

Miles A. Moore

PhD Student, Ecology & Evolutionary Biology · DOE Computational Science Graduate Fellow

University of Colorado Boulder · Institute of Arctic and Alpine Research · Boulder, CO

miles.moore-1@colorado.edu · milesalanmoore.github.io · github.com/milesalanmoore · ORCID 0009-0003-0173-7602

EDUCATION

- 2024 – 2029
(expected) **Ph.D., Ecology & Evolutionary Biology**
University of Colorado Boulder
Advisors: Nancy C. Emery · Committee: Laura Dee, Brett Melbourne, Stephen Kissler
Graduate coursework: Computational Bayesian Statistics; Numerical Linear Algebra; High-Performance Scientific Computing; Neural Networks & Deep Learning; Causal Inference; Machine Learning for Ecology; Spatial Ecology
- 2022 – 2023 **B.A., Ecology & Evolutionary Biology**
University of Colorado Boulder
Summa cum laude, with distinction · GPA 4.0 · Certificate in GIS & Computational Science
Honors thesis: *Satellite eyes on alpine skies: A comparative study of modeled and remotely sensed vegetation indices using 21 years of field data*
- 2019 – 2021 **A.S., Biology**
Front Range Community College, Westminster, CO

PROFESSIONAL EXPERIENCE

- 2025 – present **DOE Computational Science Graduate Fellow**
Dept. of Energy & Krell Institute
- 2025 **Graduate Research Assistant**
Earth Lab, Cooperative Institute for Research in Environmental Sciences, Boulder, CO
Supervisors: M. F. Oldfather (USGS), A. Post
- 2025 **Graduate Research Assistant**
Niwot Ridge LTER, Institute of Arctic and Alpine Research, Boulder, CO
Supervisors: N. C. Emery (Summer 2025), S. C. Elmendorf (Spring 2025)
- 2024 – 2025 **Visiting Scientist**
National Center for Atmospheric Research (UCAR), Boulder, CO
- 2024 **Professional Scientist I (Research Faculty)**
Institute of Arctic and Alpine Research, Boulder, CO
- 2023 **Remote Sensing Intern**
NASA Goddard Space Flight Center, Arctic-Boreal Vulnerability Experiment (ABoVE), Greenbelt, MD
- 2021 – 2023 **Data Science Research Technician**
Institute of Arctic and Alpine Research, Boulder, CO
- 2021 **Field Research Technician**
Niwot Ridge Long Term Ecological Research Site, Boulder, CO

PEER-REVIEWED PUBLICATIONS

[†] Joint first authorship.

Published & accepted

- 2026 **Moore, M. A.**, Emery, N. C., & Elmendorf, S. C. Divergent regional trends in alpine tundra productivity linked to changes in snow-free season length and summer warming. *Environmental Research: Ecology*, 5(2), 025007. doi:10.1088/2752-664X/ae6d04
- Accepted **Moore, M. A.[†]**, Hoy, E. E.[†], Clayton, L. K., Schaefer, K., Bourgeau-Chavez, L. L., et al. In-situ soil moisture and active layer thickness in Alaska and northwestern Canada, 2005–2024. *Scientific Data*.
- Accepted Elmendorf, S. C., Hulke, B. S., Clark, E. I., **Moore, M. A.**, Khoury, C. K., & Kane, N. C. Geographical disparities in sunflower yield improvement and environmental effects in the Great Plains predict challenges to crop improvement. *Field Crops Research*.
- 2025 Clark, E. I., **Moore, M. A.**, Khoury, C. K., Hulke, B. S., Kane, N. C., & Elmendorf, S. C. Climate drives variation in optimal phenology: 46 years of multi-environment trials in sunflower. *New Phytologist*. doi:10.1111/nph.70790

In review & submitted

- In review Elmendorf, S. C., Clark, E. I., Pardue, A., **Moore, M. A.**, Matthiesen, L., Lingsfelder, J., Ostlie, M., Forster, S., Rickertsen, J., Staricka, J., Worral, H. M., Khoury, C. K., Kane, N. C., & Hulke, B. S. Forty-six years of sunflower multi-environment trials in the Great Plains. *Scientific Data*.
- In review Garcia, S. R., Laubach, Z. M., Keller, K. P., **Moore, M. A.**, Meredith Joy, I. J., & Safran, R. J. Scale- and stage-dependent effects of temperature, light, and urbanization on barn swallow (*Hirundo rustica*) breeding performance and nestling development. *Urban Ecosystems*.
- Submitted Innes, P., McNellie, J. P., Clark, E. I., **Moore, M. A.**, Keepers, K. G., Elmendorf, S. C., Hulke, B. S., & Kane, N. C. Genetic control of phenology and phenological plasticity are decoupled in cultivated sunflower.

