Postdoctoral Research Associate
Department of Biology
West Virginia University
53 Campus Dr, Morgantown, WV 26506

srnwbr@gmail.com (preferred)
soren.weber@mail.wvu.edu

www.sporenweber.com

Education and Training

2022 Dr. sc. nat. (PhD) Plant Sciences, University of Zürich, "**Resource Exchange and Partner Choice in the Plant–AMF Symbiosis**"
2017 M.S. Plant Biology, University of California, Riverside, "**Responses of Arbuscular Mycorrhizal Fungi to Multiple Global Change Drivers in Coastal Sage Scrub**"
2014 B.S. Biology *summa cum laude*, University of Central Florida

Professional Positions

2025-current	Postdoctoral Research Associate, West Virginia University
2022-2025	Postdoctoral Research Associate, Oak Ridge National Laboratory
2017-2018	Laboratory Manager & Technician, University of California, Riverside

Funding

2023 Terrestrial Ecosystem Science - Scientific Focus Area. Earth and Environmental Systems Sciences Program, Biological and Environmental Research, Office of Science, US DOE. USD $41.5 million. PI: Dr.s Paul J. Hanson and Daniel M. Ricciuto. 1 of 23 contributors.
Co-authored portions of initial submission on roots, defended proposal to reviewer panel, co-authored response to reviewers and DOE program managers.

The elusive structure and function of peatland fine roots. Environmental Transformations and Interactions, Environmental Molecular Sciences Laboratory (Pacific Northwest National Laboratory). User Facility Exploratory Research Call. Equipment time and Technician expertise & labor. PI: Avni Malhotra. Participants: **Sören Eliot Weber**, Bram WG Stone.

2021 Trade dynamics in the symbiosis between plants and arbuscular mycorrhizal fungi. Forschungskredit Candoc, University of Zürich. USD c.$31,480 [CHF 28,773]. PI: **Sören Eliot Weber**, Pascal A. Niklaus.
2013 National Science Foundation – Research Experience for Undergraduates. USD $4,500. *As part of* National Science Foundation Grant No. 0922457 University of Texas
2012 Research and Mentoring Program (RAMP), *internal program at* University of Central Florida. USD $5,600. PI's: 2012-2013 Betsy Von Holle; 2013-2014 Eric Hoffman.

Publications

4 first authored publications
8 co-authored publications
0 senior author publications

12. Microbially mediated nitrification improves modeled temperate forest responses to declining nitrogen deposition. Joanna R. Ridgeway, Benjamin N. Sulman, **Sören Eliot Weber**, Stephanie M. Juice, Edward R. Brzostek. Applied Soil Ecology 217. **2026**. https://doi.org/10.1016/j.apsoil.2025.106585.
11. AMF diversity promotes plant community phosphorus acquisition and reduces carbon costs per unit of phosphorus. **Sören Eliot Weber**, Jordi Bascompte, Ansgar Kahmen, Pascal A. Niklaus. New Phytologist. **2025**. https://doi.org/10.1111/nph.70161
10. Plant choice between arbuscular mycorrhizal fungal species results in increased plant P acquisition. **Sören Eliot Weber**, Jordi Bascompte, Ansgar Kahmen, Pascal A. Niklaus. PLoS ONE 19(1): e0292811. **2024**. https://doi.org/10.1371/journal.pone.0292811

