College Station, TX, USA, 31 January
- 2013 **Smithwick EAH.** Department of Forest Resources and Environmental Conservation Seminar, Virginia Tech University, Blacksburg VA, USA October 7
- 2012 **Smithwick EAH.** NE Chapter of Society of Restoration Ecology, New York, USA March 23 [Keynote]
- 2010 **Smithwick EAH.** Fire in the Eastern U.S. Symposium, Penn State Environmental Law Review, The Pennsylvania State University, University Park, PA, USA April [Invited Panelist]
- 2010 **Smithwick EAH.** Department of Geology and Geography, Colloquium, University of West Virginia, Morgantown, WV, USA, April
- 2010 **Smithwick EAH.** Department of Geosciences Colloquium speaker, The Pennsylvania State University, University Park, PA, USA November
- 2010 **Smithwick EAH.** Department of Anthropology Colloquium, The Pennsylvania State University, University Park, PA, USA April
- 2009 **Smithwick EAH.** Cary Institute for Ecosystem Studies Seminar Speaker, Millbrook NY, USA, February 12
- 2009 **Smithwick EAH.** Department of Geography Seminar Series, The Pennsylvania State University, University Park, PA, USA March 20
- 2009 **Smithwick EAH.** Department of Forest Resources Seminar Series, The Pennsylvania State University, University Park, PA, USA March 20
- 2008 **Smithwick EAH.** “Unifying Concepts of Landscapes: Finding Common Ground.” Department of Biology Seminar Series, The Pennsylvania State University, University Park, PA, USA, September 30
- 2007 **Smithwick EAH.** Ecosystem Dynamics of Fire, USDA course for prescribed fire managers, sponsored by the Fish and Wildlife Service, Stevens Point, WI, USA
- 2007 **Smithwick EAH.** Seeing Through the Smoke: Understanding Fire in Yellowstone National Park. Environmental Issues in National Parks Lecture Series, public lecture and high school outreach program, Ashland University, Ashland OH, USA, April

Workshop Presentations

- 2016 **Smithwick EAH.** Visualizing forest futures. ViFF Workshop, College of Menominee Nation, November 30.
- 2015 **Smithwick, EAH.** Landscape disturbance and Buruli Ulcer. Ghana Teacher Symposium for reBUild (Research and Education on Buruli Ulcer, Inundations, and Land Disturbance), University Park, PA, USA.
- 2015 **Smithwick, EAH.** Improving the representation of mycorrhizal dynamics in terrestrial models. KNAW Academy Colloquium: Climate models revisited: the biogeochemical consequences of mycorrhizal dynamics, Amsterdam, The Netherlands, 8-10 April [Invited]
- 2015 **Smithwick EAH.** “Flipping the switch: ecological perspectives on resilience” presented at Santa Fe Institute Workshop: Reinventing the Grid: Designing Resilient, Adaptive and Creative Power Systems, Santa Fe Institute, Santa Fe, NM, USA, 13-17 April [Invited]
- 2014 **Richard, T, Jacobson M, Smithwick EAH.** Energy security and human development: Pathways to Sustainability. Global Sustainable Bioenergy and LACAf, Kruger National Park, April 1 [Invited]
- 2014 **Smithwick, EAH.** What is the pace of changes in disturbance regimes and consequences for biogeochemical processes and ecosystem function? NOVUS Workshop: Fort Collins CO, USA 8 September [Invited]
- 2013 **Smithwick EAH** and **Kemanian A.** Global Sustainable Bioenergy and LACAf workshop, Itatiba/Sao Paulo, Brazil, November 12-14 [Invited]

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- 2012 **Smithwick EAH**. Nitrogen cycling in Yellowstone National Park. PROBE Workshop. Paleo Reconstructions of Biogeochemical Environments. Manhattan, Kansas, USA, April
- 2012 **Smithwick EAH**, *Naithani KJ, and *Baldwin DC. Incorporation of disturbance and seasonality in regional terrestrial carbon flux upscaling. The ChEAS 2012 Meeting, "Observing and simulating carbon cycle impacts of forest management and climate variability in heterogeneous landscapes", Kemp Natural Resources Station, Woodruff, WI, USA, 27 June
- 2012 **Smithwick, EAH**. Representation of roots/root processes in models: from ecosystem-scales to GCM DOE- funded workshop, Scaling Root Processes: Global Impacts, Washington DC March 7-9 [Invited]

