David Fastovich

210 Fields Street Room 103, Athens, GA · fastovich@uga.edu · ecvlab.uga.edu

Academic Appointments

Assistant Professor 2025 – present
Department of Geography, University of Georgia

Postdoctoral Scholar 2022 – 2025
Department of Earth and Environmental Sciences, Syracuse University
Advisor: Tripti Bhattacharya

Education

Ph.D. in Geography, University of Wisconsin—Madison 2022
Dissertation: *Patterns, mechanisms, and legacies of abrupt climate change: examining the Younger Dryas in eastern North America*
Advisor: John (Jack) W. Williams

M.S. in Geography, University of Wisconsin—Madison 2018
Thesis: *Temperature controls on no-analog community establishment in the Great Lakes Region*
Advisor: John (Jack) W. Williams

B.S in Environmental Science and Management *with honors*, 2016
University of California, Davis
Academic Emphasis: Climate Change and Air Quality
Minor: Biological Sciences

Research Interests

Paleoclimatology, paleoecology, big data synthesis, climate dynamics, climate change impacts, organic biomarkers, isotope geochemistry, proxy-based climate reconstructions

Teaching Interests

Quaternary paleoclimatolgoy and paleoecology, paleoclimate dynamics, organic geochemistry, biogeography, physical geography, isotope geochemistry, data science

Funding

CAIG: Improving Last Glacial Maximum Paleoclimate Estimates with Generative Diffusion to Locate Broadleaf Tree Refugia. PI: David Fastovich, PI: Weiming Hu, $597,693, in prep — in prep, to be submitted Jan. 2026

Advancing multidecadal hydroclimate predictability in the southeastern United States by testing vegetationhydroclimate coupling theories using highresolution Holocene observations and Earth System Models. PI: David Fastovich, co-PI: David Porinchu, David Leigh, National Science Foundation — in-prep

Evaluating impacts of ecosystem transformation on military testing and training lands of the southeast United States: Fort Stewart and MCRDS Parris Island. PI: Debra Willard, co-PI: David Fastovich, Miriam Jones, $226,320, Strategic Environmental Research and Development Program — submitted

Haar Fluctuation Analysis for Quantifying Compound Extreme Event Risk Across Timescales. PI: David Fastovich, $65,000, Center for Innovation in Risk, Catastrophes, and Decisions — submitted

Identification of Keystone Factors in the Development and Maintenance of the Longleaf Pine Savanna Ecosystem using a variety of Paleoecology and Anthropological Methods. PI: John Williams, Rachel Jones, Tyler Karp, Tripti Bhattacharya, co-PI: David Fastovich, Strategic Environmental Research and Development Program — funded, in contracting phase

From Prediction to Protection: Advanced Forecasting for Georgia's Infrastructure, Agriculture, and Emergency Response. PI: Weiming Hu co-PI: David Fastovich (co-author), Pam Knox, Michelle Ritchie, Alysha Helmrich, Don Nelson, Jerry Shannon, Kayla Anderson, $6,000, University of Georgia — 2026

Disentangling dynamical controls on deglacial hydroclimate in eastern North America. PI: Tripti Bhattacharya, co-PI: David Fastovich (lead author), $547,086, NSF — 2024 – 2027

Expanding Science Outreach Programming through the Natural Science Explorers Program. PI: Katie Becklin, Heather Coleman, co-PI: Dana Adcock, David Fastovich (lead author), Tyler Logie, Valeria Perez, Claire Rubbelke, Allie Thompson, $10,000, Sustaining Engagement Grant, Syracuse University — not funded

Publications

13. Bhattacharya, T., **Fastovich, D.**, Maupin, C., Thompson, A.E., Feng, R., Zhu, J., McClymont, E.L., Bong, H., LeGrande, A.N., Dee, S.G. and Fiorella, R.P., (in revision). Leaf wax hydrogen isotopes reflect storm track position over western North America. Paleoceanography and Paleoclimatology.
12. **Fastovich, D.**, Sun, C., Bhattacharya, T., Jackson, S.T., Krause, T.R., Russell, J.M.,

& Williams, J.W., (in prep). Millennial-scale North Atlantic Subtropical High variability recorded in leaf waxes.

