

**Melissa S. Lucash**  
Research Assistant Professor  
Department of Geography  
Department of Environmental Studies  
University of Oregon  
245 Columbia Hall, Eugene, OR 97403  
[mlucash@uoregon.edu](mailto:mlucash@uoregon.edu) | [melissalucash.com](http://melissalucash.com)

---

## RESEARCH INTERESTS

I am a biogeochemist and forest ecologist who uses geospatial modeling with an interdisciplinary lens to study the spatial and temporal dynamics of large terrestrial landscapes under climate change. My research is innovative (e.g. using virtual reality to envision how forests will look under climate change), translational (often stakeholder-driven by federal agencies), and involves working with indigenous communities (e.g. Menominee in WI). My current research focuses on wildfires and climate change in the boreal forests of interior Alaska; wildfire, insects, and forest management in the boreal forests and tundra of Siberia; windstorms and forest management in SE Alaska, fuel treatments in the sagebrush steppe of the Pacific Northwest, and forest sustainability in the Pacific Northwest and upper Midwest.

---

## PROFESSIONAL APPOINTMENTS

<b>Research Assistant Professor</b> Department of Geography, University of Oregon Department of Environmental Studies, University of Oregon	2020- present 2023- present
<b>Interim Director of the InfoGraphics Lab</b> University of Oregon	2022
<b>Research Assistant Professor</b> Department of Geography, Portland State University	2016-2020
<b>Research Faculty/Postdoctoral Associate</b> Advisor: Dr. Robert Scheller, Department of Environmental Science and Management, Portland State University	2011-2016
<b>Stay-at home mom, two daughters</b>	2005-2010
<b>Graduate Teaching Assistant, Graduate Research Assistant</b> Department of Forest and Natural Resource Management, State University of New York College of Environmental Science and Forestry	2001-2004
<b>Instructor</b> Department of Forest and Natural Resource Management, State University of New York College of Environmental Science and Forestry	2001
<b>Plant Physiologist</b> Dynamac Corporation at the Western Ecology Division of the US EPA Laboratory	1996-2000

**Webber Outreach Program Supervisor and Chemistry Lab Instructor** 1996-1997  
Department of Chemistry, Willamette University

**Graduate Teaching Assistant, Graduate Research Assistant** 1993-1996  
Department of Biology, Oregon State University

---

## EDUCATION

**Ph.D. in Forest and Natural Resources Management** 2005  
Advisor: Dr. Ruth Yanai. SUNY College of Environmental Science and Forestry, Syracuse, NY

**M.S. in Environmental Science** 1996  
Advisor: Dr. Bill Winner. Oregon State University, Corvallis, OR

**B.S. in Environmental and Forest Biology** 1993  
*Magna Cum Laude*. SUNY College of Environmental Science and Forestry, Syracuse, NY

---

## RESEARCH GRANTS

\*Postdoc with Lucash

\*\*PhD student with Lucash

\*\*\*M.S. student with Lucash

\*\*\*\*NSF REU (undergraduate) student with Lucash

In prep LaMontagne, J, B Newingham, and **MS Lucash**. Collaborative Research: Using the past, present, and the future to investigate influences of global change agents on tree reproduction across the boreal forest. **National Science Foundation Macrosystems \$1,800,000.**

In review Fahey, R, C Gough, and **MS Lucash**. Collaborative Research: Unraveling the mechanistic underpinnings of compounding disturbance effects on forest production stability using coupled field-modeling experiments. **National Science Foundation Division of Environmental Biology \$1,074,000.**

2023- present Newingham, B, L Ellsworth and **MS Lucash**. Durability of fuel treatments in juniper-encroached sagebrush under climate change. **USDA Joint Fire Sciences. \$500,000.**

2023-present Gray, A and **MS Lucash**. Projecting wildfire across current and future landscapes: comparison of model approaches. **USDA Forest Service \$50,000.**

2023-present Mack M, T Brinkman, H Genet, T Hollingsworth, J Johnstone, J Jones, T Schuur, and X Walker. Senior Personnel: B Buma, W Hansen, J Hewitt, **MS Lucash**, M Muscarella, J Schmidt and M Turetsy. Bonanza creek LTER 7: Changing disturbances, ecological legacies, and the future of the Alaskan boreal forest. **National Science Foundation Long Term Ecological Research. \$7,649,997.**

- 2021-present Buma B, **MS Lucash**, and RS Scheller. An analysis of the impact of historical spatial patterns of forest harvesting practices for carbon management. **NSF Geospatial Science. \$476,254.**
- 2019-present **Lucash MS**, EJ Gustafson, BR Sturtevant, F Hoffman, and J Fu. Quantifying rates of biome shifts under climate change in the arctic and boreal ecosystems of Siberia. **NSF Arctic Natural Sciences. \$870,000.**
- 2022-2023 **Lucash MS** and N Williams\*. Spatially optimizing forest management at the landscape scale to conserve endangered species, preserve old growth stands, store carbon, and produce timber. **Oregon Department of State Lands. \$100,000**
- 2018-2023 **Lucash MS**, B Buma, T Link, V Romanovsky, and J Vogel. Collaborative Research: Regional impacts of increasing fire frequency on carbon dynamics and species composition in the boreal forest. **NSF Arctic Natural Sciences. \$1,400,000.**
- 2016-2022 Smithwick E, C Caldwell, A Klippel, RM Scheller, and N Tuana. Senior Personnel: K Keller, **MS Lucash**, R Nicolas, and R Bird. CNH-L: Visualizing forest futures under climate uncertainty: Integrating indigenous knowledge into decision-support tools for collaborative decision making. **NSF Coupled Human and Natural Systems. \$1,700,000.**
- 2018-2019 **Lucash MS**, J Fried, and A Holz. Modeling economic drivers and restoration strategies on forest resilience. **USDA Forest Service. \$111,000.**
- 2016-2020 **Lucash MS** and B Gravenmeier. Climate change and ecosystem services. **USDA Forest Service. \$423,029.**
- 2017-2019 Scheller RM, N Strigul, **MS Lucash**, and J Lienard. Ecosystem model comparison at multiple scales and sites. **Department of Defense SERDP. \$535,000.**
- 2014-2018 Thompson J, H Epstein, K Anderson-Teixeira, A Miller, R Scheller, **MS Lucash**, and T Spies. Understanding the potential for a climate change-driven critical transition from forest to chaparral. **NSF Department of Environmental Biology. \$965,000.**
- 2017-2018 **Lucash MS**, J Fried, and A Holz. Modeling forest resilience, biomass and carbon management potential. **USDA Forest Service. \$121,000.**
- 2017-2019 **Lucash MS** and E Gustafson. LANDIS-II software enhancements. **USDA Forest Service. \$1,700.**

- 2012-2016 Scheller RM, EJ Gustafson, **MS Lucash**, and BR Sturtevant. Integrating climate science into forest management decision-making using a collaborative network approach. **USDA Agricultural Food and Research Institute. \$717,031.**
- 2012-2014 Scheller RM, M Johnson, S LeDuc, and **MS Lucash**. Extrapolating LIDAR and carbon data to predict and manage the consequences of climate change in Pacific Northwest Forests. **Environmental Protection Agency and Bureau of Land Management. \$192,000.**

