

Curriculum Vita

Derek Pierson, Post-Doctoral Associate

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RESEARCH INTERESTS

Carbon and nutrient cycling in natural and human-disturbed ecosystems, with on-going emphasis on processes of soil carbon accumulation and stabilization, post-wildfire recovery of soil and streamwater, improvement of earth system models, and the forecast and management of climate change effects on natural environments.

EDUCATION

Ph.D. Oregon State University, Soil Science, 2020
M.S. Colorado State University, Forest Science, 2013
B.S. University of Idaho, Microbiology, 2008

APPOINTMENTS

2020-Current Post-Doctoral Associate, Idaho State University, Boise, ID.

2016-2020 Graduate Research/Teaching Assistant
Department of Crop and Soil Science, Oregon State University, Corvallis, OR.

2008-2016 Laboratory Manager, Chemist. Biogeochemistry Laboratory, Air, Water and Aquatic Environments Program, USFS Rocky Mountain Research Station, Fort Collins, CO.

2010-2013 Federal Pathways Program Graduate Student, USFS, Colorado State University, Fort Collins, CO.

2003-2008 Undergraduate Research Assistant, USFS Rocky Mountain Research Station, Moscow, ID.

PUBLICATIONS

Pierson, D.N., Evans, L., Kayhani, K., Bowden, R.D., Nadelhoffer, K., Simpson, M., Lajtha, K. 2021. Roots limit the mineral stabilization of soil carbon, outweighing control from litter quality and quantity. *Biogeochemistry Letters*, In Review.
Pierson, D.N., Peter-Contesse, H., Bowden, R.D., et al. 2021. Resistance of soil carbon pools to alterations of litter inputs. *Frontiers in Environmental Science*, In Review.
Billings, S.A., Lajtha, K., Malhotra, A, ...Pierson, D.N., et al. 2021. Soil organic carbon is not just for soil scientists: Measurement recommendations for diverse practitioners. *Ecological Applications* , e2290.
Helbling, E., Pierson, D., Lajtha, K. (2021). Sources of soil carbon loss during soil density fractionation: Laboratory loss or seasonally variable soluble pools?. *Geoderma*, 382, 114776.
Wieder, W. R., Pierson, D., Earl, S., Lajtha, K., Baer, S., Ballantyne, F., ... & Fraterrigo, J. (2020). SoDaH: the SOils DAta Harmonization database, an open-source synthesis of soil data from research networks, version 1.0. *Earth System Science Data Discussions*, 1-19.

- Evans, L. R., Pierson, D., & Lajtha, K. 2020. Dissolved organic carbon production and flux under long-term litter manipulations in a Pacific Northwest old-growth forest. *Biogeochemistry*, 149(1), 75-86.
- Pierson, D. N., Robichaud, P. R., Rhoades, C. C., & Brown, R. E. 2019. Soil carbon and nitrogen eroded after severe wildfire and erosion mitigation treatments. *International Journal of Wildland Fire*, 28(10), 814-821.
- Rhoades, C.C., Chow, A.T., Covino, T.P., Feghel, T.S., Pierson, D.N. and Rhea, A.E. 2018. The Legacy of a Severe Wildfire on Stream Nitrogen and Carbon in Headwater Catchments. *Ecosystems*, pp.1-15.
- Chow, A. T., Tsai, K. P., Feghel, T. S., Pierson, D. N., & Rhoades, C. C. 2019. Lasting Effects of Wildfire on Disinfection By-Product Formation in Forest Catchments. *Journal of Environmental Quality*, 48(6), 1826-1834.
- Rhoades, C.C., Minatre, K.L., Pierson, D.N., Feghel, T.S., Cotrufo, M.F. and Kelly, E.F., 2017. Examining the potential of forest residue-based amendments for post-wildfire rehabilitation in Colorado, USA. *Scientifica*, 2017.
- Rhea, A., Covino, T., Pierson, D.N., Feghel, T., Rhoades, C.C. A Tracer Approach to Quantify Post-Wildfire Stream Nitrogen Retention and Transport. Manuscript in preparation for *Journal of Hydrology* (2017).
- Pierson, D.N. Soil Organic Matter Priming Introductory Article. Reference Module in Earth Systems and Environmental Sciences, 2017