PROFESSIONAL CONFERENCE PRESENTATIONS

*indicates Smithwick advisee or post-doc

Presenter name is italicized

- 2017 **Smithwick EAH**. Dreaming about the future: integrating traditional and technological visualizations about future forests. Resilience 2017, Stockholm, Sweden, 22 August [Oral Presentation, Accepted]
- 2017 *Peeler, J and **Smithwick EAH**. Exploring invisibility with species distribution modeling: how does fire promote cheatgrass invasion within lower montane forests? Ecological Society of America Annual Meeting, Portland OR, USA, 10 August [Oral Presentation, Accepted]
- 2017 *Hedberg II RJ*, **Smithwick EAH**, White C. A soil health approach to phosphorus cycling and soil fertility resilience in a Mid-Atlantic local food system initiative. Ecological Society of America Annual Meeting, Portland OR, USA, 7 August [Oral Presentation, Accepted]
- 2017 *Horn KJ*, Thomas RQ, Pardo LH, Clark CM, Fenn ME, Larence GB, Perakis SS, **Smithwick EAH**, Baldwin D, Braun S, Nardin A, Perry CH, Phelan JN, Schaberg PG, St. Clair SB, Warby R, Watmough S. Continental scale impact of concurrent atmospheric sulfur and nitrogen deposition on individual tree species Ecological Society of America Annual Meeting, Portland OR, USA, 10 August [Oral Presentation, Accepted]
- 2017 **Smithwick EAH**. World on fire: using models to forecast ecosystem state change from human-climate-fire interactions. Ecological Society of America Annual Meeting, Portland OR, USA, 10 August [Oral Presentation, Invited]
- 2017 **Smithwick EAH** and Klippel A. Visualizing forest futures under climate uncertainty by integrating multiple ways of knowing. Exploring visualization tools for communicating Natural Resource Management Information, U.S. Forest Service, Portland OR, U.S.A. [Online Oral Presentation, Invited], 19 April
- 2017 **Smithwick, EAH**, Caldwell C, Klippel A, Scheller RM, Tuana N, Bird R, Keller K, Lucash M, Nicholas R. Visualizing Forest Futures under Climate Uncertainty by Integrating Multiple Ways of Knowing, American Association of Geographers Annual Meeting, Boston, MA, USA, 7 April [Oral Presentation, Invited]
- 2017 *Peeler J, **Smithwick EAH**. Predicting spread of cheatgrass (*Bromus tectorum*) on a landscape scale in Shoshone National Forest, WY. American Association of Geographers Annual Meeting, Boston, MA, USA, 7 April [Oral Presentation, Accepted]
- 2016 *Klippel A*, Simpson M, Keller K, **Smithwick EAH**, Wallgrun JO, Garner G, Huang J, Oprean D, Bansal S. iVR for Climate Change Visualizations. Connecting Cognitive Science and Climate Science, British Computer Society, London, England, 10-11 November [Oral Presentation, Accepted]