## PEER REVIEWED PUBLICATIONS

### Accepted with revisions

**Lucash, MS**, NG Williams\*, V Srikrishnan, K Keller, RM Scheller, C Hegelson, RE Nicholas, and EAH Smithwick, Accepted with revisions. Balancing multiple forest management objectives under climate change in central Wisconsin, U.S.A. Trees, Forests, and People

### Published

- 41 Weiss, SA\*\*, AM Marshall, KR Hayes, DM Nicolsky, B Buma and **MS Lucash**. 2023. Future transitions from a conifer to a deciduous-dominated landscape are accelerated by greater wildfire activity and climate change in interior Alaska. *Landsc Ecol* 38, 2569–2589. <https://doi.org/10.1007/s10980-023-01733-8>
- 40 Nasr-Azadani, E, EAH Smithwick, SJ Steidle\*\*\*, **MS Lucash**, DH Wardrop, NT Fregien, and TR Kenote. 2023. Integrating Menominee model for sustainable forestry with Systems Thinking competency through 3D virtual tours. <https://link.springer.com/article/10.1007/s11625-023-01399-w>
- 39 Williams, NG\*, **MS Lucash**, MR Ouellette, T Brussel\*, EJ Gustafson, SA Weiss\*\*, BR Sturtevant, DG Schepaschenko and AZ Shvidenko. 2023. Simulating dynamic fire regime and vegetation change in a warming Siberia. *Fire Ecology* 19 (1), 1-29. <https://fireecology.springeropen.com/articles/10.1186/s42408-023-00188-1>
- 38 **Lucash MS**, A Marshall, S Weiss\*\*, J McNabb, D Nicolsky, G Flerchinger, T Link, J Vogel, R Abramoff, R Scheller, and V Romanovsky. 2023. Burning trees in frozen soil: Simulating fire, vegetation, soil and hydrologic feedbacks in the boreal forests of Alaska. *Ecological Modeling* 481” 110367. <https://doi.org/10.1016/j.ecolmodel.2023.110367>
- 37 Steidle S\*\*\*, **MS Lucash**, EN Azadani, and E Smithwick. 2023. Testing presence, assessing attitudes: Study of a virtual tour in an “aesthetically challenged” landscape. *Journal of Environmental Management* 337:117574. <https://doi.org/10.1016/j.jenvman.2023.117574>
- 36 **Lucash MS**, S Weiss\*\*, MJ Duveneck, and RM Scheller. 2022. Managing for red-cockaded woodpeckers is more complicated under climate change. *Journal of Wildlife Management*. <https://doi.org/10.1002/jwmg.22309>
- 35 Shuman JK, JK Balch, RT Barnes, PE Higuera, CI Roos, DW Schwilk, E Stavros, T Banerjee, MM Bela, J Bendix, S Bertolino, S Bililign, KD Bladon, P Brando, RE Breidenthal, B Buma, D Calhoun, LMV Carvalho, ME Cattau, KM Cawley, SChandra, ML Chipman, J Cobian-Iñiguez, E Conlisk, JD Coop, A Cullen, KT Davis, A Dayalu, F De Sales, M Dolman, LM Ellsworth, S Franklin, CH Guiterman, M Hamilton, EJ Hanan, WD Hansen, S Hantson, BJ Harvey, A Holz, T Huang, MD Hurteau, NT Ilangakoon, M

- Jennings, C Jones, A Klimaszewski-Patterson, LN Kobziar, J Kominoski, B Kosovic, MA Krawchuk, P Laris, J Leonard, S Marcela Loria-Salazar, **M Lucash**, H Mahmoud, E Margolis, T Maxwell, JL McCarty, DB McWethy, RS Meyer, JR Miesel, W Keith Moser, R Chelsea Nagy, D Niyogi, H M Palmer, A Pellegrini, B Poulter, K Robertson, AV Rocha, M Sadegh, F Santos, F Scordo, JO Sexton, AS Sharma, A.M.S Smith, AJ Soja, C Still, T Swetnam, AD Syphard, MW Tingley, A Tohidi, AT Trugman, M Turetsky, J M Varner, Y Wang, T Whitman, S Yelenik, X Zhang 2022. Reimagine fire for the anthropocene. PNAS Nexus, 1(3), 115. <https://doi.org/10.1093/pnasnexus/pgac115>
34. Shabaga JA, R Bracho, PA Klockow, **MS Lucash**, and JG Vogel 2022. Shortened fire intervals stimulate carbon losses from heterotrophic respiration and reduce understory plant productivity in boreal forests. Ecosystems. <https://doi.org/10.1007/s10021-022-00761-w>
  33. Buma B, K Hayes, S Weiss\*\*, and **MS Lucash**. 2022. Short-interval fires increasing in the Alaskan boreal forest as fire self-regulation decays across forest types. Scientific Reports 12(1): 1-10. [doi.org/s41598-022-08912-8](https://doi.org/10.1038/s41598-022-08912-8)
  32. Marshall AM, TE Link, GN Flerchinger, and **MS Lucash**. 2021. Importance of parameter and climate data uncertainty for future changes in boreal hydrology. Water Resources Research 57 (8), e2021WR029911. [doi.org/10.1029/2021WR029911](https://doi.org/10.1029/2021WR029911)
  31. Huang J, **MS Lucash**, RM Scheller, and A Klippel. 2021. Walking through the forests with virtual reality: Using data-driven iVR to visualize forests under climate change. International Journal of GIS 35 (6), 1155-1178. [doi.org/10.1080/13658816.2020.1830997](https://doi.org/10.1080/13658816.2020.1830997)
  30. Marshall AM, TE Link, GN Flerchinger, DJ Nicolsky, and **MS Lucash**. 2021. Ecohydrological modelling in a deciduous boreal forest: Model evaluation for application in non-stationary climates. Hydrological Processes 35 (6), e14251. [doi.org/10.1002/hyp.14251](https://doi.org/10.1002/hyp.14251)
  29. Olson SK, EAH Smithwick, **MS Lucash**, RM Scheller, RE Nicholas, and KL Ruckert. 2021. Landscape-scale forest reorganization following insect invasion, harvest, and climate change. Ecosystems 1-19. [doi.org/10.1007/s10021-021-00616-w](https://doi.org/10.1007/s10021-021-00616-w)
  28. Schrum P, RM Scheller, **MS Lucash**, and Matthew Duveneck. 2020. Base-Hurricane: A new extension for the Landis-II forest landscape model. Ecological Modeling and Software. [doi.org/10.1016/j.envsoft.2020.104833](https://doi.org/10.1016/j.envsoft.2020.104833)
  27. Buma B, S Weiss\*\*, K Hayes, and **MS Lucash**. 2020. Wildland fire reburning trends across the US West suggest only short-term negative feedback and differing climatic effects. Environmental Research Letters 15 034026. [doi.org/10.1088/1748-9326/ab6c70](https://doi.org/10.1088/1748-9326/ab6c70)
  26. Cassell B, RM Scheller **MS Lucash**, M Hurteau, and EL Loudermilk. 2019. Widespread severe wildfires under climate change lead to increased forest homogeneity in dry mixed conifer forests. Ecosphere 10(11): e02934. [doi.org/10.1002/ecs2.2934](https://doi.org/10.1002/ecs2.2934)
  25. **Lucash MS**, K Ruckert, R Nicholas, RM Scheller, and EAH Smithwick. 2019. Complex interactions among successional trajectories and climate govern spatial resilience after severe windstorms in central Wisconsin, USA. Landscape Ecology 34(12): 2897–2915. [doi.org/10.1007/s10980-019-00929-1](https://doi.org/10.1007/s10980-019-00929-1)
  24. Lopez MJL, T Marcey\*\*\*\*, **MS Lucash**, D Hibbs, JPA Shatford, and JR Thompson. 2019. Post-fire vegetation dynamics with and without management intervention. Forest Ecology and Management. [doi.org/10.1016/j.foreco.2018.10.030](https://doi.org/10.1016/j.foreco.2018.10.030)

