

# BRENDAN M. ROGERS

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I am interested in how terrestrial ecosystems are responding to climate change and land use, how this feeds back to climate change, and how management and policy can be used for mitigation and adaptation. I primarily focus on the boreal forests and arctic tundra across Alaska, Canada, and Siberia, where climate is changing rapidly and intensifying disturbance regimes such as wildfire and pest outbreaks. I use a combination of field observations, remote sensing, and modeling techniques.

## EDUCATION

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University of California, Irvine, CA | Ph.D. in Earth System Science | March 2014

Thesis: *Toward a better understanding of boreal forest fires and their role in the climate system.*

University of California, Irvine, CA | Masters of Science in Earth System Science | October 2011

Oregon State University, Corvallis, OR | Masters of Science in Environmental Sciences | August 2009

Thesis: *Potential impacts of climate change on vegetation distributions, carbon stocks, and fire regimes in the U.S. Pacific Northwest.*

Hamilton College, Clinton, NY | Bachelors of Arts in Mathematics; minor in Biology | May 2003

## RELEVANT PROFESSIONAL EXPERIENCE

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Associate Scientist | Woodwell Climate Research Center | May 2020 - present

Assistant Scientist | Woods Hole Research Center | Apr 2016 – May 2020

Postdoctoral Fellow | Woods Hole Research Center | Apr 2014 – Apr 2016

## PUBLICATIONS

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### 2020

Walker, X., **Rogers, B. M.**, Veraverbeke, S., Johnstone, J., Baltzer, J., Barrett, K., Bourgeau-Chavez, L., Day, N. J., de Groot, W. J., Dieleman, C., Goetz, S., Hoy, E. E., Jenkins, L., Kane, E., Natali, S., Parisien, M., Potter, S., Schuur, E. A. G., Turetsky, M., Whitman, E. and Mack, M.: Fuel availability not fire weather controls boreal wildfire severity and carbon emissions, *Nature Climate Change*, in press.

Lin, X., **Rogers, B. M.**, Sweeney, C., Chevallier, F., Arshinov, M., Dlugokencky, E., Machida, T., Sasakawa, M., Tans, P. and Keppel-Aleks, G.: Siberian and temperate ecosystems shape Northern Hemisphere atmospheric CO<sub>2</sub> seasonal amplification, *PNAS*, doi:10.1073/pnas.1914135117, 2020.

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Walker, X. J., Baltzer, J. L., Bourgeau-Chavez, L., Day, N. J., Dieleman, C. M., Johnstone, J. F., Kane, E. S., **Rogers, B. M.**, Turetsky, M. R., Veraverbeke, S. and Mack, M. C.: Patterns of Ecosystem Structure and Wildfire Carbon Combustion Across Six Ecoregions of the North American Boreal Forest, *Frontiers in Forests and Global Change*, 3, doi:10.3389/ffgc.2020.00087, 2020.

Cansler, C. A., Hood, S. M., Varner, J. M., Mantgem, P. J. van, Agne, M. C., Andrus, R. A., Ayres, M. P., Ayres, B. D., Bakker, J. D., Battaglia, M. A., Bentz, B. J., Breece, C. R., Brown, J. K., Cluck, D. R., Coleman, T. W., Corace, R. G., Covington, W. W., Cram, D. S., Cronan, J. B., Crouse, J. E., Das, A. J., Davis, R. S., Dickinson, D. M., Fitzgerald, S. A., Fulé, P. Z., Ganio, L. M., Grayson, L. M., Halpern, C. B., Hanula, J. L., Harvey, B. J., Hiers, J. K., Huffman, D. W., Keifer, M., Keyser, T. L., Kobziar, L. N., Kolb, T. E., Kolden, C. A., Kopper, K. E., Kreidler, J. R., Kreye, J. K., Latimer, A. M., Lerch, A. P., Lombardero, M. J., McDaniel, V. L., McHugh, C. W., McMillin, J. D., Moghaddas, J. J., O'Brien, J. J., Perrakis, D. D. B., Peterson, D. W., Prichard, S. J., Progar, R. A., Raffa, K. F., Reinhardt, E. D., Restaino, J. C., Roccaforte, J. P., **Rogers, B. M.**, Ryan, K. C., Safford, H. D., Santoro, A. E., Shearman, T. M., Shumate, A. M., Sieg, C. H., Smith, S. L., Smith, R. J., Stephenson, N. L., Stuever, M., Stevens, J. T., Stoddard, M. T., Thies, W. G., Vaillant, N. M., Weiss, S. A., Westlind, D. J., Woolley, T. J. and Wright, M. C.: The Fire and Tree Mortality Database, for empirical modeling of individual tree mortality after fire, *Scientific Data*, 7(1), 1–14, doi:10.1038/s41597-020-0522-7, 2020.