11. **Fastovich, D.**, Bhattacharya, T., Feng, R., Mayer, T., & Zhu, J. (in prep). Western Pacific Warm Pool hydroclimate variability across the intensification of Northern Hemisphere glaciation.
10. Kim, H., **Fastovich, D.**, Bhattacharya, T. & Tuttle, S., (2025). Improving predictions of snow resources using midlatitude SSTs with convergent cross mapping. Environmental Research: Climate, 4(2), p.021001.
9. **Fastovich, D.**, Meyers, S.R., Saupe, E.E., Williams, J.W., Dornelas, M., Dowding, E.M., Finnegan, S., Huang, H.H.M., Jonkers, L., Kiessling, W. and Kocsis, Á.T., ..., (2025). Coupled, decoupled, and abrupt responses of vegetation to climate across timescales. Science, 389(6755), pp.64-68.
8. **Fastovich, D.**, Bhattacharya, T., Pérez-Ángel, L. C., Burls, N. J., Feng, R., Knapp, S., & Mayer, T. (2024). Large-scale sea surface temperature gradients govern westerly moisture transport in western Ecuador during the Plio-Pleistocene. Earth and Planetary Science Letters, 640, 118781.
7. **Fastovich, D.**, Radeloff, V. C., Zuckerberg, B., & Williams, J. W. (2024). Legacies of millennial-scale climate oscillations in contemporary biodiversity in eastern North America. Philosophical Transactions of the Royal Society B, 379(1902), 20230012.
6. Smith, J., Rillo, M. C., Kocsis, Á. T., Dornelas, M., **Fastovich, D.**, Huang, H. H. M., ... & Hull, P. M. (2023). BioDeepTime: A database of biodiversity time series for modern and fossil assemblages. Global Ecology and Biogeography, 32(10), 1680-1689.
5. Willard, D. A., Jones, M. C., Alder, J., **Fastovich, D.**, Hoefke, K., Poirier, R. K., & Wurster, F. C. (2023). Roles of climatic and anthropogenic factors in shaping Holocene vegetation and fire regimes in Great Dismal Swamp, eastern USA. Quaternary Science Reviews, 311, 108153.
4. **Fastovich, D.**, Russell, J. M., Marcott, S. A., & Williams, J. W. (2022). Spatial fingerprints and mechanisms of precipitation and temperature changes during the Younger Dryas in eastern North America. Quaternary Science Reviews, 294, 107724.
3. Jensen, A. M., **Fastovich, D.**, Watson, B. I., Gill, J. L., Jackson, S. T., Russell, J. M., ... & Williams, J. W. (2021). More than one way to kill a spruce forest: The role of fire and climate in the lat-glacial termination of spruce woodlands across the southern Great Lakes. Journal of Ecology, 109(1), 459-477.
2. **Fastovich, D.**, Russell, J. M., Jackson, S. T., Krause, T. R., Marcott, S. A., & Williams, J. W. (2020). Spatial fingerprint of Younger Dryas cooling and warming in eastern North America. Geophysical Research Letters, 47(22), e2020GL090031.
1. **Fastovich, D.**, Russell, J. M., Jackson, S. T., & Williams, J. W. (2020). Deglacial temperature controls on no-analog community establishment in the Great Lakes Region. Quaternary Science Reviews, 234, 106245.