23. **Lucash MS**, RM Scheller, BR Sturtevant, EJ Gustafson, AM Kretchun, and JR Foster. 2018. More than the sum of its parts: how disturbance interactions shape forest dynamics under climate change. *Ecosphere*. [doi.org/10.1002/ecs2.2293](https://doi.org/10.1002/ecs2.2293)
22. Serra-Diaz JM, C Maxwell, **MS Lucash**, RM Scheller, DM Laflower, AD Miller, AJ Tepley, HE Epstein, KJ Anderson-Teixeira, and JR Thompson. 2018. Disequilibrium of fire-prone forests sets the stage for a rapid decline in conifer dominance during the 21st century. *Scientific Reports* 8:6749. [doi.org/10.1038/s41598-018-24642-2](https://doi.org/10.1038/s41598-018-24642-2)
21. Cantarello E, AC Newton, PA Martin, PM Evans, A Gosal, and **MS Lucash**. 2017. Quantifying resilience of multiple ecosystem services and biodiversity in a temperate forest landscape. *Ecology and Evolution* 7(22): 9961-9675. [doi.org/10.1002/ece3.3491](https://doi.org/10.1002/ece3.3491)
20. **Lucash MS**, RM Scheller, EJ Gustafson, and BS Sturtevant. 2017. Spatial resilience of forested landscapes under climate change and management. *Landscape Ecology* [dx.doi.org/10.1007/s10980-017-0501-3](https://dx.doi.org/10.1007/s10980-017-0501-3)
19. Creutzburg MK, RM Scheller, **MS Lucash**, SD LeDuc, and MG Johnson. 2017. Forest management scenarios in a changing climate: tradeoffs between carbon, timber, and old forest. *Ecological Applications* 27: 503-518. [dx.doi.org/10.1002/eap.1460](https://dx.doi.org/10.1002/eap.1460)
18. Creutzburg MK, RM Scheller, **MS Lucash**, LB Evers, SD LeDuc, and MG Johnson. 2015. Bioenergy harvest, climate change, and forest carbon in the Oregon Coast Range. *Global Change Biology- Bioenergy*. [doi.org/10.1111/gcbb.12255](https://doi.org/10.1111/gcbb.12255)
17. Smithwick E, **MS Lucash**, ML McCormack, and G Sivandran. 2014. Improving the representation of roots in climate change models. *Ecological Modeling* 291: 193-204. [dx.doi.org/10.1016/j.ecolmodel.2014.07.023](https://dx.doi.org/10.1016/j.ecolmodel.2014.07.023)
16. Wang F, D Mladenoff, J Forrester, JA Blanco, R Scheller, S Peckham, C Keough, **MS Lucash**, and ST Gower. 2014. Multi-model simulations of long-term effects of forest harvesting on ecosystem productivity and C/N cycling. *Ecological Applications* [dx.doi.org/10.1890/12-0888](https://dx.doi.org/10.1890/12-0888)
15. Kretchun A, RM Scheller, **MS Lucash**, KL Clark, J Hom, and S Van Tuyl. 2014. Predicted effects of gypsy moth defoliation and climate change on forest carbon dynamics in the New Jersey Pine Barrens. *PLoS ONE*. [dx.doi.org/10.1371/journal.pone.0102531](https://dx.doi.org/10.1371/journal.pone.0102531)
14. Jenny H, J Liem, **MS Lucash**, and RM Scheller. 2014. 4-D statistical surface method for visual change detection in forest ecosystem simulation time series. *IEEE J-STARs*. 7(11): 4505-4511. [dx.doi.org/10.1109/JSTARS.2014.2324972](https://dx.doi.org/10.1109/JSTARS.2014.2324972)
13. **Lucash MS**, RM Scheller, AM Kretchun, K Clark, and J Hom. 2014. Impacts of climate change and fire on long-term nitrogen cycling and forest productivity in the New Jersey Pine Barrens. *Canadian Journal of Forest Research* 44: 402-412. [doi.org/10.1139/cjfr-2013-0383](https://doi.org/10.1139/cjfr-2013-0383)
12. Scheller RM, AM Kretchun, S Van Tuyl, KL Clark, **MS Lucash**, and J Hom. 2012. Divergent carbon dynamics under climate change in forests with diverse soils, tree species, and land use histories. *Ecosphere* 3(11):110. [dx.doi.org/10.1890/ES12-00241.1](https://dx.doi.org/10.1890/ES12-00241.1)
11. **Lucash MS**, RD Yanai, JD Blum, and BB Park. 2012. Foliar nutrient concentrations related to soil sources across a range of sites and tree species in the northeastern USA. *Soil Science Society of America Journal* 76: 674–683. [dx.doi.org/10.2136/ssa2011.0160](https://dx.doi.org/10.2136/ssa2011.0160)
10. Yanai RD, KJ McFarlane, **MS Lucash**, JD Joslin, and SE Kulpa. 2009. Similarity of nutrient uptake and root dimensions of Engelmann spruce and subalpine fir at two contrasting sites

in Colorado. *Forest Ecology and Management* 258: 2233-2241.