Dieleman, C. M., **Rogers, B. M.**, Potter, S., Veraverbeke, S., Johnstone, J. F., Laflamme, J., Solvik, K., Walker, X. J., Mack, M. C. and Turetsky, M. R.: Wildfire combustion and carbon stocks in the southern Canadian boreal forest: Implications for a warming world, *Global Change Biology*, doi:10.1111/gcb.15158, 2020.

McLauchlan, K. K., Higuera, P. E., Miesel, J., **Rogers, B. M.**, Schweitzer, J., Shuman, J. K., Tepley, A. J., Varner, J. M., Veblen, T. T., Adalsteinsson, S. A., Balch, J. K., Baker, P., Batllori, E., Bigio, E., Brando, P., Cattau, M., Chipman, M. L.,

Coen, J., Crandall, R., Daniels, L., Enright, N., Gross, W. S., Harvey, B. J., Hatten, J. A., Hermann, S., Hewitt, R. E., Kobziar, L. N., Landesmann, J. B., Loranty, M. M., Maezumi, S. Y., Mearns, L., Moritz, M., Myers, J. A., Pausas, J. G., Pellegrini, A. F. A., Platt, W. J., Roozeboom, J., Safford, H., Santos, F., Scheller, R. M., Sherriff, R. L., Smith, K. G., Smith, M. D. and Watts, A. C.: Fire as a fundamental ecological process: Research advances and frontiers, *Journal of Ecology*, 108(5), 2047–2069, doi:10.1111/1365-2745.13403, 2020.

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Potter, S., Solvik, K., Erb, A., Goetz, S. J., Johnstone, J. F., Mack, M. C., Randerson, J. T., Román, M. O., Schaaf, C. L., Turetsky, M. R., Veraverbeke, S., Walker, X. J., Wang, Z., Massey, R. and **Rogers, B. M.**: Climate change decreases the cooling effect from postfire albedo in boreal North America, *Global Change Biology*, 26(3), 1592–1607, doi:10.1111/gcb.14888, 2020.

**Rogers, B. M.**, Balch, J. K., Goetz, S. J., Lehmann, C. E. R. and Turetsky, M.: Focus on changing fire regimes: interactions with climate, ecosystems, and society, *Environmental Research Letters*, 15(3), 030201, doi:10.1088/1748-9326/ab6d3a, 2020.

Duncan, B. N., Ott, L. E., Abshire, J. B., Brucker, L., Carroll, M. L., Carton, J., Comiso, J. C., Dinnat, E. P., Forbes, B. C., Gonsamo, A., Gregg, W. W., Hall, D. K., Ialongo, I., Jandt, R., Kahn, R. A., Karpechko, A., Kawa, S. R., Kato, S., Kumpula, T., Kyrölä, E., Loboda, T. V., McDonald, K. C., Montesano, P. M., Nassar, R., Neigh, C. S. R., Parkinson, C. L., Poulter, B., Pulliainen, J., Rautiainen, K., **Rogers, B. M.**, Rousseaux, C. S., Soja, A. J., Steiner, N., Tamminen, J., Taylor, P. C., Tzortziou, M. A., Virta, H., Wang, J. S., Watts, J. D., Winker, D. M. and Wu, D. L.: Space-Based Observations for Understanding Changes in the Arctic-Boreal Zone, *Reviews of Geophysics*, 58(1), e2019RG000652, doi:10.1029/2019RG000652, 2020.