PRESENTATION ABSTRACTS

- Simpson MJ, Lajtha K, Chiu R, Pierson D, Anaraki MT, Ye R. Molecular biogeochemistry of soil organic matter after twenty years of litter additions and exclusions in a coniferous old-growth forest. InAGU Fall Meeting 2020 2020 Dec 15. AGU.
- Pierson D, Bowden R, Frey SD, Nadelhoffer KJ, Fekete I, Kotrocó Z, Simpson MJ, Lajtha K. Soil carbon, where does it come from? Where does it go? Insights from the long-term DIRT network. AGU Fall Meeting 2019, 2019 Dec 11. AGU.
- Pierson D, Kayhani K, Evans L, Tfaily MM, Simpson MJ, Lajtha K. Microbes help and hinder the stabilization of soil C. AGU Fall Meeting 2019, 2019 Dec 12. AGU.
- Georgiou K, Malhotra A, Ennis J, Grandy S, Hartman MD, Moore J, Pierson D, Sulman B, Jackson RB, Wieder WR. Leveraging model-generated hypotheses and cross-network observations to understand biome-to global-scale controls on soil organic matter stocks. AGU Fall Meeting 2019, 2019 Dec 10. AGU.
- Wieder WR, Earl S, Pierson D. Introducing SOils DATA Harmonization tools (SoDaH). InAGU Fall Meeting 2019 2019 Dec 10. AGU. Georgiou K, Malhotra A, Ennis J, Grandy S, Hartman MD, Moore J, Pierson D, Sulman B, Jackson RB, Wieder WR. Leveraging model-generated hypotheses and cross-network observations to understand biome-to global-scale controls on soil organic matter stocks. AGU Fall Meeting 2019, 2019 Dec 10. AGU.
- Earl S, Pierson DN, Wieder WR, Lajtha K. Wrangling carbon: Synthesizing multi-scale, multi-site observations across disparate data sets to advance models and understanding of soil carbon cycling. In2019 ESA Annual Meeting (August 11--16) 2019 Aug 13. ESA.
- Pierson, D.N., Lajtha, K., Tfaily, M., Hess, N. 2019. Twenty Years of DIRT: Detrital Influences on Soil Carbon Dynamics. Soil Science Society of America Annual Meeting 2019, San Diego, CA.
- Wieder WR, Lajtha K, Earl S, Pierson D, Brigham L. Leveraging network science to evaluate mechanisms and models of soil organic matter stabilization and change. AGU Fall Meeting Abstracts 2018 Dec.
- Rhoades C, Pierson DN, Feghel TS, Chow AT, Covino TP, Heath J. Persistent Influences of the 2002 Hayman Fire on Stream Nitrate and Dissolved Organic Carbon. In2016 AGU Fall Meeting 2016 Dec 13. AGU.

Rhoades, C.C., Chow, A.T., Pierson, D.N., Tsai, K., Feghel, T. 2016. Linking Soil Nitrogen and Carbon to Post-Wildfire Water Quality. Soil Science Society of America Annual Meeting, Phoenix, AZ.
Rhea, A., Covino, T.P., Feghel, T., Pierson, D.N. and Rhoades, C. 2016. February. A Tracer Approach to Quantify Post-Wildfire Stream Nitrogen Retention and Transport. In AGU Fall Meeting Abstracts.

RESEARCH FUNDING

Biomolecular linkages between detrital inputs and soil organic matter decomposition in temperate forests. EMSL User proposal 50417.

TEACHING EXPERIENCE & COURSE DEVELOPMENT

Soil Morphology (SOIL 466/566). Teaching assistant, course development. Oregon State University. 2018-2019.

Soil landscape analysis. (SOIL 468/568). Teaching assistant, laboratory instructor, course development. Oregon State University. 2018-2019.

Introduction to Environmental Science and Sustainability (SUS 102). Teaching assistant, Online. Oregon State University. 2017-2018.

Social Dimensions of Sustainability (SUS 450). Teaching assistant, Campus/Online. Oregon State University. 2016-2018.

STUDENTS ADVISED

Coryn Bushyhead. Undergraduate Research Priority Program. 2018-2020.

Valentin Saul. Undergraduate field and laboratory assistant. 2018-2020.

Lucas Evans. Research Experience for Undergraduates (REU) Program. 2017-2019.

Kamron Kayhani. Undergraduate field and laboratory assistant. 2016-2019.

Alexandria Stanton. Research Experience for Undergraduates (REU) Program. 2018-2019.

PROFESIONAL SERVICE & ACTIVITIES

American Geophysical Union Program Executive Committee, Biogeosciences. 2019-Present.

American Geophysical Union Program Early Career Committee, Biogeosciences. 2020-Present.

Advancing Soil Organic Matter Research: Synthesizing Multi-Scale Observations, Manipulations and Models. Member. National Center for Ecological Analysis and Synthesis (NCEAS) working group. 2017-2019.

H.J. Andrews Experimental Forest Field Day. Instructor. Hosted by the Andrews Forest Long-Term Ecological Research (LTER) Program. 2018-2019.

Faculty Review Committee. Student lead. Crop and Soil Science Department, Oregon State University. 2017.

Tanzania People and Wildlife Project. GIS Support in conjunction with the U.S. Forest Service. 2018.