[doi.org/10.1016/j.foreco.2009.04.035](https://doi.org/10.1016/j.foreco.2009.04.035)

9. **Lucash MS**, RD Yanai, and JD Joslin. 2008. Nitrogen uptake in intact and disturbed roots of loblolly pine seedlings. *Environmental and Experimental Botany* 64:15-20.  
[doi.org/10.1016/j.envexpbot.2008.05.013](https://doi.org/10.1016/j.envexpbot.2008.05.013)
8. **Lucash MS**, DM Eissenstat, RD Yanai, and JD Joslin. 2007. Estimating nutrient uptake by mature tree roots under field conditions: challenges and opportunities. *Trees* 21:593-603.  
[doi.org/10.1007/s00468-007-0160-0](https://doi.org/10.1007/s00468-007-0160-0)
7. **Lucash MS**, JD Joslin, and RD Yanai. 2005. Temporal variation in nutrient uptake capacity by intact roots of mature loblolly pine. *Plant and Soil* 272:253-262. [doi.org/10.1007/s11104-004-5296-8](https://doi.org/10.1007/s11104-004-5296-8)
6. **Lucash MS**, B Farnsworth, and WE Winner. 2005. Response of sagebrush steppe species to elevated CO<sub>2</sub> and soil temperature. *Western North American Naturalist* 65:80-86.
5. Lewis JD, **MS Lucash**, DM Olszyk, and DT Tingey. 2003. Relationships between needle nitrogen concentration and photosynthetic responses of Douglas-fir seedlings to elevated CO<sub>2</sub> and temperature. *New Phytologist* 162:355-365. [doi.org/10.1111/j.1469-8137.2004.01036.x](https://doi.org/10.1111/j.1469-8137.2004.01036.x)
4. Lewis JD, **MS Lucash**, DM Olszyk, and DT Tingey. 2002. Stomatal responses of Douglas-fir seedlings to elevated CO<sub>2</sub> and temperature during the third and fourth years of exposure. *Plant Cell and Environment* 25:1411-21. [doi.org/10.1046/j.1365-3040.2002.00923.x](https://doi.org/10.1046/j.1365-3040.2002.00923.x)
3. Lewis JD, **MS Lucash**, DM Olszyk, and DT Tingey. 2000. Seasonal patterns of photosynthesis in Douglas-fir seedlings during the third and fourth year of exposure to elevated CO<sub>2</sub> and temperature. *Plant Cell and Environment* 24:539-548.  
[doi.org/10.1046/j.1365-3040.2001.00700.x](https://doi.org/10.1046/j.1365-3040.2001.00700.x)
2. Apple ME, **MS Lucash**, DL Phillips, DT Tingey, and D Olszyk. 1999. Elevated temperature and the morphology of *Pseudotsuga menziesii* vegetative buds. *Environmental and Experimental Botany* 41:25-30. [doi.org/10.1016/S0098-8472\(98\)00046-X](https://doi.org/10.1016/S0098-8472(98)00046-X)
1. Apple ME, **MS Lucash**, DM Olszyk, and DT Tingey. 1998. Morphogenesis of Douglas-fir buds is altered at elevated temperature but not at elevated CO<sub>2</sub>. *Environmental and Experimental Botany* 40:159-175. [doi.org/10.1016/S0098-8472\(98\)00031-8](https://doi.org/10.1016/S0098-8472(98)00031-8)

## OTHER PUBLICATIONS

Seidl, R., M-J Fortin, J Honkaniemi, and **M Lucash**. 2023. In: M. M. Girona, H. Morin, S. Gauthier, & Y. Bergeron (Eds.), *Boreal Forests in the Face of Climate Change - Sustainable Management*. Advances in Global Change Research, 74, Springer-Nature, Cham: Springer. ISBN 978-3-031-15987-9.

Huang J, **MS Lucash**, M Simpson, C Helgeson, and A Klippel. 2019. Visualizing Natural Environments from Data in Virtual Reality: Combining Realism and Uncertainty. In *Proceedings of the 26th IEEE Conference on Virtual Reality and 3D User Interfaces*.

Smithwick EAH, C Caldwell, A Klippel, RM Scheller, N Tuana, R Bird, K Keller, **MS Lucash**, R Nicholas, S Olson, K Ruckert, J Oyler, C Helgeson, and J Huang. 2019. Transdisciplinary collaborative learning for triangulating ways of knowing across traditional and Western knowledge systems concerning future climate and forests. In: *Collaboration across Boundaries*, Perz Stephen G. ed., Palgrave.

- Huang J, **MS Lucash**, RM Scheller, and A Klippel. 2019. Visualizing ecological data in virtual reality. Proceedings of the 26th IEEE Conference on Virtual Reality and 3D User Interfaces.
- Domke G, CA Williams, R Birdsey, J Coulston, A Finzi, C Gough, B Haight, J Hicke, M Janowiak, B de Jong, WA Kurz, **MS Lucash**, S. Ogle, M. Olguín-Álvarez, Y Pan, M Skutsch, C Smyth, C. Swanston, P Templer, D Wear and CW Woodall. 2018: Chapter 9: Forests. In Second State of the Carbon Cycle Report (SOCCR2): A Sustained Assessment Report. [Cavallaro, N, G Shrestha, R Birdsey, M. Mayes, RG Najjar, SC Reed, P Romero-Lankao and Z Zhu (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, pp. 365-398  
[doi.org/10.7930/SOCCR2.2018.Ch9](https://doi.org/10.7930/SOCCR2.2018.Ch9)
- Gustafson EG, **MS Lucash**, J Liem, H Jenny, RM Scheller, K Barrett, and BR Sturtevant. 2016. Seeing the future impacts of climate change and forest management: a landscape visualization system for forest managers. USFS General Technical Report NRS-164. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station. 18 p.
- LANDIS-II Foundation. 2014-2018. Forecasting forested landscapes: An introduction to LANDIS-II with exercises. Self-published training manual.
- Jenny H, J Liem, RM Scheller, and **MS Lucash**. 2013. Enhancing cartographic time-series animation. Proceedings of the 26th International Cartographic Conference, Dresden, Germany.
- Jenny H, J Liem, **MS Lucash**, and RM Scheller. 2013. Visualization of alternative future scenarios for forest ecosystems using animated statistical surfaces. Proceedings of the 2nd International Conference on Agro-Geoinformatics, IEEE Xplore.
- Cloyd ET, **MS Lucash**, NE Hotaling, JH Hornbeck, HN Jensen, BJ Norelius, SH Reynolds, and JD Wickham. 2004. Book Review: Diversity and productivity. *Con. Bio.* 18:1171.
- Yanai RD, P Sollins, and **MS Lucash**. 2003. Book Review: Ecosystem ecology: in pursuit of principles. *Ecology* 84: 1640.