## 2019

Natali, S. M., Watts, J. D., **Rogers, B. M.**, et al.: Large loss of CO<sub>2</sub> in winter observed across the northern permafrost region, *Nature Climate Change*, 1–6, doi:10.1038/s41558-019-0592-8, 2019.

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Mekonnen, Z. A., Riley, W. J., Randerson, J. T., Grant, R. F. and **Rogers, B. M.**: Expansion of high-latitude deciduous forests driven by interactions between climate warming and fire, *Nature Plants*, 1–7, doi:10.1038/s41477-019-0495-8, 2019.

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Walker, X. J., Baltzer, J. L., Cumming, S. G., Day, N. J., Ebert, C., Goetz, S., Johnstone, J. F., Potter, S., **Rogers, B. M.**, Schuur, E. A. G., Turetsky, M. R. and Mack, M. C.: Increasing wildfires threaten historic carbon sink of boreal forest soils, *Nature*, 572(7770), 520–523, doi:10.1038/s41586-019-1474-y, 2019.

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Foster, A. C., Armstrong, A. H., Shuman, J. K., Shugart, H. H., **Rogers, B. M.**, Mack, M. C., Goetz, S. J. and Ranson, K. J.: Importance of tree- and species-level interactions with wildfire, climate, and soils in interior Alaska: Implications for forest change under a warming climate, *Ecological Modelling*, 409, 108765, doi:10.1016/j.ecolmodel.2019.108765, 2019.

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Boyd, M. A., Berner, L. T., Doak, P., Goetz, S. J., **Rogers, B. M.**, Wagner, D., Walker, X. J. and Mack, M. C.: Impacts of climate and insect herbivory on productivity and physiology of trembling aspen (*Populus tremuloides*) in Alaskan boreal forests, *Environmental Research Letters*, 14(8), 085010, doi:10.1088/1748-9326/ab215f, 2019.

## 2018

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- Walker, X. J., Baltzer, J. L., Cumming, S. G., Day, N. J., Johnstone, J. F., **Rogers, B. M.**, Solvik, K., Turetsky, M. R. and Mack, M. C.: Soil organic layer combustion in boreal black spruce and jack pine stands of the Northwest Territories, Canada, *International Journal of Wildland Fire*, 27(2), 125–134, doi:10.1071/WF17095, 2018.
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## 2017

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- Rogers, B. M.**, Jantz, P. and Goetz, S. J.: Vulnerability of eastern US tree species to climate change, *Global Change Biology*, 23(8), 3302–3320, doi:10.1111/gcb.13585, 2017.  
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- Veraverbeke, S., **Rogers, B. M.**, Goulden, M. L., Jandt, R. R., Miller, C. E., Wiggins, E. B. and Randerson, J. T.: Lightning as a major driver of recent large fire years in North American boreal forests, *Nature Climate Change*, 7(7), 529–534, doi:10.1038/nclimate3329, 2017.  
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## 2016