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- 2016 **Smithwick EAH**, *Baldwin DC, *Naithani KJ. Quantifying spatial patterns in grassland response to nutrient additions.” Savanna Science Network Meeting, Kruger National Park, Skukuza, South Africa, 15 March [Oral Presentation, Accepted]
- 2016 *Naithani KJ*, Konzelman C, Tschakert P, and **Smithwick EAH**. Exploring the Buruli Ulcer Incidence across a socio-ecological landscape in Ghana. American Geophysical Union annual meeting, San Francisco, CA, USA, 12-16 December. [Poster, Accepted]
- 2016 *Konzelman C*, *Wu J, Tschakert P, **Smithwick EAH**, and *Naithani KJ. Exploring the Buruli Ulcer Incidence in Ghana in Response to Landscape Disturbance, Climate, and Social Factors. Arkansas Water Resources Center Annual Water Conference, Fayetteville AK, USA, 26 July. [Poster, Accepted]
- 2015 **Smithwick EAH**, *Baldwin DC, Pardo LH, Thomas RQ, Horn KT, Lawrence GB, Bailey, DW, Brau S, Clar CM, Fenn M, Nordin A, Perakis SS, Perry CH, Phelan JN, Schaberg PG, St.Clair S, Warby R, Watmough S. Linking plants and soils to understand ecosystem thresholds in response to N deposition at a continental level. Ecological Society of America Annual Meeting, Baltimore MD, USA, 13 August [Invited, symposium]
- 2015 **Baldwin DC*, Lin H, Manfred S, **Smithwick EAH**. Downscaling satellite data for predicting catchment-scale root zone soil moisture with ground-based sensors and an ensemble Kalman filter. American Geophysical Union, San Francisco, CA, USA, December [Oral Presentation, Accepted]
- 2015 **Baldwin DC*, Lin H, Manfred S, **Smithwick EAH**. Mapping high resolution catchment-scale root zone soil moisture content with ground-based sensor and satellite data. Soil Science Society of America Annual Meeting Minneapolis MN, USA November [Oral Presentation, Accepted]
- 2015 **Wu J*, Tschakert P, Kluste E, Ferring D, Ricciardi V, Hausermann H, Oppong J, **Smithwick EAH**. Land cover and Buruli ulcer disease in southwest Ghana. American Association of Geographers Annual Meeting, Chicago, IL, USA, April [Oral Presentation, Accepted]
- 2015 **Taber E*, Smithwick EAH. Do protected areas influence malaria prevalence in sub-Saharan Africa? American Association of Geographers Annual meeting, Chicago IL, USA, April [Oral Presentation, Accepted]
- 2015 **Naithani KJ*, Davis K, Keller K, **Smithwick EAH**. Incorporation of landscape disturbance in probabilistic upscaling of CO₂ fluxes and associated uncertainties. Ecological Society of America Annual Meeting, Baltimore MD, USA 15 August [Oral Presentation, Accepted]
- 2015 **Baldwin DC*, *Aaron D, **Smithwick EAH**. How regional patterns of soil moisture are correlated with inter-annual climate variability. American Association of Geographers Annual meeting, Chicago IL, USA, April [Oral Presentation, Accepted]
- 2015 **Davis E*, Kemanian A, **Smithwick EAH**. Ecological Society of America Annual Meeting, Baltimore MD, USA, 13 August [Oral Presentation, Accepted]
- 2015 *Moon JB*, Wardrop DH, *Naithani KJ, Fennessy MS, **Smithwick EAH**. Effects of human-induced stressors on microbial community landscapes in forested headwater wetlands: are their clear links to process? Ecological Society of America Annual Meeting, Baltimore MD, USA 13 August [Oral Presentation, Accepted]
- 2015 **Averill K*, Mortensen D, **Smithwick EAH**. Influence of white-tailed deer and forest fragmentation on invasive introduced plants. Ecological Society of America Annual Meeting, Baltimore MD, USA 13 August [Oral Presentation, Accepted]
- 2015 **Naithani KJ*, Kennedy RE, Davis KJ, Keller D, Baldwin D, Masek J, Xiao J, **Smithwick EAH**. Understanding and quantifying uncertainties in upscaling CO₂ fluxes and its implications for carbon management. NACP PI Meeting. Washington DC, USA, 27 January, [Oral Presentation, Invited, Plenary talk]
- 2014 **Naithani KJ*, Kennedy RE, Davis KJ, Keller D, *Baldwin D, Masek J, **Smithwick EAH**. Incorporation of landscape disturbance in probabilistic upscaling of CO₂ fluxes and associated

