

DR. ANNA K. SCHWEIGER

Assistant Professor of Remote Sensing

Montana State University, Department of Land Resources and Environmental Sciences

EDUCATION

- 2015 PhD Geography, University of Zurich, Switzerland
Thesis title: Ecological applications of imaging spectroscopy in alpine grasslands
- 2010 MSc Wildlife Ecology, University of Natural Resources and Applied Life Sciences Vienna, Austria
Thesis title: Small-scale habitat use of rock ptarmigan and black grouse in the Austrian Alps
- 2007 BSc Biodiversity and Ecology, University of Graz, Austria

EXPERIENCE

- 2023 Software Engineer. ETH Zurich, Switzerland, Prof. Thomas Crowther
- 2020—2023 Postdoctoral Researcher. University of Zurich, Switzerland, Dr. Roger Keller
- 2019—2020 Postdoctoral Researcher. Université de Montréal, Canada, Prof. Etienne Laliberté
- 2015—2019 Postdoctoral Researcher. University of Minnesota, Prof. Jeannine Cavender-Bares
- 2010—2015 Research and Geoinformation Department. Swiss National Park, Dr. Rudolf Haller, Dr. Flurin Filli
- 2010—2011 Laboratory technician. Swiss Federal Institute for Forest, Snow and Landscape Research, Dr. Anita C. Risch
- 2008—2009 Research Assistant. Small-mammal, rock ptarmigan, and black grouse census. University of Natural Resources and Applied Life Sciences Vienna, Austria, Dr. Ursula Nopp-Mayr

PUBLICATIONS SINCE 2022

38. Schweizer J., Hauser L.T., Gholizadeh H., **Schweiger A.K.** & Rossi C., 2026. Testing the accuracy and transferability of remotely sensed biomass models across heterogeneous grasslands. *Remote Sensing of Environment (accepted)*
37. Montoya-Sánchez, V., **Schweiger, A.K.**, Schlund, M., Brant Paterno, G., Erasm, S., Kreft, H., Hölscher, D., Brambang, F., Bambang, Irawan, B., Sundawatii, L. & Zemp, D.C., 2025. Spectral characterization of plant diversity in an enriched oil palm plantation. *Remote Sensing in Ecology and Conservation*. <https://doi.org/10.1002/rse2.70034>
36. Pinto-Ledezma, J., **Schweiger, A.K.**, Guzmán Q., J.A. & Cavender-Bares, J. 2025. Plant diversity across dimensions: coupling biodiversity measures from the ground and the sky. *Science Advances* 11, eadr0278. <https://doi.org/10.1126/sciadv.adr0278>
35. Wang, Z., Townsend, P., Kruger, E. & **Schweiger, A.K.** 2024. Quantifying foliar trait variation and covariation in sun and shade leaves using leaf spectroscopy in eastern North America. *Forest Ecosystems* 11:100230. <https://doi.org/10.1016/j.fecs.2024.100230>
34. MacDougall A., Esch E., Ohlert, T., Chen Q., Carrol O., Bonner C., Seabloom E., Siewart M., **Schweiger A.K.**, et al. 2024. Widening global variability in grassland biomass since the 1980s. *Nature Ecology & Evolution*. <https://doi.org/10.1038/s41559-024-02500-x>
33. Külling N., Adde A., Fopp F., **Schweiger A.K.**, Broennimann O., Rey P.-L., Giuliani G., Goicolea T., Petitpierre B., Zimmermann N.E., Pellissier L., Altermatt F., Lehmann A. & Guisan A. 2024. SWECO25: a cross-thematic raster database for ecological research in Switzerland. *Scientific Data*. <https://doi.org/10.1038/s41597-023-02899-1>
32. Jantzen J., Laliberté E., Carteron A., Beauchamp-Rioux R., Blanchard F., Crofts A., Girard A., Hacker P., Pardo J., **Schweiger A.K.**, Demers-Thibeault S., Coops N, Kalacska M., Vellend M. & Bruneau A., 2023. Evolutionary history explains foliar spectral differences between mycorrhizal types. *New Phytologist* 238: 2651-2667. <https://doi.org/10.1111/nph.18902>
31. Adde A., Rey P.-L., Fopp F., Petitpierre B., **Schweiger A.K.**, Broennimann O., Lehmann A., Zimmermann N.E., Altermatt F., Pellissier L. & Guisan A., 2023. Too many candidates: embedded covariate selection procedure for species distribution modelling with the covsel R package. *Ecological Informatics* 75, 102080. <https://doi.org/10.1016/j.ecoinf.2023.102080>
30. Kothari S., Beauchamp-Rioux R., Blanchard F., Crofts A., Girard, A., Guilbeault-Mayers X., Hacker P., Pardo J., **Schweiger A.K.**, Demers-Thibeault S., Bruneau A, Coops N., Kalacska M., Vellend M. & Laliberté E., 2023. Predicting leaf traits across functional groups using reflectance spectroscopy. *New Phytologist*, 238: 549-566. <https://doi.org/10.1111/nph.18713>
29. Kothari S. & **Schweiger A.K.**, 2022. Grime review: Plant spectra as integrative measures of plant phenotypes. *Journal of Ecology* 00, 1– 19. <https://doi.org/10.1111/1365-2745.13972>

