William Rudisill, Ph.D.

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Education

Boise State University, Ph.D. Geophysics 2022
Boise State University, M.S. Hydrological Sciences 2018
University of North Carolina at Chapel Hill, B.S. Geology 2015

Appointments

Postdoctoral Research Fellow, Lawrence Berkeley National Laboratory 2022–present
Research Scientist, ATA Aerospace 2022
Graduate Research Assistant, Boise State University 2016–2022

Professional Activities

- Member, American Geophysical Union
- Reviewer: *Journal of Hydrometeorology*, *Earth Interactions*, *Climate Dynamics*, *JGR: Atmospheres*, more.
- Reviewer, NASA Terrestrial Hydrology Program (2024)
- Reviewer, California Climate Assessment Report (2025)

Grants and Funding

US DOE ASR	*Surface Energy Balance Closure Studies ...*	2024	Co-PI
LBNL EESA Division	*Examining the Symmetry of Daily...*	2023	PI

Awards and Fellowships

- US DOE SCGSR Program (2022)
  Examining the Hydrologic Implications of WRF Physics Parameterization Decisions in the East River, Colorado

Invited Talks

- Desert Research Instite Hydrology Division (2026): *Controls on the Snowpack Energy Budget and Hydroclimate in the Upper Colorado River Basin: Insights from the SAIL Field Campaign*
- University of Saskatchewan SUMMA Working Group, Virtual (2025): *The Future of HoarFrost in the Upper Colorado River Basin*
- NCAR Snow Affinity Group Meeting, Virtual (2024): *Are atmospheric models too cold in the mountains?*
- AGU Fall Meeting, Session GC23E–0301, Washington, D.C. (2024): *Are atmospheric models too cold in the mountains?*

Conference Organizing

- Co-convener, Session C33C, AGU Fall Meeting (2025)
- Co-convener, Session C33C, AGU Fall Meeting (2024)
- Early Career Convener, Session H44C, AGU Fall Meeting (2023)

Teaching & Mentorship

- Mentor: LBNL SULI internship program (2 mentees, 2024)
- Mentor: LBNL RENEW internship program (1 mentee, 2024)
- Teaching Assistant: Hydrologic Modeling and Remote Sensing, Boise State University (2022)

Service and Outreach

- Founding Member and Faculty Liaison, Boise State University Geoscience Graduate Student Organization (2020).
- Student Advisor, Boise State University Diversity Equity and Inclusivity Initiative (2021-2022)
- Guest Lecturer — Sugar Bowl Academy Earth Science 10th grade class (May 2023).
- Co-editor, *Mountain Views Chronicle* (2024)

Publications

Jackson, R. (2026). "Surface Quantitative Precipitation Estimates (SQUIRE) of Snow Water Equivalent from the Surface Atmospheric Integrated Field Laboratory". *Journal of Atmospheric and Oceanic Technology* 43.1, pp. 77–93.

Abolafia-Rosenzweig, R. (2025). "Snow cover plays a non-dominant role in WRF/Noah-MP simulated surface air temperature cold biases over the western US". *Journal of Geophysical Research: Atmospheres* 130.22, e2025JD044191.

Akor, S. (2025). "Impact of cloud microphysics schemes and boundary conditions on modeled snowpack in the Central Idaho Rocky Mountains, USA". *Water Resources Research* 61.12, e2025WR040710.

Rudisill, **W.** (2025). "Seasonality and Albedo Dependence of Cloud Radiative Forcing in the Upper Colorado River Basin". *J. Geophys. Res.* 130.6, e2024JD042366. DOI: 10.1029/2024JD042366.

Zhou, Y. (2025). "Atmospheric river frequency-category characteristics shape U.S. west coast runoff". *J. Geophys. Res.* 130.2, e2024JD041805. DOI: 10.1029/2024jd041805.

Rhoades, A. M. (2024). "Anticipating how rain-on-snow events will change through the 21st century: lessons from the 1997 new year's flood event". *Clim. Dyn.*, pp. 1–23. DOI: 10.1007/s00382-024-07351-7.

Rudisill, **W.** (2024). "Are atmospheric models too cold in the mountains? The state of science and insights from the SAIL field campaign". *Bull. Am. Meteorol. Soc.* -1.aop. DOI: 10.1175/BAMS-D-23-0082.1.

Feldman, D. R. (2023). "The Surface Atmosphere Integrated Field Laboratory (SAIL) campaign". *Bull. Am. Meteorol. Soc.* -1.aop. DOI: 10.1175/bams-d-22-0049.1.

Rudisill, **W.**, Flores, A., Carroll, R. (2023). "Evaluating 3 decades of precipitation in the Upper Colorado River basin from a high-resolution regional climate model". *Geosci. Model Dev.* 16.22, pp. 6531–6552. DOI: 10.5194/gmd-16-6531-2023.

Rudisill, **W.** (2023). "Cold-Season Precipitation Sensitivity to Microphysical Parameterizations: Hydrologic Evaluations Leveraging Snow Lidar Datasets". *J. Hydrometeorol.* 1.aop. DOI: 10.1175/JHM-D-22-0217.1.

Rudisill, **W.**, Kaiser, K., Flores, A. (2022). "Evaluating long-term One-Way Atmosphere-Hydrology simulations and the impacts of Two-Way coupling in four mountain watersheds". *Hydrol. Process.* 36.5. DOI: 10.1002/hyp.14578.

Rudisill, **W.** (2022). *Dataset: Dynamically Downscaled (WRF) 1km, Hourly Meteorological Conditions 1987-2020. East/Taylor Watersheds*. Ed. by ESS-DIVE. DOI: doi:10.15485/1845448.

Rudisill, **W.**, Flores, A., McNamara, J. (2021). "The Impact of Initial Snow Conditions on the Numerical Weather Simulation of a Northern Rockies Atmospheric River". *J. Hydrometeorol.* 22.1, pp. 155–167. DOI: 10.1175/JHM-D-20-0018.1.

Publications in Review

Rudisill, **W.** (2026b). "Reduced Surface Hoar in a Warming World". *The Cryosphere*.

Gibson, L., Feldman, D., **Rudisill**, **W.** (2025). "The Dual Role of Snowfall in Impacting Surface Albedo and Spring Snowmelt in the Upper Colorado River Basin". *npj Climate and Atmospheric Science*.

Rhoades, A, North, J, **Rudisill**, **W.** (2025). "Snoweater heatwaves of the western United States". *Science Advances*.

Siirila-Woodburn, E. R. (2024). "Old- and high-elevation groundwater buffers declines in mountainous runoff efficiency". *Nature Geoscience*.