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- uncertainties. Ecological Society of America Annual Meeting, Sacramento CA, USA, 10-15 August [Oral Presentation, Accepted]
- 2014 **Smithwick EAH**, *Baldwin DC, Horn KJ, Pardo LH, Thomas RQ. Integrating plant responses with soil chemistry at a continental scale, North American Deposition Program: The global connection of air and water, Indianapolis, IN, USA, 21-24 October [Oral Presentation, Accepted]
- 2014 *Baldwin DC and **Smithwick EAH**. Improving estimates of root-zone soil water content using soil physical properties and remotely sensed soil moisture, American Association of Geographers Annual Meeting, Tallahassee FL, USA, 9 April [Oral Presentation, Accepted]
- 2013 *Baldwin DC, Miller D, Singha K, Davis KJ, and **Smithwick EAH**. Improving estimates of root-zone soil water content using soil hydrologic properties and remotely sensed soil moisture. American Geophysical Union Annual Meeting, San Francisco CA, USA, December [Oral Presentation, Accepted]
- 2013 **Smithwick EAH**, Kennedy R, Naithani K, Davis K, Keller K, Parker L, MacEachren A. Influence of landscape disturbance patterns on modeled carbon fluxes and associated uncertainty. American Geophysical Union Annual Meeting, San Francisco CA, USA, December [Oral Presentation, Accepted]
- 2013 *Naithani KJ, *Baldwin DC, **Smithwick EAH**, Davis KJ, Keller K, Kennedy RE, and Masek JG. Incorporation of disturbance and seasonality in terrestrial carbon flux upscaling. Postdoctoral Research Exhibition, The Pennsylvania State University, University Park, PA, USA, 12 September [Poster, Accepted]
- 2013 *Naithani KJ, Davis K, Keller K, **Smithwick EAH**. Comparison of three probabilistic approaches to upscale CO₂ fluxes and associated uncertainties. American Geophysical Union Annual Meeting, San Francisco CA, USA, December [Oral Presentation, Accepted]
- 2013 *Naithani KJ, *Baldwin DC, **Smithwick EAH**, Davis KJ, Keller K, Kennedy RE, and Masek JG. Incorporation of disturbance and seasonality in terrestrial carbon flux upscaling. CarbonEARTH Conference, The Pennsylvania State University, University Park, PA, USA, 23 February [Poster, Accepted]
- 2013 *Wilberding S and **Smithwick EAH**. Modeling municipal level green infrastructure runoff mitigation using EPA SUSTAIN. Ecological Society of America Annual Meeting, Minneapolis, MN, USA, 7 August [Oral Presentation, Accepted]
- 2013 **Smithwick EAH**, *Crisfield EA. Bridging paleo- and neo-perspectives in conservation management: a tale of two mountain landscapes. Ecological Society of America Annual Meeting, Minneapolis, MN, USA, 6 August [Oral Presentation, Invited]
- 2013 **Smithwick EAH**, *Naithani KJ, Davis KJ, Kennedy RE, Bianchetti R., Parker L, *Baldwin DC, Keller K, Masek JG. Incorporating disturbance and associated uncertainty into diagnostic terrestrial carbon flux upscaling. 2013 NASA Terrestrial Ecology Science Team Meeting, La Jolla, California, USA April 30-May 2 [Poster, Accepted]
- 2013 *Naithani KJ, *Baldwin DC, **Smithwick EAH**, Davis KJ, Keller K, Kennedy RE, and Masek JG. Incorporation of disturbance and seasonality in terrestrial carbon flux upscaling. The 4th NACP All-Investigators Meeting, Albuquerque, NM, USA. 4-7 February [Poster, Accepted]
- 2012 *Crisfield EA and **Smithwick EAH**. Predicting Fire-Climate Feedbacks and Changing Forest Composition in the Appalachian Mountains, U.S.A. In Symposium entitled Forest Regeneration and Climate Change, organized by M Kaye and F Valladares, EcoSummit, Columbus, Ohio, USA, 1-5 October [Oral Presentation, Accepted]
- 2012 *Naithani KJ, *Baldwin DC, **Smithwick EAH**, Davis KJ, Keller K, Kennedy RE, and Masek JG. Incorporation of disturbance and seasonality in terrestrial carbon flux upscaling. American Geophysical Union Fall Meeting, San Francisco, California, USA, December [Oral Presentation, Accepted]

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- 2012 **McCormack ML*, Adams TS, **Smithwick EAH**, and Eissenstat DM. Fine Root Turnover: A Story of Root Production and Root Phenology. American Geophysical Union Fall Meeting, San Francisco, California, USA, December [Oral Presentation, Accepted]
- 2012 **Hanson, S* and **Smithwick EAH**. Psidium Guajava: Spatial Distribution of Invasive Guava along Roadways and Trail Ways within the Dwesa-Cwebe Nature Reserve. Ecological Society of America Annual Meeting, Portland, Oregon, USA, 5-10 August [Poster, Accepted]
- 2012 **Bulick SM*, **Smithwick EAH**, and Crane RG. Scientific Engagement within Informal and Transformative Learning Environments in a Global Context. Ecological Society of America Annual Meeting, Portland, Oregon, USA, 5-10 August [Poster, Accepted]
- 2012 **McCormack ML*, **Crisfield EA*, Raczka B, Pritchard SG, Eissenstat DM, and **Smithwick EAH**. Fine Root Lifespan and Turnover at Ecosystem and Landscape Scales: Sensitivity of Four Ecological Models and New Strategies for Model Incorporation. Ecological Society of America Annual Meeting, Portland, Oregon, USA, 5-10 August [Oral Presentation, Accepted]
- 2012 **Naithani KJ*, **Smithwick EAH**, Davis KJ, Keller K, Kennedy RE, and Masek JG. Incorporation of Disturbance and Seasonality in Regional Terrestrial Carbon Flux Upscaling. ForestSAT, Oregon State University, Corvallis, Oregon, USA, 11-14 September [Oral Presentation, Accepted]
- 2012 **Naithani KJ*, **Smithwick EAH**, Davis, KJ, Keller K, Kennedy RE, and Masek JG. Incorporation of Disturbance in Regional Terrestrial Carbon Flux Upscaling. Ecological Society of America Meeting, Portland, Oregon, USA, 5-10 August [Poster, Accepted]
- 2012 *Clay N*, **Smithwick EAH**, Tschakert P, Hausermann H, Ferring D. Landscape Disturbance and disease emergence: thresholds of spatial and temporal interaction. Annual Meeting of the US-Chapter of the International Association of Landscape Ecology, Newport RI, USA, 9 April [Oral Presentation, Accepted]
- 2012 **Smithwick EAH**, Turner MG, Westerling AL, Romme WH, Ryan MG. Modeling carbon tipping points in the Greater Yellowstone Ecosystem: Lessons Learned. Annual Meeting of the US-Chapter of the International Association of Landscape Ecology, Newport RI, USA, 11 April [Oral Presentation, Accepted]
- 2012 **Crisfield EA*, **Smithwick EAH**. Integrating a DGVM (MC1) with a statistical habitat suitability model (DISTRIB) to explore feedbacks between fire, climate change, and tree species composition. Annual Meeting of the US-Chapter of the International Association of Landscape Ecology, Newport RI, USA, 11 April [Oral Presentation, Accepted]
- 2012 **Crisfield EA*, **Smithwick EAH**. Topographic Complexity in the Appalachian Mountains (U.S.) with Implications for Biodiversity Conservation and Climate Change Adaptation. Annual Meeting of the US-Chapter of the International Association of Landscape Ecology, Newport RI, USA, 9 April [Oral Presentation, Accepted]
- 2011 *Hagarty J*, Voegborlo R, **Smithwick EAH**, and Singha K. Land Use, Water Quality, and Incidence of Buruli Ulcer in Gold-Mining Regions of Ghana. American Geophysical Union Fall Meeting, San Francisco, California, USA, 7 December [Oral Presentation, Accepted]
- 2011 *Keane RE*, Loehman RA, **Smithwick EAH**. Climate Change Effects on Multiple Disturbance Interactions: Wildland Fire, Mountain Pine Beetles, and Blister Rust Simulations on a Yellowstone National Park Landscape. American Geophysical Union Fall Meeting, San Francisco, California, USA, 7 December [Oral Presentation, Accepted]
- 2011 **Smithwick EAH**. The Cultivation and Conservation of Biological Diversity, Part I. Panelist. American Association of Geographers Annual Meeting, Seattle, Washington, USA, April [Oral Presentation, Accepted]
- 2011 **Smithwick EAH**. Quantifying Environmental and Landscape Drivers of Disease Emergence: Buruli Ulcer in Ghana. American Association of Geographers Annual Meeting, Seattle, Washington, USA, April [Oral Presentation, Accepted]

