# Verity G. Salmon, PhD

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Environmental Science Division • Climate Change Science Institute
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## EDUCATION

2011- 2016 PhD in Botany. Biology Department, University of Florida, College of Liberal Arts and Sciences
2005-2009 Bachelor of Arts in Biology (magna cum laude). Boston University, College of Arts and Sciences

## RELEVANT SCIENTIFIC EXPERIENCE

### Summer 2016- present • Postdoctoral researcher, Oak Ridge National Lab (Oak Ridge, TN)

Post-doctoral scientist on Department of Energy's Next Generation Ecosystem Experiment- Arctic. Current position supervised by Dr. Colleen Iversen. Research focuses on plant roots and access to nitrogen in warming ecosystems as well as integration of belowground plant dynamics into earth system models. Responsible for proposing and planning novel arctic research, protocol development, coordination and execution of remote field campaigns, management of laboratory sample processing, statistical analysis, scientific writing and coordinating interdisciplinary collaboration. Ongoing goals of the project include communicating scientific results to general and technical audiences.

### Fall 2011- Summer 2016 • Doctoral research, University of Florida (Gainesville, FL)

PhD research supervised by Dr. Edward Schuur. Carried out field work near Denali National Park, securing partial funding through self-initiated partnership with education and outreach center at Denali National Park. During growing seasons, managed day to day scientific observations of manipulative warming experiments and conducted self-directed research at AK field sites to improve understanding of impact of permafrost thaw on nitrogen cycling in plants and soils. Graduate assistant responsibilities at the University of Florida included teaching undergraduate Plant Ecology and Introductory Biology lab courses.

### Fall 2009- Fall 2011 • Research Assistant, Marine Biological Laboratory (Woods Hole, MA)

Technician for Dr. Gaius Shaver at Ecosystems Center. Summer season spent at Toolik Lake LTER on the North Slope, AK with winter months spent in MA. Carried out data collection and logistics coordination during field season in AK for a variety of researchers funded through the National Science Foundation. Spent winter months processing samples, overseeing data quality, archiving data, and performing data analysis in collaboration with an interdisciplinary team of scientists.

### Fall 2008- Fall 2009 • Undergraduate Thesis for Distinction, Boston University (Boston, MA)

Conducted research under the supervision of Dr. Adrien Finzi on the role Eastern Hemlock (*Tsuga canadensis*) tannins play in nitrogen cycling of temperate forest soils.

## RESEARCH TOOLS

Knowledgeable user of R programming language (automated data processing, graphing and statistics)
Coordination and execution of remote Alaskan field work
Experience with manipulating large, multiyear datasets for analysis and publication
Production, documentation, and archival of data for public access
Interdisciplinary research with scientists from academia, national laboratories and national park system

## SCIENCE COORDINATION & COMMUNICATION

Annual participation in scientific meetings as attendee, presenter, and speaker (American Geophysical Union annual meeting, Ecological Society of America, Permafrost Carbon Network, Department of Energy Earth System Sciences Principle Investigator Meeting)

Reviewer for *Ecology, Global Change Biology, Functional Ecology, Journal of Geophysical Research: Biogeosciences*, *New Phytologist*, *PLOS One*, and *Biogeochemistry.*

Reviewer for DOE Environmental System Science Funding Opportunity (DE-FOA-0001855, May 2018)
Public seminar entitled "Beneath our Feet: Plants & Soils on the Seward Peninsula." Strait Science Series at University of Alaska Northwest Campus, Nome, AK (July 2018)
Author of public report for Mary's Igloo Native Corporation summarizing research on native land (Feb 2018)
Guest lecturer for Montclair State University, graduate level course (March 2017, April 2018)
Author of report materials for DOE Quarterly and Annual project updates (Dec 2016- present)
Breakout session coordinator at DOE NGEE Arctic all hands meeting (Dec 2017)
Breakout session coordinator at DOE Environmental System Science meeting (April 2017)
Author of Denali National Park Factsheet on carbon in permafrost (March 2016)