## TEACHING

2024-present	<b>Global Fire</b> (GEOG 210), <i>University of Oregon</i>
2024-present	<b>Landscape Ecology</b> (ENVS 410/510), <i>University of Oregon</i>
2022-2023	<b>Geographic Data Analysis</b> (GEOG 495/595), <i>University of Oregon</i>
2022	<b>The Natural Environment</b> (GEOG 141), <i>University of Oregon</i>
2016	<b>Environmental Systems II</b> (ESM 321), <i>Portland State University</i>
2010	<b>Investigating Forest Ecosystems</b> (SCI 338), <i>Portland State University</i>
2010-2011	<b>Energy and Society</b> (SCI321), <i>Portland State University</i>
2003-2004	<b>Global Environment</b> (EFB 120), Co-Instructor, <i>SUNY-ESF</i>
2002	<b>Introductory Soils Labs</b> (FOR 345/545), <i>SUNY-ESF</i>
2001	<b>Introductory Soils</b> (FOR 345/545), <i>SUNY-ESF</i>
1996-1997	<b>Introductory Chemistry Labs (CHEM 101)</b> <i>Willamette University</i>
1996-1996	<b>Introductory Biology Labs (BIO 101)</b> , <i>Oregon State University</i>

## MENTORING

### Postdocs advised:

- Neil Williams, Research Associate, 2021- 2023  
 Tom Brussel, Research Associate, 2020- 2022



**Graduate students advised:**

Gabriel Abreu-Vigil, M.S. student, 2022- present  
Colin Mast, M.S. student, 2022- present  
Hana Matsumoto, M.S. student, 2022- present  
James Lamping, Ph.D. student, 2021- present  
Shelby Weiss, Ph.D. Candidate, 2018- 2022  
Stuart Steidle, M.S. Student, 2020- 2022

**Undergraduate students advised:**

Jannike Allen, Honor's College, 2019- 2021  
Terry Marcey, REU student, 2017-2018  
Jessica Mazzi, Honor's College, 2015-2016

**Graduate student committee member:**

Nicole Martinez Llaurador, Ph.D. Department of Biology, University of Oregon, 2022- present  
Rebecca Hayes, Ph.D. Department of Biology, University of Oregon, 2022- present  
Carmen Ebel, Ph.D. Department of Biology/ ENVS, University of Oregon, 2021- present  
Alison Deak, M.S., Department of Geography, University of Oregon, 2021- 2022  
Ignacio Falcon-Dvorksy, Department of Geography, M.S. Portland State University 2020  
Laura Platt, M.S. Department of Geography, Portland State University 2020.  
Lauren Sharwood, M.S. Department of Geography, Portland State University 2020  
Paul Pettus, M.S. Department of Environmental Science. Portland State University 2014- 2015  
Sebastian Busby M.S. Department of Geography, Portland State University 2018- 2019

---

**MEDIA**

**CQ**, Can better forest management solve the problem? Nov. 6 2020.

<https://library.cqpress.com/cqresearcher/document.php?id=cqresrre2020110600>

**OPB**. We know climate change set the conditions for Oregon fires. Did it stoke the flames, too?  
Sept. 21, 2020. <https://www.opb.org/article/2020/09/21/oregon-wildfires-climate-change-role/>

**OPB Radio**. Study: NW forests will weather climate change better than others in the west. Nov. 19, 2018. <https://www.opb.org/news/article/not-enough-wildfires-study/>

**Jefferson Public Radio**, Guest on call-in radio show. After the fire: Douglas firs grow back without help. Nov. 13, 2018. <https://www.ijpr.org/show/the-jefferson-exchange/2018-11-13/after-the-fire-douglas-firs-grow-back-without-help#stream/0>

**OPB radio**. Replanting trees after wildfires may not be necessary. Nov. 9, 2018.

<https://www.opb.org/news/article/wildfire-trees-study-research-replanting/#.w-y8xaqvsqf.twitter>

**OPB radio**. The problem with wildfires: There aren't enough of them, study finds. Nov. 14, 2017.

<https://www.opb.org/news/article/not-enough-wildfires-study/>

**OPB radio.** Climate change, wildfires transforming NW Forests. Oct. 2015. Link no longer available.

---

## **AWARDS AND SERVICE**

### **Awards**

Research Excellence Award, Portland State University, 2018. Top award given to research professors at PSU.

Wilburforce Fellow, Prestigious fellowship in conservation science given to only twenty scientists in western North America. <http://tinyurl.com/zifebpd>, 2015- 2017.

NSF GK-12 Graduate Student Fellowship, NSF, 2003- 2004. \$30,000.

### **Scientific Community Service**

Invited Expert Reviewer, NSF Polar Programs 2018, 2021, 2023

Invited Panelist, NSF (confidential panel), Virtual 2022

Invited Expert Reviewer, NSF RCN, 2022

Invited Expert Reviewer, IPCC AR6, 2021

Invited Panelist, NSF Earth Systems Science, Washington D.C. 2019

Invited Panelist, NSF GFRP, 2017

Invited Panelist, NSF Polar Programs, 2017

Invited External Peer Reviewer, NSF DEB 2015,

Invited External Peer Reviewer, National Science Center, Poland. 2002

President of the LANDIS-II Foundation, 2021- present.

Board member of the LANDIS-II Foundation, 2017- present.

LTER Graduate Student Representative for Hubbard Brook Experimental Forest, 2000-2002

Graduate Student Association at SUNY-ESF, Vice-President and Secretary, 2002- 2004

Journal Peer Reviewer

- Biodiversity and Conservation
- Canadian Journal of Forest Research
- Carbon Management
- Climatic Change
- Ecography
- Ecological Applications
- Ecological Modelling
- Ecological Monographs
- Ecosphere
- EGU Sphere
- Environmental Modelling and Software
- Environmental Monitoring and Assessment
- Environmental Research Letters
- Fire Ecology
- Forest Ecosystems
- Forest Ecology and Management
- Forests
- Frontiers in Forests and Global Change
- Geophysical Research Letters

- Global Change Biology
- Global Change Biology-Bioenergy
- iScience
- Journal of Applied Ecology
- Journal of Sustainability Science
- Landscape Ecology
- New Phytologist
- Oecologia
- Oikos
- PLOS One
- Science of the Total Environment
- Scientific Reports
- Soil Science Society of America Journal
- Sustainability Science

### **Memberships in Professional Societies**

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

### **University Service**

Graduate Student Admissions Committee, Dept of Environmental Studies, 2023-present

DEI Committee, Dept of Geography, 2023-present

Mentoring Committee, Dept of Geography, 2022-2023

Graduate Student Admissions Committee, Dept of Geography, 2021-2022

Academic Advisory Council for the President of PSU, Invited, 2017-2018

Graduate Admissions and Awards Committee, Geography Department, PSU: 2017-2018

### **Community Service**

Speaker, There's wildfire in Alaska? After-school girls STEM club, Groner Middle School, May 2019.

Science Fair Judge. State Science Fair, Beaverton, OR; Ridgewood Elementary School, Portland, OR; City View Charter School, Hillsboro, OR; Ed Smith Elementary School, Syracuse, NY, 2002-2003, 2011-2020.

Secretary and Board Member of Your World Rocks, a nonprofit organization providing hands-on science activities to local public schools, Hillsboro, OR, 2015- 2018.

Speaker, Career series: What is a forest ecologist? 5<sup>th</sup> graders at Ridgewood Elementary, May 2017.

Speaker, Insects are everywhere, kindergarteners at City View Charter School, May 2017.

Co-organizer of National Climate Assessment (NCA) PNW Regional Town Hall. 2013. Co-organized event with US Global Change Research Program (Washington DC) to encourage public participation in the evaluation of the NCA, the official report on climate change to the President and Congress.

Panelist for Pacific University's Center for Gender Equity and the Hillsboro/Forest Grove branch of the American Association of University Women (AAUW) Annual Banquet, Feb. 2012.