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- 2011 **Smithwick EAH**, Hagerty J, Voegborlo R, Singha K. Coupled Socio-Ecological Drivers of Carbon Storage in South African Coastal Lowland Landscapes. American Geophysical Union Fall Meeting, San Francisco, California, USA, 9 December [Oral Presentation, Accepted]
- 2011 **Smithwick EAH**, *Naithani KJ, Davis KJ, Keller K, Kennedy RE, Masek JG. Influence of Disturbance and Seasonality on Regional Carbon Flux Upscaling. NASA Carbon Cycle & Ecosystems Joint Workshop, Alexandria, Virginia, USA 3-7 October [Poster, Accepted]
- 2011 **Smithwick EAH**, *Naithani KJ, Balsler TC, Romme WH, and Turner MG. Fine-Scale Spatial Distribution of Microbial Communities and Soil Nitrogen Cycling Following Wildfire. 1st Conference on Spatial Statistics, Enschede, The Netherlands, 23-25 March, [Oral Presentation, Accepted]
- 2010 *Naithani KJ and **Smithwick EAH**. A Boolean Network Model to Test Ecosystem Resilience under Elevated Nitrogen Deposition and Drought. International Forestry and Environment Symposium, Nugegoda, Sri Lanka, 17-26 November [Oral Presentation, Accepted]
- 2010 **Smithwick EAH**, Westerling AL, Turner MG, Romme WH, and Ryan MG. Fire, Vegetation, Climate Interactions in the Greater Yellowstone Ecosystem: Tipping Points and Landscape Vulnerability. American Geophysical Union Fall Meeting, San Francisco, California, USA December [Oral Presentation, Accepted]
- 2010 Moon JB, Wardrop DH, and **Smithwick EAH**. Impacts of Surrounding Land Cover on Headwater Wetland Edaphic Habitat Types and Their Associated Microbial Communities. American Geophysical Union Fall Meeting, San Francisco, California, USA, December [Oral Presentation, Accepted]
- 2010 Ryan MG, Kashian DM, Romme WH, Turner MG, **Smithwick EAH**, and Tinker DB. Fire and Carbon Cycling for the Yellowstone National Park Landscape. American Geophysical Union Fall Meeting, San Francisco, California, USA, December [Oral Presentation, Accepted]
- 2010 **Smithwick EAH**, Westerling AL, Turner MG, Romme WH, and Ryan MG. Vulnerability of Landscape C Fluxes to Future Climate and Fire in the Greater Yellowstone Ecosystem. The 10th Biennial Scientific Conference on the Greater Yellowstone Ecosystem: Questioning Greater Yellowstone's Future: Climate, Land Use, and Invasive Species, Mammoth Hot Springs Hotel, Yellowstone National Park, Wyoming, USA 11 October [Oral Presentation, Accepted]
- 2010 Westerling AL and **Smithwick EAH**. Fire Regime Effects of Anthropogenic Changes in Rocky Mountains Climate and Hydrology. The 10th Biennial Scientific Conference on the Greater Yellowstone Ecosystem: Questioning Greater Yellowstone's Future: Climate, Land Use, and Invasive Species, Mammoth Hot Springs Hotel, Yellowstone National Park, Wyoming, USA, 11 October [Oral Presentation, Accepted]
- 2010 *Naithani KJ and **Smithwick EAH**. Nitrogen Dynamics: A Graph-Theoretic Approach. Ecological Society of America Annual Meeting, Pittsburgh, Pennsylvania, USA, 2-8 August [Oral Presentation, Accepted]
- 2010 Israel A and **Smithwick EAH**. Teaching General Education Ecological Science: The Importance and Impact of Experiential Activities. Ecological Society of America Annual Meeting, Pittsburgh, Pennsylvania, USA, 2-8 August [Oral Presentation, Accepted]
- 2010 *McCormack ML, Eissenstat D, and **Smithwick EAH**. Estimating Current and Future Fine Root Turnover Rates at Landscape Scales. Ecological Society of America Annual Meeting, Pittsburgh, Pennsylvania, USA, 2-8 August [Poster, Accepted]
- 2010 **Smithwick EAH**, Keane R, McKenzie D, Loehman R, Simard M, Miller C, Falk D, and Westerling, A. Climate Impacts on Multiple Disturbance Interactions, Yellowstone National Park: Consequences for Resilience. Association of American Geographers Annual Meeting, Washington, D.C., April [Oral Presentation, Accepted]