## FELLOWSHIPS AND AWARDS

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| 2016 | Department of Energy Science Student Travel Fellowship ($500) |
| 2015 | University of Florida, Graduate Student Council Travel Grant ($350) |
| 2015 | University of Florida, College of Liberal Arts and Sciences Travel Grant ($300) |
| 2015 | Department of Energy Science Student Travel Fellowship ($500) |
| 2014 | University of Florida, College of Liberal Arts and Sciences Travel Grant ($300) |
| 2014 | Permafrost Young Researchers Network Travel Grant ($500) |
| 2013 | Discover Denali Research Fellowship through Denali National Park ($6,000) |
| 2011 | Graduate Student Fellowship, University of Florida (tuition and stipend) |
| 2009 | Biology Department Honors Thesis Work for Distinction, Boston University |
| 2008-2009 | Funded Research Opportunity Grants, UROP, Boston University ($1,000) |

## PUBLICATIONS (orcid.org/0000-0002-2188-551X)

Schädel C, Koven C, Lawrence DM, Celis G, Garnello AJ, Hutchings J, Mauritz M, Natali SM, Pegoraro E, Rodenhizer H, **Salmon VG**, Taylor M, Webb EE, Wieder WR, Schuur EAG (2018). Divergent patterns of experimental and model-derived permafrost ecosystem carbon dynamics in response to Arctic warming. Environmental Research Letters. https://doi.org/10.1088/1748-9326/aae0ff.

**Salmon VG**, Schädel C, Bracho R, Pegoraro E, Celis G, Mauritz M, Mack MC, Schuur EAG (2018). Adding depth to our understanding of nitrogen dynamics in permafrost soils. Journal of Geophysical Research: Biogeosciences. https://doi.org/10.1029/2018JG004518.

Liang J, Xia J, Shi Z, Jiang L, Ma S, Lu X, Mauritz M, Natali SM, Pegoraro E, Penton CR, Plaza C, **Salmon VG**, Celis G, Cole JR, Konstantinidis KT, Tiedje JM, Zhou J, Schuur EAG, and Luo Y (2018). Biotic responses buffer warming-induced soil organic carbon loss in Arctic tundra. Global Change Biology:0–3. https://doi.org/10.1111/gcb.14325.

Celis G, Mauritz M, Bracho R, **Salmon VG**, Webb EE, Hutchings JA, Natali SM, Schädel C, Crummer KG, Schuur EAG (2017) .Tundra is a consistent source of $CO_2$ at a site with progressive permafrost thaw during 6 years of chamber and eddy covariance measurements. Journal of Geophysical Research: Biogeosciences, 122, 1471–1485. http://dx.doi.org/10.1002/2016JG003671.

Mauritz M, Bracho R, Celis G, Hutchings JA, Natali SM, Pegoraro E, **Salmon VG**, Schädel C, Webb EE, Schuur EAG (2017). Non-linear $CO_2$ flux response to seven years of experimentally induced permafrost thaw. Global Change Biology. https://dx.doi.org/10.1111/gcb.13661

**Salmon VG**, Soucy P, Mauritz M, Celis G, Natali SM, Mack MC, Schuur EAG (2016). Nitrogen availability increases in a tundra ecosystem during five years of experimental permafrost thaw. Global Change Biology, 22, 1927–1941. https://dx.doi.org/10.1111/gcb.13204

Deane-Coe KK, Mauritz M, Celis G, **Salmon VG**, Crummer KG, Natali SM, Schuur EAG (2015). Experimental Warming Alters Productivity and Isotopic Signatures of Tundra Mosses. Ecosystems, 18, 1070–1082. https://doi.org/10.1007/s10021-015-9884-7

Natali SM, Schuur EAG, Mauritz M, Schade JD, Celis G, Crummer KG, Johnston C, Krapek J, Pegoraro E, **Salmon VG**, Webb EE (2015). Permafrost thaw and soil moisture driving $CO_2$ and $CH_4$ release from upland tundra. Journal of Geophysical Research: Biogeosciences, 120, 525–537. https://doi.org/10.1002/2014JG002872