9. How deep should we go to understand roots at the top of the world? **Sören Eliot Weber**, Colleen M. Iversen. New Phytologist 240, 457-460. **2023**. https://doi.org/10.1111/nph.19220
8. Plant functional traits are dynamic predictors of ecosystem functioning in variable environments. Jared D. Huxley, Caitlin T. White, Hope C. Humphries, **Sören Eliot Weber**, Marko J. Spasojevic. Journal of Ecology 111, 2597-2613. **2023**. https://doi.org/10.1111/1365-2745.14197
7. Variation in $\delta^{13}C$ and $\delta^{15}N$ within and among plant species in the alpine tundra. Marko J. Spasojevic and **Sören Eliot Weber**. Arctic, Antarctic, and Alpine Research 53:1, 340-351. **2021**. https://doi.org/10.1080/15230430.2021.2000567
6. Belowground impacts of alpine woody encroachment are determined by plant traits, local climate, and soil conditions. Courtney G. Collins, Marko J. Spasojevic, Concepción L. Alados, Emma L. Aronson, Juan C. Benavides, Nicoletta Cannone, Chatrina Caviezel, Oriol Grau, Hui Guo, Gaku Kudo, Nikolas J. Kuhn, Jana Müllerová, Michala L. Phillips, Nuttapon Pombubpa, Frédérique Reverchon, Hannah B. Shulman, Jason E. Stajich, Alexia Stokes, **Sören Eliot Weber**, Jeffrey M. Diez. Global Change Biology 26:12, 7112-7127. **2020**. https://doi.org/10.1111/gcb.15340
5. Plant biomass, not plant economics traits, determines responses of soil CO2 efflux to precipitation in the C4 grass Panicum virgatum. Robert W. Heckman, Albina R. Khasanova, Nicholas S. Johnson, **Sören Eliot Weber**, Jason E. Bonnette, Michael J. Aspinwall, Lara G. Reichmann, Thomas E. Juenger, Philip A. Fay, Christine V. Hawkes. Journal of Ecology 108:5, 2095-2106. **2020**. https://doi.org/10.1111/1365-2745.13382
4. The influence of warming and biotic interactions on the potential for range expansion of native and nonnative species. Betsy von Holle, **Sören Eliot Weber**, David M. Nickerson. AoB Plants 12:5, plaa040. **2020**. https://doi.org/10.1093/aobpla/plaa040
3. Fungal community assembly in soils and roots under plant invasion and nitrogen deposition. Michala L. Phillips, **Sören Eliot Weber**, Lela V. Andrews, Emma L. Aronson, Michael F. Allen, Edith B. Allen. Fungal Ecology 40 107-117. **2019**. https://doi.org/10.1016/j.funeco.2019.01.002
2. Responses of arbuscular mycorrhizal fungi to multiple coinciding global change drivers. **Sören Eliot Weber**, Jeffrey M. Diez, Lela V. Andrews, Michael L. Goulden, Emma L. Aronson, Michael F. Allen. Fungal Ecology 40, 62-71. **2019**. https://doi.org/10.1016/j.funeco.2018.11.008
1. Shrub range expansion alters diversity and distribution of soil fungal communities across an alpine elevation gradient. Courtney G. Collins, Jason E. Stajich, **Sören Eliot Weber**, Nuttapon Pombubpa, Jeffrey M. Diez. Molecular Ecology 27:10, 2461-2476. **2018**. https://doi.org/10.1111/mec.14694

Submitted Manuscripts

3. Implementing belowground controls on nutrient uptake in ELMv2-SPRUCE improves representation of a boreal peatland ecosystem. Wang, Y., D. M. Ricciuto, J. Mao, **Sören Eliot Weber**, V. G. Salmon, X. Shi, X. Yang, N. A. Griffiths, P. J. Hanson, K. Duchesneau, C. E. Defrenne, J. M. Warren, S. D. Sebestyen, K. Oleheiser, M. A. Mayes, and P. E. Thornton. *Submitted to Geoscientific Model Development.*
   Preprint: https://doi.org/10.5194/egusphere-2025-5471
2. Warming and elevated CO_2 cause greater and deeper root growth by shrubs in a boreal bog. **Sören Eliot Weber**, Joanne Childs, John M. Latimer, Paul J. Hanson, Verity G. Salmon, Geoff Schwaner, Colleen M. Iversen. *In review*, *Journal of Ecology.*
   Preprint: https://www.biorxiv.org/content/10.1101/2025.06.26.661811v1
1. The fate of peatland carbon interactively determined by elevated carbon dioxide and warming. Jian Zhou, Wenjuan Huang, Paul Hanson, Daniel Ricciuto, Melanie Mayes, Natalie Griffiths, Verity Salmon, **Sören Eliot Weber**, Lifen Jiang, Yu Zhou, Quan Quan, Xiaoying Shi, Weinan Chen, Yahai Zhang. *Submitted to Science.*