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- 2010 **Crisfield EA* and **Smithwick EAH**. Predicting the Response of Vegetation in New England to Projected Future Climate Change. Association of American Geographers Annual Meeting, Washington, D.C., USA, April [Oral Presentation, Accepted]
- 2009 **Smithwick EAH** and Harmon, ME. Interaction of Fire Regimes and Post-Fire Regeneration on Carbon Storage in the Pacific Northwest. Association for Fire Ecology 4th International Fire Congress, Savannah, Georgia, USA, 30 November [Oral Presentation, Accepted]
- 2009 *Westerling AL*, **Smithwick EAH**, Turner MG, Romme WH, Das T, and Lubetkin K. Fire Regime and Ecosystem Effects of Climate-Driven Changes in Rocky Mountains Hydrology. American Geophysical Union Fall Meeting, San Francisco, California, December [Oral Presentation, Accepted]
- 2009 **Smithwick EAH**, Keane R, McKenzie D, Simard M, Loehman R, Miller C, Kashian D, and Falk D. Climate Impacts on Multiple Disturbance Interactions, Yellowstone National Park: Consequences for Resilience. Ecological Society of America Annual Meeting, Albuquerque, New Mexico, USA, 6 August [Oral Presentation, Accepted]
- 2009 **Crisfield, EA* and **Smithwick EAH**. Topographic Complexity Governs Cumulative Area-Elevation Gradients in Appalachian Landscapes. Ecological Society of America Annual Meeting, Albuquerque, New Mexico, USA, 6 August [Oral Presentation, Accepted]
- 2009 **Smithwick EAH**, Balsler TC, Zhu J, and Turner MG. Spatial Distribution of Microbial Communities and Nitrogen Mineralization in Two Forest Communities Following Fire in the Greater Yellowstone Ecosystem. International Association of Landscape Ecology - US Chapter Annual Meeting, Snowbird, Utah, USA, April [Oral Presentation, Accepted]
- 2009 **Oyler JW*, **Smithwick EAH**, and Mack MC. The Effect of Burn Severity on Short-Term Post-Fire Boreal Vegetation Recovery in Interior Alaska. Association of American Geographers Annual Meeting, Las Vegas, Nevada, USA, March [Oral Presentation, Accepted]
- 2009 **Smithwick EAH**, Balsler TC, Zhu J, and Turner MG. Spatial Distribution of Microbial Communities and Nitrogen Mineralization in Two Forest Communities Following Fire in the Greater Yellowstone Ecosystem. International Association of Landscape Ecology - US Chapter Annual Meeting, Snowbird, Utah, USA, April, [Oral Presentation, Accepted]
- 2008 **Oyler JW*, **Smithwick EAH**, and Mack MC. The Effect of Burn Severity on Short-Term Post-Fire Boreal Vegetation Recovery in Interior Alaska. American Geophysical Union Fall Meeting 2008, San Francisco, California, December [Oral Presentation, Accepted]
- 2008 **Smithwick EAH**, Ryan MG, Kashian DM, Romme WH, Tinker DB, and Turner MG. Post-Fire Spatial and Temporal Complexity in Yellowstone: What Does It Mean for Climate Change Forecasts? International Association of Wildland Fire, The '88 Fires: Yellowstone and Beyond, Jackson Hole, Wyoming, USA, September 22-27 [Oral Presentation, Accepted]
- 2008 **Smithwick EAH**, Kashian DM, Ryan MG, and Turner MG. Broad-Scale Patterns of Ecosystem Nitrogen Stocks and Soil Nitrogen Availability in Post-Fire Lodgepole Pine Ecosystems. Ecological Society of America Annual Meeting, Milwaukee, Wisconsin, USA, August [Oral Presentation, Accepted]
- 2008 **Oyler JW*, **Smithwick EAH** and Mack MC. The Effect of Wildfire Severity on Post-Fire Boreal Vegetation Productivity in Interior Alaska. United States Regional Association of the International Association for Landscape Ecology Meeting, Madison, Wisconsin, USA, April
- 2008 **Oyler JW*, **Smithwick EAH**, and Mack MC. The Effect of Wildfire Severity on Post-Fire Boreal Vegetation Productivity in Interior Alaska. No Boundaries Graduate Conference, University Park, Pennsylvania, March, [Oral Presentation, Accepted]
- 2007 **Smithwick EAH**, Ryan MG, Kashian DM, *Romme WH*, Tinker DB, and Turner MG. Modeling the Effects of Fire and Climate Change on Carbon and Nitrogen Storage in Lodgepole Pine. Joint Fire Sciences Program, Yellowstone National Park Managers Conference, June, [Oral Presentation, Accepted]