NON-REFEREED PUBLICATIONS & DATA PRODUCTS

- 2025 **Moore, M. A.**, Schaefer, K., Clayton, L. K., Hoy, E. E., Auclair, M., Bakian-Dogaheh, K., Battaglia, M. J., Bennett, K., Bolton, W. R., Bourgeau-Chavez, L. L., . . . , Zhao, Y., & Zwieback, S. ABoVE: Soil moisture and active layer thickness in Alaska, USA and Canada, 2005–2022. ORNL DAAC. doi:10.3334/ORNLDAAC/2369
- 2025 White, C. T., Morse, J. F., Brandes, H., Chowanski, K., Kittel, T., Losleben, M., & **Moore, M. A.** Homogenized, gap-filled daily air temperature and infilled precipitation data for Saddle, 1981–ongoing. Environmental Data Initiative. doi:10.6073/pasta/49a2171ec028c4ddef298752bc9ebe8d; doi:10.6073/pasta/8caa444276521b797e4a16485dc0e137
- 2025 Kittel, T., White, C., Hartman, M., Chowanski, K., Ackerman, T., Williams, M., Losleben, M., & **Moore, M. A.** Infilled daily air temperature and precipitation data for the C1 and D1 chart recorders, 1952–ongoing. Environmental Data Initiative (4 data packages).
- 2024 **Moore, M. A.**, Orellana-Soto, M. E., Hartman, N. R., & Kane, N. C. *Helianthus agrestis* isolate USDA PI 673199 chloroplast, complete genome. NCBI Nucleotide, accession NC_086875.1.
- 2022 **Moore, M. A.** & Brigham, L. M. Trends in alpine ecology: The role of microclimates in determining alpine plant response to climate change. *Aquilegia: Magazine of the Colorado Native Plant Society*, 46(3), 20–23.

PRESENTATIONS

*Presented by a co-author.

Oct 2026	Moore, M. A. , Chapman, T. B., Kimmel, K., McIntosh, T. L., & Dee, L. E. Research co-production and climate adaptation: Evaluating low-tech process-based restoration in the Upper Gunnison Basin, Colorado. <i>CU Sustainability Research Summit</i> , Boulder, CO. (talk)
Sep 2026	Moore, M. A. , Hulke, B. S., Kane, N. C., & Elmendorf, S. C. Genotypic variation in thermal optima determines phenological trajectories in cultivated sunflower. <i>Guild of Rocky Mountain Ecologists & Evolutionary Biologists</i> , Nederland, CO. (talk)
Jul 2026	Moore, M. A. , Hulke, B. S., Kane, N. C., & Elmendorf, S. C. High-performance computing enabled generative models of flowering in cultivated sunflower. <i>DOE CSGF Annual Program Review</i> , Washington, D.C. (poster)
Jun 2026	Elmendorf, S. C. *, et al. Quantifying the ups and downs of sunflower production: Understanding the impact of climate variability on the success of your sunflower crop. <i>National Sunflower Association National Meeting</i> , Fort Lauderdale, FL. (talk)
Jun 2026	Innes, P. *, . . . , Moore, M. A. , . . . Genetic control of phenology and plasticity in sunflower across six diverse field environments. <i>Population, Evolutionary & Quantitative Genetics Conference (GSA)</i> , Pacific Grove, CA. (talk)
July 2025	Moore, M. A. , Lesslauer, A. Assessing variation in heat resistance of alpine plants among species and within populations. <i>Alpfor Alpine Field Ecology Summer School</i> , ETH Zürich, Realp, Switzerland. (talk)
Dec 2023	Moore, M. A. , Hoy, E. E., Griffith, P. C., Schaefer, K. M., & Bourgeau-Chavez, L. L. From field to air: Integrating field data in support of the ABoVE Airborne Campaign. <i>AGU Fall Meeting</i> , San Francisco, CA, B31B-08. (talk)
2023	Moore, M. A. & Hoy, E. E. From field to air: Integrating field data in support of the NASA ABoVE Airborne Campaign. <i>NASA Biospheric Sciences Brown Bag Seminar</i> , Goddard Space Flight Center, Greenbelt, MD. (invited talk)