Invited Talks and Symposia

Lamont-Doherty Earth Observatory, Columbia University 2024
Division of Biology and the Paleo Environment Seminar
Examining patterns, mechanisms, and legacies of past climate changes

Yale University 2023
Department of Earth & Planetary Sciences Seminar
Examining patterns, mechanisms, and legacies of abrupt paleoclimate change

American Quaternary Association Biennial Meeting 2022
Spatial fingerprints and mechanisms of temperature and precipitation changes during the Younger Dryas in eastern North America

Woods Hole Oceanographic Institution 2021
Climate and Paleo Seminar
Spatial fingerprint and mechanisms of Younger Dryas warming and wetting in eastern North America

Awards and Honors

Vice President for Research Postdoctoral Award for Excellence in Research and Creative Work (*$750*) 2024

Union for Quaternary Research Congress Travel Grant (*€2,000*) 2023

The National Academies of Sciences, Engineering, and Medicine International Travel Grant (*$1,000*) 2023

Presidential Management Fellowship Finalist 2021
Fellowship created by Executive Order to bring promising early-career scientists into public policy development and management. Awarded to 1,100 promising early-career scientists from 8,065 applicants.

EarthCube Early Career Travel Grant (*$1,500*) 2021

Department of Geography Trewartha Travel Grant (*$500*) 2021

University of Wisconsin Graduate School Student Conference Travel Award (*$500*) 2021

Department of Geography Olmstead Award for Outstanding Publication (*$500*) 2021
Awarded annually to two individuals in recognition of impactful publication within the field of Geography.

College of Letters and Science Teaching Fellow Award (*$1,500*) 2020
Awarded annually to 15 Teaching Assistants among all within the College of Letters and Science in recognition of excellent teaching, facilitation, and communication.

Reid Bryson Poster Competition Runner Up (*$500*) 2021

Department of Geography Trewartha Travel Grant (*$500*) 2019

University of Wisconsin Graduate School Student Conference Travel Award (*$1,200*) 2019

John M. Long Endowed Scholarship (*$6,000*) 2015

Presentations and Posters

12. **Fastovich, D.**, Sun, C., Bhattacharya, T., Jackson, S.T., Krause, T.R., Russell, J.M., & Williams, J.W., (2025). Millennial-scale North Atlantic Subtropical High variability recorded in leaf waxes. American Geophysical Union Annual Meeting. Presentation.
11. **Fastovich, D.**, Bhattacharya, T., Pérez-Ángel, L. C., Burls, N. J., Feng, R., Knapp, S., & Mayer, T. (2024). Large-Scale Sea Surface Temperature Gradients Govern Moisture Transport In Western Ecuador During The Plio-Pleistocene. American Union for Quaternary Research. Presentation.
10. **Fastovich, D.**, Bhattacharya, T., Feng, R., & Mayer, T. (2023). Pliocene variability in the strength of the Pacific Walker Circulation. International Union for Quaternary Research. Presentation.
9. **Fastovich, D.**, Bhattacharya, T., Feng, R., & Mayer, T. (2022). Pliocene variability in the strength of the Pacific Walker Circulation. American Geophysical Union. Poster.
8. **Fastovich, D.**, Helmers, D., Radeloff, V., Zuckerberg, B., & Williams, J.W. (2022). Detecting legacies of millennial scale climate oscillations on modern biodiversity: lessons from a proxy-model comparison. American Geophysical Union. Poster.
7. **Fastovich. D,**, Russell, J.M., Marcott, S.A., & Williams, J.W. (2021). Spatial fingerprints and mechanisms of temperature and precipitation changes during the Younger Dryas in eastern North America. American Geophysical Union. Poster.
6. **Fastovich, D.**, Russell, J.M., Marcott, S.A., & Williams, J.W. (2021). Spatial fingerprints and mechanisms of temperature and precipitation changes during the Younger Dryas in eastern North America. Geological Society of America. Presentation.
5. **Fastovich, D.**, Marcott, S.A., Russell, J.M., & Williams, J.W. (2020). Mechanisms for a spatial fingerprint of Younger Dryas warming in the southeastern United States. American Geophysical Union. Virtual Poster.
4. **Fastovich, D.**, Russell, J.M., Jackson ST, Krause TR, Marcott, S.A., & Williams, J.W. (2019). Spatial fingerprint of temperature changes in eastern North America during the Younger Dryas. American Geophysical Union. Poster.