- Rogers, B. M.**, Jantz, P., Goetz, S. J. and Theobald, D. M.: Vulnerability of Tree Species to Climate Change in the Appalachian Landscape Conservation Cooperative, in *Climate Change in Wildlands: Pioneering Approaches to Science and Management in the Rocky Mountains and Appalachians*, edited by A. Hansen, B. Monahan, T. Olliff, and D. Theobald, pp. 212–233, Island Press, Washington, DC., 2016.  
*Reported by NASA Visible Earth, Mountain Forum, and Pro Arb Magazine.*
- Jantz, P., Monahan, B., Hansen, A., **Rogers, B. M.**, Zolkos, S., Cormier, T. and Goetz, S.: Modeling Potential Impacts of Climate Change on Vegetation for National Parks in the Eastern United States, in *Climate Change in Wildlands: Pioneering Approaches to Science and Management in the Rocky Mountains and Appalachians*, edited by A. Hansen, B. Monahan, T. Olliff, and D. Theobald, pp. 151–173, Island Press, Washington, DC., 2016.
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- Hoover, D. L. and **Rogers, B. M.**: Not all droughts are created equal: the impacts of interannual drought pattern and magnitude on grassland carbon cycling, *Global Change Biology*, 22(5), 1809–1820, doi:10.1111/gcb.13161, 2016.
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Chen, H. Y. H., Christensen, T. R., Cooper, L. W., Cornelissen, J. H. C., Groot, W. J. de, DeLuca, T. H., Dorrepaal, E., Fetcher, N., Finlay, J. C., Forbes, B. C., French, N. H. F., Gauthier, S., Girardin, M. P., Goetz, S. J., Goldammer, J. G., Gough, L., Grogan, P., Guo, L., Higuera, P. E., Hinzman, L., Hu, F. S., Gustaf Hugelius, Jafarov, E. E., Jandt, R., Johnstone, J. F., Karlsson, J., Kasischke, E. S., Gerhard Kattner, Kelly, R., Keuper, F., Kling, G. W., Kortelainen, P., Kouki, J., Kuhry, P., Hjalmar Laudon, Laurion, I., Macdonald, R. W., Mann, P. J., Martikainen, P. J., McClelland, J. W., Ulf Molau, Oberbauer, S. F., Olefeldt, D., Paré, D., Parisien, M.-A., Payette, S., Changhui Peng, Pokrovsky, O. S., Rastetter, E. B., Raymond, P. A., Reynolds, M. K., Rein, G., Reynolds, J. F., Robards, M., **Rogers, B. M.**, Schädel, C., Schaefer, K., Schmidt, I. K., Anatoly Shvidenko, Sky, J., Spencer, R. G. M., Starr, G., Striegl, R. G., Teisserenc, R., Tranvik, L. J., Virtanen, T., Welker, J. M., et al.: Biomass offsets little or none of permafrost carbon release from soils, streams, and wildfire: an expert assessment, *Environ. Res. Lett.*, 11(3), 034014, doi:[10.1088/1748-9326/11/3/034014](https://doi.org/10.1088/1748-9326/11/3/034014), 2016.

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## 2015

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Mouteva, G. O., Czimczik, C. I., Fahrni, S. M., Wiggins, E. B., **Rogers, B. M.**, Veraverbeke, S., Xu, X., Santos, G. M., Henderson, J., Miller, C. e. and Randerson, J. T.: Black carbon aerosol dynamics and isotopic composition in Alaska linked with boreal fire emissions and depth of burn in organic soils, *Global Biogeochemical Cycles*, 29, 1977–2000, doi:10.1002/2015GB005247, 2015.

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**Rogers, B. M.**, Bachelet, D., Drapek, R. J., Law, B. E., Neilson, R. P. and Wells, J. R.: Drivers of Future Ecosystem Change in the US Pacific Northwest: The Role of Climate, Fire, and Nitrogen, in *Global Vegetation Dynamics: Concepts and Applications in the MC1 Model*, edited by D. Bachelet and D. Turner, pp. 91–114, John Wiley & Sons, Inc., Washington, D. C., 2015.

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**Rogers, B. M.**, Soja, A. J., Goulden, M. L. and Randerson, J. T.: Influence of tree species on continental differences in boreal fires and climate feedbacks, *Nature Geoscience*, 8, 228 – 234, doi:10.1038/ngeo2352, 2015.