GRANTS, FELLOWSHIPS & AWARDS

2025 – 2029	Dept. of Energy Computational Science Graduate Fellowship , Krell Institute	\$200,000
2024	Research Assistantship , CIRES Cooperative Institute for Research in Environmental Sciences, CU Boulder	\$13,684
2025	Research Assistantship , Institute of Arctic and Alpine Research	\$13,684
2025	NSF Graduate Research Fellowship Program , Honorable Mention	
2024	NSF Graduate Research Fellowship Program , Honorable Mention	
2023	Jacob Van Ek Scholarship , CU Boulder One of the college's highest honors – awarded for academic achievement and depth of service	\$3,000
2023	Undergraduate Research Opportunities Program Grant , CU Boulder Environmental effects on the resource acquisition strategies of a native facultative root hemiparasite, <i>Castilleja occidentalis</i>	\$3,000
2022	Alice Eastwood Scholarship , Colorado Native Plant Society	\$950
2022	Undergraduate Research Opportunities Program Grant , CU Boulder Effects of environmental heterogeneity on the distribution of a hemiparasitic plant in the alpine tundra	\$3,000

TEACHING

Fall 2024	Graduate Teaching Assistant, EBIO 4410/5410 Biological Statistics University of Colorado Boulder (instructor: P. Johnson) Co-developed curriculum for the graduate lab section: selected weekly readings and led 30-minute discussions on p-values (ASA statement), causal inference, spatiotemporal models, researcher degrees of freedom, reproducibility, and Bayesian methods.
Spring 2021 – Fall 2021	Student Learning Assistant, General Biology II Front Range Community College, Westminster, CO

DEI & OUTREACH

2026	Research co-production, Upper Gunnison Basin The Nature Conservancy & Upper Gunnison River Basin Water Conservation District Facilitated a stakeholder meeting with land managers and partners (10–15 attendees) to co-produce research goals; drafted a technical proposal and plain-language summary for private landowners; negotiated data-sharing agreements.
2026	Reverse Science Fair, Denver-area high school Presented research in accessible language and discussed science, education, and equity with dozens of students (EBIO 6100 Science Communication).
2025	Public media: research with the Emery Lab and Niwot Ridge LTER featured on NPR.
2023	Invited Panelist, Fall Leadership Summit, Center for Leadership, CU Boulder
2023	Participant, Environmental Data Science Inclusion & Innovation Lab, CIRES, CU Boulder

SERVICE

2025 – 2026	Co-Chair, EBIO Colloquium Committee (departmental seminar series; ~\$20k budget)
2026	Co-Chair, EBIO Graduate Student Association
2025 – 2026	Department Representative, Graduate & Professional Student Government; Awards & Grants Committee, University of Colorado Boulder
2025 – 2026	Peer Reviewer: <i>Philosophical Transactions of the Royal Society B</i> ; <i>EGU Biogeosciences</i>
2024	Volunteer Field Botanist: <i>City of Denver</i> , rare plant survey at <i>Mt. Bluesky, Colorado</i>
2021	AmeriCorps Volunteer, Rocky Mountain Conservancy

SELECTED SCIENTIFIC SKILLS

Statistics	Hierarchical Bayesian modeling; state-space and latent-variable models; time-to-event and interval-censored survival analysis; hidden Markov models; Gaussian processes (incl. phylogenetic Ornstein–Uhlenbeck); causal inference (synthetic control, modern difference-in-differences); HMC diagnostics and Bayesian workflow
Computing	R, Stan (cmdstanr), Python; high-performance and parallel computing; numerical linear algebra; machine learning and deep learning; research software engineering (Git, testing, packaging, reproducible pipelines)
Remote sensing	Landsat, Sentinel-2, MODIS, airborne SAR; Google Earth Engine; GIS
Field	Alpine and arctic plant phenology monitoring; experimental design in global-change field experiments (Niwot Ridge Turf Transplant Experiment); in-situ soil moisture and active-layer surveys