Published Datasets

6. SPRUCE Root Production Assessed with Manual Minirhizotrons Resolved to Plant Functional Type, 2015–2021. **Sören Eliot Weber**, Joanne Childs, John M. Latimer, Verity G. Salmon, Colleen M. Iversen. Oak Ridge National Laboratory, TES SFA, U.S. Department of Energy, Oak Ridge, Tennessee, U.S.A. **2025**. https://doi.org/10.25581/spruce.127/2570059
5. SPRUCE Manual Minirhizotron Images from Experimental Plots Beginning in 2013. **Sören Eliot Weber**, Joanne Childs, Colleen M. Iversen, John M. Latimer, Verity G. Salmon, Anne M. Burnham, Richard J. Norby. Oak Ridge National Laboratory, TES SFA, U.S. Department of Energy, Oak Ridge, Tennessee, U.S.A. **2025**. https://doi.org/10.25581/spruce.060/1490356
4. Data for: "AMF diversity promotes plant phosphorus acquisition and reduces carbon costs per unit of phosphorus" **Sören Eliot Weber**, Jordi Bascompte, Ansgar Kahmen, Pascal A. Niklaus. Zenodo. **2024**. https://doi.org/10.5281/zenodo.13952709
3. Plant choice between arbuscular mycorrhizal fungal species results in increased plant P acquisition. **Sören Eliot Weber**, Jordi Bascompte, Ansgar Kahmen, Pascal A. Niklaus. Dryad. **2024**. https://doi.org/10.5061/dryad.v15dv421p
2. SPRUCE Plant-Available Nutrients Assessed with Ion-Exchange Resins in Experimental Plots, Beginning in 2013. Iversen CM, Latimer J, Burnham A, Brice DJ, Childs J, Vander Stel HM, Schwaner GW, **Sören Eliot Weber**. Oak Ridge National Laboratory, TES SFA, U.S. Department of Energy, Oak Ridge, Tennessee, U.S.A. **2024**. http://dx.doi.org/10.3334/CDIAC/spruce.036
1. Niwot plant functional traits, 2008 - 2018. Spasojevic, M., **Sören Eliot Weber**, and Niwot Ridge LTER. Environmental Data Initiative. **2021**. https://doi.org/10.6073/pasta/1a06bcffa07e7aa2a4b674af4c427860

Invited Talks

Global Change, Roots, and Mycorrhizal Fungi. **Sören Eliot Weber.** University of Missouri - St. Louis, St. Louis, MO USA. March **2025**.

Plant Roots in Boreal Peatlands Under Whole-Ecosystem Warming and Elevated CO_2 Track Nutrients, Not Water. **Sören Eliot Weber**, J. Childs, J. Latimer, C.M. Iversen. Environmental System Science Program (DOE) Principal Investigator Meeting. Bethesda, MD USA. May **2023**.

Chthonic Connections: Plant Roots, Mycorrhizal Fungi & Ecosystem Processes. **Sören Eliot Weber**. University of Georgia, Plant Biology Seminar. Athens, GA USA. February **2023**.

Dirty Relationships with Fungi: The Arbuscular Mycorrhizal Symbiosis. **Sören Eliot Weber**. Zürich Interaction Seminar UZH-ETH. Zürich ZH, CH. April **2019**.

Diversity and trade in the arbuscular mycorrhizal symbiosis. **Sören Eliot Weber**. University of Basel. Basel BS, CH. April **2019**.

Wildlands to the Garden: Invasive Plants, Habitat Restoration, and Conservation. Amanda Swanson, **Sören Eliot Weber**. Master Gardener Symposium. Riverside, CA USA. April **2015**.