28. **Schweiger A.K.** & Laliberté E., 2022. Plant beta-diversity across biomes captured by imaging spectroscopy. *Nature Communications* 13, 2767, <https://doi.org/10.1038/s41467-022-30369-6>
27. Risch A.C., Page-Dumroese D.S., **Schweiger A.K.**, Beattie J., Curran M.P., Finer L., Firn J.L., Hyslop M.D., Lembrechts, J., Schütz M., Wang W.W., Terry T.A. & Jurgensen M.F., 2022. Global controls of wood decomposition on and in forest soils. *Frontiers in Forests and Global Change* 5, <https://doi.org/10.3389/ffgc.2022.829810>
26. Sapes G., Lapadat C., **Schweiger A.K.**, Juzwik J., Montgomery R., Gholizadeh H., Townsend P.A., Gamon J.A. & Cavender-Bares J., 2022. Canopy spectral reflectance detects oak wilt decline at landscape scale using phylogenetic discrimination. *Remote Sensing of Environment* 273, 112961, <https://doi.org/10.1016/j.rse.2022.112961>
25. Cavender-Bares J., **Schweiger A.K.**, Townsend P.A., Gamon J.A., Madritch M.D., Gholizadeh H., Wang Z., Helzer K. & Hobbie S.E., 2022. Remotely detected aboveground plant function predicts belowground processes in two prairie diversity experiments. *Ecological Monographs* 00(00):e01488. <https://doi.org/10.1002/ecm.1488>

TEACHING

GPHY 426 Remote Sensing, Montana State University
 GPHY 429R/ LRES 525 Applied Remote Sensing, Montana State University

CURRENT RESEARCH FUNDING

2025–29	NSF-IOS Investigating drought recovery mechanisms using plant carbon dynamics and foliar spectroscopy, Co-PI.
2024–29	USDA-AMS Early prediction of maple syrup quality using carbon dynamics spectroscopy, PI.
2024–27	NASA-ROSES Earth Surface Mineral Dust Source Investigation (EMIT) Science and Applications Team: Remote sensing of biodiversity across trophic levels, PI.
2025–26	Montana Water Center, USGS: From Probes to Pixels: Scaling-up soil water content monitoring across Montana, Co-PI.

SELECTED SERVICE

2024	NASA ROSES Program. Review Panel
2024	USDA NIFA. Review Panel
2023	New Phytologist Next Generation Scientists Meeting. Review Panel
2023–present	New Phytologist Advisory Board
2021–25	<i>Journal of Ecology</i> . Associate Editor – Earth System Science