Shaver GR, Rastetter EB, **Salmon VG**, Street LE, van de Weg MJ, Rocha A, van Wijk MT, Williams M (2013). Pan-Arctic modelling of net ecosystem exchange of $CO_2$. Philosophical Transactions of the Royal Society B: Biological Sciences, 368, 20120485–20120485. https://doi.org/10.1098/rstb.2012.0485

van de Weg MJ, Shaver GR, **Salmon VG** (2013). Contrasting effects of long term versus short-term nitrogen addition on photosynthesis and respiration in the Arctic. Plant Ecology, 214–1286. https://doi.org/10.1007/s11258-013-0250-6

## SHARED DATA PRODUCTS

**Salmon VG**, Schuur EAG. 2018. Eight Mile Lake Research Watershed, Carbon in Permafrost Experimental Heating Research (CiPEHR): Off Plot Soil Incubation by Depth I - Soil Properties and Final Microbial Biomass 2013-2014. http://dx.doi.org/10.6073/pasta/8c8a28a8d8ed4f443cb75ed00aabd647

**Salmon VG**, Schuur EAG. 2018. Eight Mile Lake Research Watershed, Carbon in Permafrost Experimental Heating Research (CiPEHR): Off Plot Soil Incubation by Depth II - Soil $CO_2$ Fluxes 2013-2014. http://dx.doi.org/10.6073/pasta/42154f55124b9774632094ff6242f7d3

**Salmon VG**, Schuur EAG. 2018. Eight Mile Lake Research Watershed, Carbon in Permafrost Experimental Heating Research (CiPEHR): Off Plot Soil Incubation by Depth III - Soil Extracts 2013-2014. Bonanza Creek LTER data archives. http://dx.doi.org/10.6073/pasta/eef7cf20be08bfc20f1ea0540e2a1431

**Salmon VG**, Iversen CM, Breen A, Vander Stel H, Childs J. 2017. NGEE Arctic Plant Traits: Plant Biomass and Traits, Kougarok Road Mile Marker 64, Seward Peninsula, Alaska, beginning 2016. Next Generation Ecosystem Experiments Arctic Data Collection, Oak Ridge National Laboratory, U.S. Department of Energy, Oak Ridge, Tennessee, USA. Dataset access at http://dx.doi.org/10.5440/1346199.

**Salmon VG**, Iversen CM, Vander Stel H, Breen A, Wullschleger S. 2017. NGEE Arctic Plant Traits: Vegetation Plot Locations, Ecotypes, and Photos, Kougarok Road Mile Marker 64, Seward Peninsula, Alaska, 2016. Next Generation Ecosystem Experiments Arctic Data Collection, Carbon Dioxide Information Analysis Center, Oak Ridge National Laboratory, Oak Ridge, Tennessee, USA. Data access at http://dx.doi.org/10.5440/1346196.

**Salmon VG**, Iversen CM, Vander Stel H, Breen A, Wullschleger S. 2017. NGEE Arctic Plant Traits: Soil Temperature and Moisture, Kougarok Road Mile Marker 64, Seward Peninsula, Alaska, beginning 2016. Next Generation Ecosystem Experiments Arctic Data Collection, Carbon Dioxide Information Analysis Center, Oak Ridge National Laboratory, Oak Ridge, Tennessee, USA. Data access at http://dx.doi.org/10.5440/1346195.

**Salmon VG**, Iversen CM, Breen A, Vander Stel H, Wullschleger S. 2017. NGEE Arctic Plant Traits: Soil Depth, Kougarok Road Mile Marker 64, Seward Peninsula, Alaska, beginning 2016. Next Generation Ecosystem Experiments Arctic Data Collection, Carbon Dioxide Information Analysis Center, Oak Ridge National Laboratory, Oak Ridge, Tennessee, USA. Data access at http://dx.doi.org/10.5440/1346198.

**Salmon VG**, Natali S, Schuur EAG. Six years of plot level NDVI from EML Site in Healy, AK. 2015. Bonanza Creek LTER data archives. http://dx.doi.org/10.6073/pasta/3ff42c06e62ce1bad1df8c2745429fd8

**Salmon VG**, Natali S, Schuur EAG. Five years of aboveground biomass from the CiPEHR project. 2014. Bonanza Creek LTER data archives. http://dx.doi.org/10.6073/pasta/4446e37f339ffdac6912030d83e2f61f