3. **Fastovich, D.**, Russell, J.M., Jackson ST, Krause TR, Marcott, S.A., & Williams, J.W. (2019). Spatial fingerprint of temperature changes in eastern North America during the Younger Dryas. International Union for Quaternary Research. Presentation.
2. **Fastovich, D.**, Williams, J.W., Russell, J.M., Jackson, S.T., & Krause, T.R. (2018). Spatial fingerprint of temperature changes in eastern North America during the Younger Dryas. American Geophysical Union. Poster.
1. **Fastovich, D.**, Russell, J.M., Jackson, S.T., Lowell, T., & Williams, J.W. (2018). Abrupt deglacial temperature and vegetation changes reconstructed from brGDGT and pollen at Bonnet Lake, OH. Ecological Society of America. Presentation.

Research Experience

Graduate Research Assistant 2016 – 2022
John W. Williams - Paleoecology Lab
University of Wisconsin - Madison

Undergraduate Research Assistant 2015 – 2016
Andy Sih - Behavioral Ecology Lab
University of California, Davis

Undergraduate Research Assistant 2015 – 2016
Alan Hastings - Theoretical Ecology Lab
University of California, Davis

Teaching Experience

Instructor of Record, Introduction to Physical Geography Fall 2025
Entry-level course that covers the components of the Earth system. Average student rating: 4.32/5.0.
University of Georgia

Instructor of Record, Climatic Environments of the Past Fall 2021
Upper-level course that introduces climate history of the last 5,000,000 years alongside the proxy and modeling tools used by climate scientist. Average student rating: 4.85/5.0.
University of Wisconsin - Madison

Instructor of Record, The Global Environment Spring 2021
Entry-level course that covers the components of the Earth system. Average student rating: 4.6/5.0.
Middlebury College

Teaching Assistant, Introduction to the Earth System 2017 – 2020, 2022
Average student rating: 4.70/5.0.
University of Wisconsin - Madison
Head Teaching Assistant (3 years) and Teaching Assistant (1 year).

Teaching Assistant, Physical Systems of the Environment 2016
Average student rating: 4.52/5.0.
University of Wisconsin — Madison

Service to Profession

Peer Reviewer: Proceedings of the National Academy of Sciences, Geophysical Research Letters, Journal of Quaternary Science, Ecosphere, Paleoceanography and Paleoclimatology, PLOS One, Journal of Quaternary Science, Earth-Science Reviews, Science of the Total Environment, Quaternary Science Reviews, Frontiers of Biogeography, Climatic Change, National Science Foundation (P4CLIMATE), Journal of Geophysical Research - Atmospheres, Global and Planetary Change, Geology, Nature Communications, Nature Geoscience, Science Advances

American Geophysical Union 2025
Search Committee: Editor in Chief (Paleoceanography and Paleoclimatology)

American Geophysical Union Primary Session Convener 2024
Climate Reconstruction from the Pacific Region: Insights into Past Oceanic and Atmospheric Conditions

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Steering Committee 2023 – present
Integrating Ice Core, Marine, and Terrestrial Records (INTIMATE) Network

Student Liaison 2018 – 2020
Ecological Society of America Paleoecology Section

Service to the University of Georgia

Geography Department 2025
Search Committee: Editor in Chief (Paleoceanography and Paleoclimatology)

American Geophysical Union Primary Session Convener 2024
Climate Reconstruction from the Pacific Region: Insights into Past Oceanic and Atmospheric Conditions

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Ecological Society of America Paleoecology Section

Science Outreach

Syracuse University - Natural Science Explorers Program Leadership Committee 2022 – 2025

Technical Skills

Software

LaTeX, Git, Docker, Binder, HYSPLIT, ArcGIS Pro, GRASS GIS, HTCondor, SLURM, Singularity/Apptainer, Unix for High Throughput/Performance Computing

Programming languages

Expert in: R, Python, bash/zsh
Familiar with: Rust, MATLAB

Natural Languages

English (fluent), Russian (fluent)