Co-instructor of Science at the Center for Inquiry Program, Beaverton, OR, 2012-2013.

Participant in Portland Metro STEM Partnership Intel STEMposium. Apr 2012 and Apr 2015.

Co-organizer of after school science club. City View Charter School, Hillsboro, OR, 2012.

Summer Camp Counselor, SMILE (Science and Math Investigative Learning Experiences)

Summer Camp for middle school students typically underrepresented in science and math.

Oregon State University, Corvallis, OR, June 1992.

Volunteer, Center for Nature Education, Marcellus, NY, June- Aug 1991.

### **Organized Conference Sessions**

Synergistic effects of climate and management on biodiversity. International Association for Landscape Ecology- World Congress, Milan, Italy. July 2019. Co-organized with R Scheller and M Betts.

Simulating climate change, management and disturbances on forested landscapes using LANDIS-II. International Association for Landscape Ecology- US Chapter, Portland, Oregon. August 2015. Co-organized with M Duveneck.

Leader or Co-Organizer of the LANDIS-II Trainings in Portland, OR; Madison, WI; and Harvard Forest, MA, 2013-2018.

### **PROFESSIONAL CONFERENCE PRESENTATIONS**

Weis S\*\*, G Abreu-Vigil\*\*\*, A Marshall, D Nicosky, and **MS Lucash**. 2023. Vegetation shifts, permafrost thaw, and hydrologic dynamics in the boreal forests of Alaska under future climate and wildfire. Ecological Society of America, Portland, OR.

Lamping J\*\* and **MS Lucash**. 2023 Modeling carbon and species trajectories under contrasting forest management strategies in southeast Alaska. Ecological Society of America, Portland, OR

**Lucash MS**, B Buma, T Link, J Vogel, D Nicosky, R Scheller, A Marshall, J Shabaga, K Hayes and S Weiss\*\*. 2023. Impacts of increasing fire frequency and climate change on species composition and carbon dynamics in the boreal forests of Alaska. Ecological Society of America, Portland, OR

Mast C\*\*, NG Williams\*, **MS Lucash**. 2023. Modeling future shifts in species habitat, carbon storage, and timber production in the Elliott State Research Forest under a Triad management system, windstorms, wildfire, and climate change, Ecological Society of America, Portland, OR

Matsumoto H\*\*, NG Williams\*, **MS Lucash**, MR Ouellette, T Brussel\*, EJ Gustafson, SA Weiss\*\*, BR Sturtevant, DG Schepaschenko and AZ Shvidenko. 2023. Modeling future impacts of wildfire, Siberian silk moth, wind, and timber management on Siberian arctic and boreal ecosystems under climate change. Ecological Society of America, Portland, OR

**Lucash MS**, NG Williams\* and C Mast\*\*\*. 2023. Using landscape modeling to inform forest management planning of the Elliott State Research Forest, the largest research forest in North America. International Association for Landscape Ecology- North America, Riverside, CA.

Marshall A, T Link, **MS Lucash**, G Flerchinger, D Nicosky, and S Weiss\*\*. 2022. Hydrologic modeling in discontinuous boreal permafrost: Model sensitivity and uncertainty in non-stationary climates. American Geophysical Union Frontiers in Hydrology. San Juan, Puerto Rico.

Marshall, A, T Link, **MS Lucash**, G Flerchinger, D Nicosky, and S Weiss\*\*. 2022. Hydrologic modeling in discontinuous boreal permafrost: Model sensitivity and uncertainty in non-stationary climates. American Geophysical Union Frontiers in Hydrology. San Juan, Puerto Rico.

Hayes K, C Hoffman, J Ziegler, **M Lucash**, and B Buma. 2022. Continued short-interval reburning changes carbon storage and future fire behavior of boreal forests regardless of forest resilience. American Geophysical Union. New Orleans, LA.

- Brussel T\*, E Gustafson, A Shvidenko, D Shchepashchenko, N Williams\*, S Weiss\*\*, B Sturtevant, B Miranda, and **MS Lucash**. 2022. Simulating Siberia's response to global change through the lens of tipping points. International Association of Landscape Ecology, Riverside, CA. Virtual.
- Lucash MS**, A Deak, J Lamping\*\*, and NG Williams\*. 2022. Too much and not enough: Challenges of using remote sensing to inform forest modeling. International Association of Landscape Ecology, Riverside, CA. Virtual.
- Steidle S\*\*\* and **MS Lucash**. 2022. Testing presence, assessing attitudes: Study of a virtual tour in an "aesthetically challenged" landscape. International Association of Landscape Ecology, Riverside, CA. Virtual.
- Williams N\*, **MS Lucash**, M Ouellette, EJ Gustafson, B Sturtevant, AZ Shvidenko, and D Schepaschenko. 2022. Simulating dynamic fire regime - Vegetation interactions across a latitudinal gradient in central Siberia. International Association of Landscape Ecology, Riverside, CA. Virtual.
- Weiss S\*\*, **MS Lucash**, B Buma, and K Hayes. 2022. Contexts mediating future shifts in vegetation composition in interior Alaskan boreal forests under climate change. International Association of Landscape Ecology, Riverside, CA. Virtual.
- Williams N\* and **MS Lucash**. 2021. Exploring interactions between vegetation, fire, and climate change across a latitudinal gradient in Siberia. Global Land Programme Asia Conference, Sapporo, Japan. Virtual
- Lucash MS**, A Marshall, S Weiss\*\*, D Nicolsky, T Link, J Vogel, and V Romanovsky. 2021. Simulating feedbacks between fire, vegetation, soil and hydrology on C dynamics in the boreal forests of Alaska. International Boreal Forest Research Association. Fairbanks, AK, Virtual.
- Weiss SA\*\* and MS Lucash. 2020 How increasing fire frequency will change the forests of interior Alaska. Ecological Society of America. Virtual.
- Lucash MS**, B Buma, T Link, V Romanovsky, J Vogel, D Nicolsky, R Scheller, A Marshall, J Shabaga, K Hayes, and SA Weiss\*\*. 2020. You've got me going in circles: Feedbacks in the boreal forests of Alaska. Ecological Society of America. Virtual.
- Buma B, K Hayes, S Weiss\*\*, and **MS Lucash**. 2019. Overlapping and interacting fires, a double whammy: Short-interval burns are becoming more frequent across the US West but pace suggests negative feedbacks and spatial patterning. American Geophysical Union. San Francisco, CA.
- Lucash MS**, RM Scheller, EJ Gustafson, and BR Sturtevant. 2019. Negative feedbacks among multiple disturbances in north-central Minnesota. American Fire Ecology Conference. Tucson, AZ. Invited Speaker.
- Hayes K, B Buma, **MS Lucash**, and S Weiss\*\*. 2019. Continued repeat burning in the boreal causes continued ecosystem transformation. American Fire Ecology Conference. Tucson, AZ.
- Buma B, K Hayes, S Weiss\*\*, and **MS Lucash**. 2019. Rates of short-interval fires increasing across the U.S. West. American Fire Ecology Conference. Tucson, AZ.
- Scheller RM, **MS Lucash**, and M Duveneck. 2019. Managing forests for change: Simulations suggest radical innovations in management will be necessary. Ecological Society of America. New Orleans, LA.
- Lucash MS**, J Huang, V Srikrishnan, K Keller, A Klippel, RM Scheller, R Nicholas, and EAH Smithwick. 2019. Using robust decision-making and virtual reality to analyze management tradeoffs under climate change. International Association of Landscape Ecologists World Congress. Milan, Italy. Symposium Organizer, Invited speaker.
- Lucash MS**, J Huang, A Klippel, RM Scheller, R Nicholas, and EAH Smithwick. 2019. A glimpse into the future: Using spatial modeling and virtual reality to visualize forests under climate change. International Association of Landscape Ecologists. Denver, CO.