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**Rogers, B. M.**, Veraverbeke, S., Azzari, G., Czimczik, C. I., Holden, S. R., Mouteva, G. O., Sedano, F., Treseder, K. K. and Randerson, J. T.: Quantifying fire-wide carbon emissions in interior Alaska using field measurements and Landsat imagery, *Journal of Geophysical Research Biogeosciences*, 119, 1608–1629, doi:10.1002/2014JG002657, 2014.

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- Veraverbeke, S., Sedano, F., Hook, S. J., Randerson, J. T., Jin, Y. and **Rogers, B. M.**: Mapping the daily progression of large wildland fires using MODIS active fire data, *International Journal of Wildland Fire*, 23(5), 655–667, doi:10.1071/WF13015, 2014.

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- French, N. H. F., De Groot, W. J., Jenkins, L. K., **Rogers, B. M.**, Alvarado, E., Amiro, B., De Jong, B., Goetz, S., Hoy, E., Hyer, E., Keane, R., Law, B. E., McKenzie, D., McNulty, S. G., Ottmar, R., Perez-Salicrup, D. R., Randerson, J., Robertson, K. M. and Turetsky, M.: Model comparisons for estimating carbon emissions from North American wildland fire, *Journal of Geophysical Research Biogeosciences*, 116, G00K05, doi:10.1029/2010JG001469, 2011.
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### DATA SETS AND CONFERENCE PROCEEDINGS

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## GRANTS AWARDED

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- NSF Arctic Natural Sciences | 2020 – 2023 | Co-I | \$170,395 (to WHRC)  
*Collaborative Research: Increasing wildfires and the loss of legacy carbon from boreal and tundra ecosystems*
- One Earth, Rockefeller Philanthropy Advisors | 2020 – 2021 | Co-PI | \$75,000 (total)  
*Accounting for permafrost carbon feedbacks in global climate policy: estimates for gradual thaw, abrupt thaw, and wildfire*
- Gordon and Betty Moore Foundation | 2019 – 2023 | Co-PI | \$2,399,613 (total)  
*Global threat from a warming Arctic: The case for an Arctic Carbon Monitoring and Prediction System*
- WHRC Fund for Climate Solutions | 2019 – 2021 | PI | \$37,817 (total)  
*Planning for intensifying boreal wildfires: societal risks, management influence, policy opportunities, and strategic partnerships*
- WHRC Fund for Climate Solutions | 2019 – 2021 | Co-I | \$133,878 (total)  
*Integrating state-of-the-art science with indigenous knowledge to support threatened Arctic communities*
- NASA Arctic-Boreal Vulnerability Experiment (ABoVE) | 2019 - 2022 | Co-I | \$164,828 (to WHRC)  
*Mapping and modeling attributes of an arctic - boreal biome shift: Phase-2 applications within the ABoVE domain*
- WHRC Fund for Climate Solutions | 2018 – 2019 | PI | \$24,896 (total)  
*Management of Alaska wildfires for climate mitigation*
- Material from this project featured in several Union of Concerned Scientists blogs, the Got Science? Podcast, BBC news, E&E News, Grist, the Juneau Empire, Fairbanks Daily News Miner, Anchorage Daily News, Kodiak Daily Mirror, Mat-Su Valley Frontiersman, and Alaska Native News
- WHRC Fund for Climate Solutions | 2018 – 2019 | Co-I | \$180,045 (total)  
*Establishing an Arctic Climate Change and Carbon Observatory*
- WHRC Fund for Climate Solutions | 2019 – 2020 | Co-I | \$49,186 (total)  
*Towards a northern pyrogenic carbon budget*
- Griffith University | 2018 – 2022 | Co-I | \$599,996 (to WHRC)  
*Research into information, policy, and on-ground action for primary forest protection: boreal and temperate primary forests*

DoD Strategic Environmental Research and Development Program (SERDP) | 2018 - 2019 | Co-PI | \$199,966 (total)  
*Integrating remote sensing and field measurements to identify environmental nonstationarity on interior Alaska DoD training lands*