Contributed Presentations

Responses of root exudate rate, flux, and metabolome to whole-ecosystem warming in a forested bog. Nikhil R. Chari, Ian Palk, **Sören Eliot Weber**, Tiia Määttä, Avni Malhotra, Verity G. Salmon, Benton N. Taylor. **Poster**. Rhizosphere 6. Edinburgh, SCT GB. June **2025**.

Fine-Root Production in a Boreal Bog Responds to Experimental Warming and Elevated CO_2 Differentially among Plant Functional Types. **Sören Eliot Weber**, Joanne Childs, John M. Latimer, Paul J. Hanson, Verity G. Salmon, Geoff Schwaner, Colleen M. Iversen. **Talk**. SPRUCE Project Annual All Hands Meeting. Minneapolis, MN USA. May **2025**.

Peatland shrub roots increase resource acquisition with warming. Tiia Määttä, Nikhil R. Chari, Joanne Childs, Collen M. Iversen, Verity G. Salmon, Geoff Schwaner, **Sören Eliot Weber** and Avni Malhotra. **Poster**. EGU General Assembly 2025. Vienna, AT. April **2025**.

Root Production in a Boreal Bog Responds to Experimental Warming and Elevated CO_2 Differentially among Plant Functional Types. **Sören Eliot Weber**, Joanne Childs, John M. Latimer, Paul J. Hanson, Verity G. Salmon, Geoff Schwaner, Colleen M. Iversen. **Poster**. Environmental System Science Program (DOE) Principal Investigator Meeting. Reston, VA USA. April **2025**.

Boreal Plant Roots Differentially Respond to Depressed Water Tables. **Sören Eliot Weber**, Joanne Childs, John M. Latimer, Verity G. Salmon, Colleen M. Iversen. **Poster**. American Geophysicists Union Annual Meeting 2024. Washington D.C. USA. December **2024**.

Boreal plant roots do not grow deeper to take advantage of depressed water tables. **Sören Eliot Weber**, Joanne Childs, Geoff Schwaner, Colleen M. Iversen. **Talk**. New Phytologist Next Generation Scientists 2024 Symposium. Durham, NC USA. June **2024**. doi.org/10.52843/cassyni.v5610k

Greater Shrub Root Production Under Warming and Elevated CO_2 Is Not Distributed More Deeply. **Sören Eliot Weber**, Joanne Childs, Colleen M. Iversen. **Poster**. Environmental System Science Program (DOE) Principal Investigator Meeting. Reston, VA USA. April **2024**.

Plant roots in boreal peatlands under whole-ecosystem warming and elevated CO2 track nutrients, not water. **Sören Eliot Weber**, Joanne Childs, John M. Latimer, Colleen M. Iversen. **Talk**. Ecological Society of America Annual Meeting. Portland, OR USA. August **2023**.

Rooting depth and productivity responses to SPRUCE treatments. **Sören Eliot Weber**, Joanne Childs, John M. Latimer, Colleen M. Iversen. **Talk**. SPRUCE Project Annual All Hands Meeting. Minneapolis, MN USA. May **2023**.

How does the plant-AMF mutualism scale from pairwise interactions to complex networks? **Sören Eliot Weber**, Pascal A. Niklaus, Jordi Bascompte, Ansgar Kahmen, Marcel G.A. van der Heijden. **Talk**. Plant Science Center – Syngenta Symposium. Stein AG, CH. November **2021**.

Partner choice and biodiversity-ecosystem functioning in the arbuscular mycorrhizal symbiosis. **Sören Eliot Weber**, Pascal A. Niklaus, Jordi Bascompte, Ansgar Kahmen, Marcel G.A. van der Heijden. **Talk**. Plant Science Center – Syngenta Symposium. Stein AG, CH. November 2020.

Partner diversity & resource trade in arbuscular mycorrhizae. **Sören Eliot Weber**, Pascal A. Niklaus, Jordi Bascompte, Ansgar Kahmen, Marcel G.A. van der Heijden. **Talk**. Plant Science Center – Syngenta Symposium. Stein AG, CH. March **2019**.