- Scheller RM, **MS Lucash**, and MJ Duveneck. 2019. Landscape trajectories of ecosystem services under climate change and climate adapted management. Ecological Society of America. New Orleans, LA.
- Keller K, EAH Smithwick, A Klippel, R Nicholas, C Helgeson, **M Lucash**, and N Radke. 2018. How do biodiversity and human values shape forest management under climate change? Some preliminary lessons from an interesting (read hard) problem. Society for Decision Making Under Deep Uncertainty Meeting. Culver City, CA.
- Lucash MS** and RM Scheller. 2018. Spatial resilience under climate change. International Association of Landscape Ecologists. Chicago, IL. Invited speaker.
- Klippel A, J Hiawei, and **MS Lucash**. 2018. Immersive experiences for grounding environmental decision making. International Association of Landscape Ecologists. Chicago, IL.
- Lucash MS** and RM Scheller. 2017. Spatial resilience under climate change. Resilience Alliance Conference. Stockholm, Sweden. Invited speaker.
- Lucash MS**, RM Scheller, E Gustafson, and B Sturtevant. 2017. Spatial resilience under climate change. Ecological Society of America. Portland, OR
- Smithwick EAH, A Klippel, N Tuana, R Bird, K Keller, R Nicholas, C Caldwell, RM Scheller, and **MS Lucash**. 2017. Visualizing forest futures under climate uncertainty by integrating multiple ways of knowing. Association of American Geographers. Boston, MA.
- Scheller RM, **MS Lucash**, EJ Gustafson, and BR Sturtevant. 2017. Integrating climate science into forest management and policy using a collaborative approach. International Association for Landscape Ecology Meeting. Baltimore, Maryland.
- Serra-Diaz JM, **MS Lucash**, C Maxwell, RM Scheller, and JR Thompson. 2016. Assessing critical vegetation transitions during climate change: Insights from Northwestern USA forests. Ecological Society of America. Ft. Lauderdale, Florida.
- Scheller RM, MK Creutzburg, **MS Lucash**, SD LeDuc, and MG Johnson. 2016. Alternative policy scenarios under a changing climate: tradeoffs among ecosystem services in the Oregon Coast Range. Invited speaker at the International Association for Landscape Ecology Meeting. Asheville, North Carolina.
- Lucash MS**, RM Scheller, and E Gustafson. 2015. Scenario analysis in landscape-level modelling. Co-organizer of special session on Research Needs and Capabilities for the National Climate Assessment. Ecological Society of America. Baltimore, MD.
- Creutzburg MK, RM Scheller, and **MS Lucash**. 2015. Climate change, fire, and timber harvest in forests of the Oregon Coast Range. International Association for Landscape Ecology World Congress. Portland, Oregon.
- Lucash MS**, RM Scheller, and E Gustafson. 2015. Latest advancements of LANDIS-II. International Association of Landscape Ecology. Portland, OR.
- Lucash MS**, RM Scheller, E Gustafson, and B Sturtevant. 2014. Interactive effects of wind and climate change on C sequestration of forests. Ecological Society of America. Sacramento, CA.
- Creutzburg MK, RM Scheller, **MS Lucash**, SD LeDuc, and MG Johnson. 2014. Carbon and nitrogen dynamics under alternative climate change and management scenarios in the Oregon Coast Range. Ecological Society of America, Sacramento, California.
- Creutzburg MK, R.M. Scheller, **MS Lucash**, SD LeDuc, and MG Johnson. 2014. Management and climate change in coastal Oregon forests: The Panther Creek watershed as a case study. International Association of Landscape Ecology. Anchorage, Alaska.

**Lucash MS**, RM Scheller, H Jenny, J Liem, and MK Creutzburg. 2014. Latest developments of Century Succession: New climate library and visualization tools. LANDIS-II Meeting. Madison, WI. Invited speaker.

Jenny H, RM Scheller and **MS Lucash**. 2013. Enhancing cartographic time-series animation using 3D statistical surfaces. International Cartographic Conference. Dresden, Germany.

Jenny H, **MS Lucash**, and RM Scheller. 2013. Visualization of alternative future scenarios using statistical surfaces. Agro-Geoinformatic. Fairfax, Virginia.

**Lucash MS**, RM Scheller, E Gustafson, and B Sturtevant. 2013. Evaluating the impact of climate change on midwestern forests. Next Generation Climate Data Products, Boulder, CO.

Scheller RM, **MS Lucash**, AM Kretchun, K Clark, and J Hom. 2012. Forests and climate change: Integrating spatial, temporal, and taxonomic heterogeneity. IUFRO Meeting, Concepción, Brazil.

Scheller RM, **MS Lucash**, H Jenny, E Gustafson, and B Sturtevant. 2012. Integrating climate change results into forest management plans using a scenario visualization tool. Harvard Forest, MA, Invited speaker.

**Lucash MS**, RM Scheller, AM Kretchun, KL Clark, J Hom, and SK Chapman. 2012. Nitrogen cycling in the New Jersey Pine Barrens as a consequence of insect outbreaks and wildfire. Ecological Society of America, Portland, OR.

Scheller RM, **MS Lucash**, AM Kretchun, K Clark, and J Hom. 2012. Modeling spatial, temporal and taxonomic heterogeneity: landscape-scale estimates of forest C dynamics. Ecol. Soc. Am. Annual Meeting, Portland, OR.

**Lucash MS**, RM Scheller, A Kretchun, K Clark, and J Hom. 2012. Improving N cycling and forest productivity: Application to the NJ Pine Barrens. LANDIS-II Meeting, Madison, WI. Invited.

**Lucash MS**, J Basta, RD Yanai, DM Eissenstat, and JM Scholberg. 2002. Nutrient uptake measured using SUM columns. Hubbard Brook Exp. Forest Cooperators Meeting, Millbrook, NY.

**Lucash MS** and D McLean. 2001. Methods for estimating nutrient uptake using intact roots of mature trees. Hubbard Brook Exp. Forest Annual Cooperators Meeting, Millbrook, NY.