Erica A.H. Smithwick - Curriculum Vita

- 2006 **Smithwick EAH**, Ryan M, Kashian DM, Romme WH, Tinker DB, and Turner MG. Modeling the Effects of Changing Climate and Fire Regimes on Productivity, Carbon Storage and Nitrogen Fluxes in Lodgepole Pine Forest Stands.” 3rd International Fire Ecology and Management Congress, San Diego, CA, USA, November [Oral Presentation, Accepted]
- 2005 **Smithwick EAH**. Understanding Post-Fire Spatial and Temporal Heterogeneity in Microbial Community Composition Using a Landscape Approach. Ecological Society of America Annual Meeting, Montreal, Canada, August [Oral Presentation, Accepted]
- 2004 **Smithwick EAH**, Mack MC, Turner MG, Chapin III FS, Zhu J, and Balser TC. Spatial Heterogeneity of Ecosystem Processes after Severe Fire in a Black Spruce (*P. Mariana*) Forest, Alaska (USA). Ecological Society of America Annual Meeting, Portland, OR, USA, August [Oral Presentation, Accepted]
- 2003 **Smithwick EAH**, Turner MG, Metzger KL, and Balser TC. Variation in Gross Nitrogen Mineralization and Microbial Communities along a Chronosequence of Lodgepole Pine (*Pinus contorta*) Stands, Yellowstone National Park. American Geophysical Union Fall Meeting, San Francisco, CA, USA, December [Oral Presentation, Accepted]

SERVICE

Department Committee

- 2015-present Geography Promotion and Tenure Committee
- 2016-17 Undergraduate Curriculum Committee
- 2015-16 Awards committee
- 2013-14 Miller Fellowship Committee
- 2011-12 Geography Faculty Search Committee (Energy Policy)
- 2011-12 Graduate Programs Committee
- 2011-12 Future Directions Working Group
- 2011-12 Undergraduate Curriculum Committee
- 2011-12 Society for Women in Geography Fellowship Committee
- 2010-11 Geography Coffee Hour Colloquium, Co-organizer
- 2010-11 Miller Lecture Committee
- 2009-10 Faculty Advisory Committee, Department of Geography, Member
- 2009-10 SWG Fellowship Committee Chair
- 2009-10 Miller Lecture Committee
- 2008-09 Geography Faculty Search Committee (GIScience)
- 2008-09 Geography Graduate Admissions Committee
- 2008-09 Miller Lecture Committee
- 2007-08 Geography Graduate Admissions Committee
- 2007-08 Miller Lecture Committee