AMF compositional and functional responses to global change. **Sören Eliot Weber**, Michael Goulden, Jeffrey M. Diez, Michael F. Allen. **Talk**. Ecological Society of America Annual Meeting. Portland OR, USA. August **2017**.

The influence of warming and biotic interactions on the potential for range expansion of native and nonnative species. Betsy von Holle, **Sören Eliot Weber**, Stephanie Igtiben, Kimberly A. Medley, and Christine V. Hawkes. **Talk**. Ecological Society of America Annual Meeting. Minneapolis, MN. August **2013**.

The effect of enemy release on Eugenia species range expansion with climate change. Stephanie Igtiben, **Sören Eliot Weber**. **Poster**. Southeastern Evolution and Ecology Conference. Orlando, FL. March **2013**.

Awards and Honors

Top Cited Article from Wiley among work published in 2023 for "Plant functional traits are dynamic predictors of ecosystem functioning in variable environments" in *Journal of Ecology*. **2025**.

G. Ledyard Stebbins Award. California Native Plant Society. USD 200. **2015**.

Graduated *Summa Cum Laude* from University of Central Florida. **2014**.

Research Mentorship

2025-current Doctoral Students Emily Protain, Louise Tymrak & Jansen Nipko, West Virginia University

2021-2022 Lea Sophie Buol, Masters' Student, University of Zürich Thesis: "Partner choice and influence of defoliation on the arbuscular mycorrhizal symbiosis"

2018 Kenya Gates, Niwot Ridge NSF LTER REU, University of California, Riverside
Project: “Investigating mycorrhizal associations across a moisture gradient in the alpine tundra”

Teaching Experience

2026-02-05 Plant Physiology, West Virginia University
Guest lecture on plant and ecosystem C allocation
2025-11-04 Microbes and Global Change, West Virginia University
Guest Lecture on microbial P cycling
2019-2021 Data Analysis in Biology, University of Zürich
Teaching Assistant, facilitated student analysis of ecological datasets
2020 Fall Contemporary Analysis for Ecology, University of Zürich
Teaching Assistant, lectured and facilitated student analysis of ecological datasets
2015-2017 Organismal Biology Laboratory, University of California, Riverside
Teaching Assistant, lectured, assisted experiments, proctored exams

Professional Service

Reviewer for 25 journals: Agriculture, Ecosystems and Environment; AoBPlants; Biogeochemistry; Communications Earth & Environment; Discover Soil; Ecology and Evolution; Ecosphere; Ecosystems; EGUSphere; Environmental Microbiology; Global Ecology and Biogeography; Journal of Ecology; Journal of Environmental Management; Journal of Soils and Sediments; Journal of Vegetation Science; Microbial Ecology; Mycorrhiza; New Phytologist; The Plant Journal; Oecologia; Plant, Cell, & Environment; Plant and Soil; Scientific Reports; Soil Biology and Biochemistry; Tree Physiology.

Campus Service

Organized visit by Dr. LaMontagne (University of Missouri - St. Louis). Oak Ridge National Laboratory. Oak Ridge, Tennessee, U.S.A. **2025**
Co-drafted Code of Conduct for Terrestrial Ecosystem Science – Science Focus Area FY24-FY28. Oak Ridge National Laboratory. Oak Ridge, Tennessee, U.S.A. **2024**

Outreach

“Plant Soil Interactions”. Talk and Q&A. Shannon Jones, Matthew Berens, **Sören Eliot Weber.** North Middle School Lenoir City, TN USA. April 2024
“Mycorrhizal Mutualisms”. Talk and Q&A. **Sören Eliot Weber.** South Carolina Governors School for Science & Math, Hartsville SC USA. March 2023

Society Membership

Ecological Society of America	since 2012
International Mycorrhiza Society	since 2022
National Postdoctoral Association	since 2022
American Geophysical Union	since 2023

Languages

English (fluent), **German** (conversational), **Spanish** (basic)
R (fluent in both tidyverse and base), **Bash** (basic)