## PROFESSIONAL CONFERENCE POSTERS

Lamping J\*\*, **M Lucash**, T Carter, B Buma, and RM Scheller. 2023. The future of carbon in a perhumid landscape: Modeling carbon and species trajectories under contrasting management strategies. International Association of Landscape Ecology- North America, Riverside, CA.

Matsumoto H\*\*\*, E Gustafson, T Brussel\*, N Williams\*, B Sturtevant, D Schepaschenko, A Shvidenko, and **MS Lucash**. 2023. Projecting the impacts of climate change and multiple disturbances on Siberian boreal and arctic ecosystems. International Association for Landscape Ecology- North America. Riverside, CA.

Mast C\*\*\*, N Williams\*, and **MS Lucash** 2023. Integrated effects of a Triad harvesting regime with wind and fire disturbances on key ecosystem services in the Elliott State Research Forest, Oregon. International Association of Landscape Ecology- North America, Riverside, CA.

Weiss S\*\*, G Abreu-Vigil\*\*\*, A Marshall, K Hayes, B Buma, D Nicolsky, and **MS Lucash**. 2023. Modeling fire and vegetation shifts in Alaskan boreal forests under future climate change. International Association of Landscape Ecology- North America, Riverside, CA.

Deak A, L Silva, and **MS Lucash**. 2022. Modeling prescribed fire in the Siskiyou Mountains, USA. International Association of Landscape Ecology, Riverside, CA. Virtual.

- Weiss S\*\*, K Hayes, and **MS Lucash**. 2019. Modeling post-fire successional trajectories under climate change in black spruce forests of Interior Alaska. American Geophysical Union. San Francisco, CA.
- Marshall AM, TE Link, and **MS Lucash**. 2019. Energy and water balances in boreal forest with discontinuous permafrost: Implementation of a physically-based hydrological model at sites with varying disturbance histories. American Geophysical Union. San Francisco, CA.
- Lucash MS**, J Vogel, and RM Scheller. 2019. Simulating soil carbon pools and fluxes in the boreal forests of Alaska using a new hybrid model of LANDIS-II and DAMM-MCNiP. American Geophysical Union. San Francisco, CA.
- Lucash MS**, Paul Pettus, and RM Scheller. 2019. Ecosystem model comparison at multiple scales and sites. International Association of Landscape Ecology, World Congress, Milan, Italy.
- Weiss S\*\* and **MS Lucash**. 2019. Using habitat suitability modeling to evaluate potential moose habitat and patterns of wildfire in interior Alaska. International Association of Landscape Ecologists. Denver, CO.
- Smithwick E, **MS Lucash**, RM Scheller, and R Nicholas. 2018. Drivers of spatial resilience under climate change. American Geophysical Union, Washington, D.C.
- Olson S, E Smithwick, **MS Lucash**, and RM Scheller. 2018. Modeling the spread of emerald ash borer with variable climate predictions in northeastern Wisconsin, USA using LANDIS-II. Association of American Geographers, New Orleans, LA.
- Thompson JR, J Serra-Diaz, AJ Tepley, CJ Maxwell, KJ Anderson-Teixeira, RM Scheller, **MS Lucash**, HE Epstein, and L Morreale. 2017. Potential for forest to shrubland shift in the Klamath region of Oregon and California. Ecological Society of America. Portland, Oregon.
- Lucash MS**, RM Scheller, E Gustafson, and B Sturtevant. 2013. Winds of change: How will windstorms and forest harvesting affect C cycling under different climate scenarios? American Geophysical Union, San Francisco, CA.
- Lucash MS**, RM Scheller, AM Kretchun, K Clark, and J Hom. 2012. Forecasting changes in belowground productivity and nutrient cycling of soils in the New Jersey Pine Barrens as a consequence of climate change and wildfire. DOE Workshop on Scaling Root Processes: Global Impacts, Washington D.C.
- Lucash MS** and RM Scheller. 2012. Challenges of data assimilation for researchers and forest managers. NSF RCN Forecast Meeting, Boulder, CO.
- Lucash MS**, RD Yanai, and JD Blum. 2009. The importance of soil mineralogy to calcium availability in forests. NY State Energy Research and Development Authority (NYSERDA) Environmental Monitoring, Evaluation and Protection Conf. and Rochester Academy of Science Meeting.
- Yanai RD, KJ McFarlane, **MS Lucash**, JD Joslin, and SE Kulpa. 2008. Similarity of nutrient uptake and root dimensions of Engelmann spruce and subalpine fir across two sites in Colorado. N. Am For. Soil Conf.
- Lucash MS**, RD Yanai, and JD Joslin. 2004. Respiratory costs of ammonium and nitrate uptake in intact roots of white pine seedlings. Ecol. Soc. Am. Annual Meeting.
- Cloyd ET and **MS Lucash**. 2004. Incorporating research into high school science classrooms. Ecol. Soc. Am. Annual Meeting.
- Yanai RD, **MS Lucash**, SE Kulpa, JD Joslin, and KJ McFarlane. 2003. Diameter distributions of fine roots of twelve tree species. Soil Sci. Soc. Am. Annual Meeting.
- Lucash MS**, JD Joslin, O Abelleira, RD Yanai, and JM Scholberg. 2003. Measuring nutrient uptake in intact plant-soil systems. Soil Sci. Soc. Am. Annual Meeting.
- Lucash MS**, O Abelleira, JD Joslin, RD Yanai, and JM Scholberg. 2003. Effects of disturbance on nitrate uptake of loblolly pine seedlings. Ecol. Soc. Am. Annual Meeting.



- Lucash MS**, RD Yanai, JD Joslin, and KJ McFarlane. 2002. Uptake capacity of loblolly pine roots measured in the field varies seasonally. Ecol. Soc. Am. Annual Meeting.
- Yanai RD, RE Sherman, **MS Lucash**, KJ McFarlane, and JD Joslin. 2002. What root parameters best predict nutrient uptake? Ecol. Soc. Am. Annual Meeting.
- McFarlane KJ, RD Yanai, and **MS Lucash**. 2002. Nutrient uptake by Engelmann spruce and subalpine fir at two Colorado subalpine forests. Ecol. Soc. Am. Annual Meeting.
- Yanai RD, JD Joslin, **MS Lucash**, and RE Sherman. 2001. Nutrient uptake estimated by ecosystem budgets and by root-scale models. Soil Sci. Soc. Am. Annual Meeting.
- Joslin JD, MG Johnson, DT Tingey, MH Wolfe, DL Phillips, and **MS Lucash**. 2001. Studying forest root systems- an overview of methodological problems. Soil Sci. Soc. Am. Annual Meeting.
- Apple ME, **MS Lucash**, DM Olszyk, and DT Tingey. 1997. Morphology and the internal temperature of *Pseudotsuga menziesii* vegetative buds grown at elevated temperature. Ecol. Soc. Am. Annual Meeting.
- Apple ME, **MS Lucash**, DT Tingey, and DM Olszyk. 1997. Morphology, development, and temperature of *Pseudotsuga menziesii* vegetative buds at elevated CO<sub>2</sub> and temperature. Am. Assoc. Adv. Sci. Annual Meeting.