College Committee

- 2016-present Earth and Environmental Systems Institute Advisory Committee
- Fall 2015 Search Committee, Associate Dean for Educational Equity
- 2013-16 College of Earth and Mineral Sciences Faculty Advisory Committee
- Fall 2015 Organizer, EESI Earth Talks, The Next 100 Years of Conservation
- 2012-14 Geosciences Faculty Search Committee (Hydrogeology)
- 2011-12 EESI Frontiers in Earth Systems Ecology Annual Lecture Committee
- 2010-11 EESI Earth Talks Lecture Series Committee, Member “Embracing Change: Resilience and Adaptation in Turbulent Times”
- 2010-11 Ad Hoc, EMS Committee on Research Infrastructure, Member

Erica A.H. Smithwick - Curriculum Vita

- 2009 EMEX Geography Faculty Representative
2008-09 EESI Earth Talks Lecture Series Committee, Member “Quenching the Thirst: Water Resources for a Changing Planet”

Campus Committee

- 2017–present Member, Strategic Steering Committee, Human Dimensions of Natural Resources and Environment (HNDRE)
2017-present Graduate Faculty, HNDRE
2014-present Member, Intercollege Graduate Degree Program in Ecology, Candidacy Committee
2014-present Steering Committee, Ecology Institute, The Pennsylvania State University
2009-present Intercollege Graduate Degree Program in Ecology, Candidacy Committee
2014-15 Member, Deployable Energy and Environmental Sustainability Laboratory Committee
2012-14 Chair, Intercollege Graduate Degree Program in Ecology, Candidacy Committee
2012-13 LIME (Laboratory for Isotopes and Metals in the Environment) Advisory Board

University Committee

- 2016-present Member, Stewarding Resources Subcommittee for University Strategic Plan
2016-present EMS Senate Council Representative to University Faculty Senate
2016-present Vice-chair, Benefits Subcommittee, University Faculty Senate
2010-present Faculty Senator, University Faculty Senate
2015-16 Member, Benefits Subcommittee, University Faculty Senate
2013-14 Presidential Task Force on University Child Care member
2013-14 Vice Chair, Undergraduate Education Subcommittee
2013-14 Chair, Undergraduate Education Subcommittee on Academic Standards
2010-14 Member, Undergraduate Education Subcommittee of the University Faculty Senate
2010-14 Member, Undergraduate Education Subcommittee on Academic Standards
2009-10 Ad Hoc, Global Community Engagement GEN Taskforce, Member, Office of Global Programs

Graduate Advisors

Ronald Wakimoto, (M.S. Advisor), University of Montana
Mark Harmon and Warren Cohen (Ph.D. co-major advisors), Oregon State University
Monica G. Turner (postdoctoral advisor), University of Wisconsin

Graduate Advisees

Current

Stacey Olsen, MS/PhD (Geography), 2017-present
Jamie Peeler, PhD (Geography), 2017-present

Past

Ethan Davis, PhD (Ecology). “The Potential Impact of Food and Energy Choices on Global Land Use Patterns and Greenhouse Gas Emissions.” Summer 2017
Jamie Peeler, MS (Geography). “Exploring invisibility with species distribution modeling: how does fire promote cheatgrass invasion within lower montane forests?” Summer 2017
Doug Baldwin PhD (Geography). “Influence of climate change and disturbance on coupled water-carbon fluxes and variability at landscape scales,” Spring 2016
Eric Taber, MS (Geography), Spring 2015

Erica A.H. Smithwick - Curriculum Vita

Kristine Averill, PhD (Ecology), Co-Advisor with Dave Mortensen (Crop and Soil Science) “The Roles of Herbivore Selectivity and Landscape Context in Exotic Plant Invasion”, June 2014

Elizabeth Crisfield, PhD (Geography). “Factors and Conditions Affecting Climate Adaptation in Appalachian Forests,” Fall 2012

Luke McCormack, PhD (Ecology/Dual-Title Graduate Degree in *Biogeochemistry*), Co-Advisor with David Eissenstat (Ecosystem Science and Management). “Measuring and Modeling Fine Root Dynamics in Temperate Forests.” Fall 2012

Jared Oyler, MS (Geography). “The Effect of Burn Severity on Short-Term Post-Fire Boreal Vegetation Recovery in Interior Alaska,” May 2009

Michelle Williams-Tober, MS (Ecology). “Relative Nitrogen Availability along a Condition Gradient in Headwater Wetlands in the Upper Juniata Watershed, Pennsylvania,” June 2009

Post-doctoral

Jianyong Wu, 2012 – 2013, current position: Researcher, Environmental Protection Agency

Kusum Naithani, 2010-2014, current position: Assistant Professor, University of Arkansas