DoD Strategic Environmental Research and Development Program (SERDP) | 2018 - 2022 | Co-PI | \$483,653 (to WHRC)  
*Resiliency and vulnerability of boreal forest habitat to the interaction of climate and fire disturbance across DoD lands of interior Alaska*

NASA Land Cover/Land Use Change | 2018 - 2021 | Co-I | \$89,792 (to WHRC)  
*Circumpolar albedo of northern lands from Landsat-8 and Sentinel-2*

NASA Carbon Cycle Science | 2017 - 2020 | PI | \$1,378,730 (total)  
*Understanding the causes and implications of enhanced seasonal CO<sub>2</sub> exchange in boreal and arctic ecosystems*

NASA Arctic-Boreal Vulnerability Experiment (ABoVE) | 2015 - 2018 | PI | \$741,804 (total)  
*Developing a spatially-explicit understanding of fire-climate forcings and their management implications across the ABoVE domain*

NASA Arctic-Boreal Vulnerability Experiment (ABoVE) | 2015 - 2019 | Co-I | \$140,818 (to WHRC)  
*Mapping and modeling attributes of an arctic-boreal biome shift: Resource and management implications within the ABoVE domain*

NASA Arctic-Boreal Vulnerability Experiment (ABoVE) | 2015 - 2019 | Postdoc | \$240,200 (to WHRC)  
*Increasing fire severity and the loss of legacy carbon from forest and tundra ecosystems of northwestern North America*

INTERFACE Student Collaborative Exchange Program, Purdue University | 2011 | Co-I | \$430 (total)  
*Examining the effects of water availability on land surface temperatures in grassland and forest ecosystems*

## MENTORING

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Anna Virkkala | Postdoctoral Researcher at WHRC | 2020

Arden Burrell | Postdoctoral Researcher at WHRC | 2020

Scott Zolkos | Postdoctoral Fellow at WHRC (joint with Harvard) | 2020

Sara Giacomini | Research Assistant at WHRC | 2019 - 2020

Kathleen Savage | Research Associate at WHRC | 2019 - 2020

Jocelyne Laflamme | Summer intern at WHRC | 2019 | Master of Forest Conservation student at the University of Toronto

Molly Elder | Ph.D. student at Tufts University | 2018 - 2020

Tatiana Shestakova | Postdoctoral Researcher at WHRC | 2019 - 2020

Carly Phillips | Postdoctoral Fellow at WHRC (joint with Union of Concerned Scientists) | 2018 – 2020

Machteld Vergouw | Visiting M.A. student at Tufts University | 2018

Michael Moubarak | Summer intern at WHRC | 2018 | Undergraduate at Hamilton College

Sol Cooperdock | Research Assistant at WHRC | 2018 – 2019

Leah Birch | Postdoctoral Fellow at WHRC | 2017 – 2020

Julia Nojeim | Summer intern at WHRC | 2017 | Undergraduate at Fairfield University

Stefano Potter | Research Assistant at WHRC | 2017 - 2020

Kylen Solvik | Research Assistant at WHRC | 2015 – 2018 | Now MA Student of Geography at University of Colorado, Boulder

## SYNERGISTIC ACTIVITIES

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Working Group Lead | NASA ABoVE Vegetation Dynamics and Distribution | 2019 - 2020

Organizing Committee | NASA ABoVE Science Team Meetings | 2019 – 2020

Organizing Committee | Research to Operations workshop: Using ABoVE Data in Fire and Resource Management | 2019 - 2020

Scientific Steering Committee | International Boreal Forest Research Association (IBFRA) Meeting | 2018 - 2020

Primary Forest Task Team Member | International Union for Conservation of Nature | 2018 - 2020

Guest Editor | Environmental Research Letters | 2017-2020 | *Resiliency and Vulnerability of Arctic and Boreal Ecosystems to Environmental Change: Advances and Outcomes of ABoVE (the Arctic Boreal Vulnerability Experiment)*

Steering Committee | Future of Fire Workshop (NSF) | 2017

Co-Lead | IARPC Terrestrial Ecology Fire Working Group | 2017 - 2019

Science Team Member | NASA Arctic-Boreal Vulnerability Experiment (ABoVE) | 2015 - 2020

Organizer | WHRC monthly Journal Club | 2015 - 2019

Lead Guest Editor | Environmental Research Letters | 2015-2018 | *Focus on Changing Fire Regimes: Interactions with Climate, Ecosystems, and Humans*

Session Convener | American Geophysical Union Fall Meeting | Dec 2015, 2017, 2018, 2020 | *The Role of Fire in the Earth System: Understanding Drivers, Feedbacks, and Interactions with the Land, Atmosphere and Society* | Dec 2020 | *Forest Disturbance in the Context of Shifting Climate: Understanding Disturbances and Their Interactions as Agents of Forest Change*

Session Presider | Ecological Society of America Annual Meeting | Aug 2014 | *Modeling: Communities, Disturbance, and Succession*

## OUTREACH

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WHRC Policy Briefs | Northern High-Latitude Wildfires and Climate Change (2018) | Boreal, Temperate, and Tropical Primary Forests (2019)

Blog contributor | Union of Concerned Scientists | *Extreme Fires, Creative Solutions* | 2019

Ph.D. Committee Member | University of Massachusetts, Boston | 2017-2020 | Clark University | 2020

Documentary | Canadian Broadcasting Corporation, The Nature of Things, *What Trees Talk About* | 2017

Seminar & Guest Lecturer | Harvard University, Clark University, Stonehill College, WHRC Community Lecture, WHRC Board of Directors, Trillium Asset Management | 2015-2019

Course Designer and Presenter | Climate, Literacy, Empowerment, And iNquiry (CLEAN) education program | 2009 – 2014

## REVIEWER

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Biogeosciences | Carbon Management | Climatic Change | DOE Office of Biological & Environmental Research (BER) | Earth System Dynamics | Ecological Applications | Environmental Research Letters | Eos, Transactions, American Geophysical Union | European Research Council | Forests | Frontiers in Forests and Global Change | Functional Ecology | German Research Foundation | Journal of Advances in Modeling Earth Systems | Geophysical Model Development | Geophysical Research Letters | Global Change Biology | International Journal of Wilderness | International Journal of Wildland Fire | Landscape Ecology | NASA Carbon Monitoring System | NASA Interdisciplinary Science | Nature Climate Change | Nature Communications | Nature Geoscience | New Phytologist | NOAA Climate Program Office, Ocean and Atmospheric Research | NSF Division of Environmental Biology; Arctic Natural Sciences | Proceedings of the National Academies of Sciences, U.S.A | Remote Sensing | Remote Sensing of the Environment | Scientific Reports

## HONORS, AWARDS, AND FELLOWSHIPS

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2013 Editor's Citation for Excellence in Refereeing for Eos | Apr 2014

Outstanding Oral Presentation by a Young Scientist, 16<sup>th</sup> Conference of the International Boreal Forest Research Association | Oct 2013

NSF Graduate Research Fellowship | Oct 2009 – Sep 2011; Oct 2012 – Sep 2013

University of California, Irvine Chancellor's Fellowship | Oct 2009 – Sep 2011; Oct 2012 – Sep 2013

Jenkins Graduate Fellowship | Jan 2012 – Mar 2012

International Biogeography Society Student Travel Award | Jan 2009

Tarbell Book Prize in Organic Chemistry, Hamilton College | May 2003

Kirkland Prize in Mathematics, Hamilton College | May 2003

Oren Root Scholarship for Mathematics, Hamilton College | May 2003

Phi Beta Kappa, Hamilton College | May 2003

Summa Cum Laude, Hamilton College | May 2003

Departmental Honors in Mathematics, Hamilton College | May 2003

General Honors, Hamilton College | May 2003