Megan Thompson-Munson

PhD Candidate at University of Colorado Boulder | (she/her)

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Education

University of Colorado — Boulder, CO
PhD in Atmospheric and Oceanic Sciences (ATOC) (GPA: 3.9/4.0) — May 2025 (expected)
- Research: Ice-atmospheric interactions and ice-sheet firn processes
- Advisor: Dr. Jennifer Kay (formerly Dr. Jan Lenaerts)

University of Wyoming — Laramie, WY
MS in Geology (GPA: 4.0/4.0) — May 2020
- Thesis: *Observations and Implications of Three-Dimensional Deformation in the Greenland Ice Sheet*
- Advisor: Dr. Neil Humphrey

University of Massachusetts — Amherst, MA
BS in Geology; BS in Environmental Science (GPA: 3.8/4.0) — May 2017
Commonwealth Honors College Scholar with Greatest Distinction, *cum laude*
- Thesis: *Understanding the Environments in which Early Humans Lived: Insights from Organic Geochemical Analyses of East African Rift Valley Paleolakes*
- Advisor: Dr. Isla Castañeda

Field and Laboratory Experience

Niwot Ridge Snow Science Field Work — Nederland, CO
Field Assistant (2 days) — Jun, Sep 2021
- Set up a field station containing instruments for measuring snow height and snow water equivalent

Lake Agnes Rock Glacier Field Work — State Forest State Park, CO
Field Assistant (1 day) — Oct 2019
- Hiked equipment up to a rock glacier to collect seismic refraction data in the active region of the glacier

Southern Sierra Nevada Critical Zone Observatory Field Work — Sierra Nevada, CA
Field Assistant (14 days, 11 days) — Jul 2018, Jul 2019
- Collected seismic refraction data and surveyed vegetation while mentoring high school students in a summer program

Greenland Ice Sheet Field Work — Kangerlussuaq and Ilulissat, Greenland
Field Team Member (32 days, 31 days) — May–Jun 2018, May–Jun 2019
- Hot-water drilled 100-m boreholes, extracted 30-m firn cores, and traveled by ski and snowmobile

University of Massachusetts Biogeochemistry Laboratory — Amherst, MA
Undergraduate Research Technician — May 2015–May 2017
- Used geochemical analyses to quantify biomarker abundances in East African Rift Valley paleolake sediments

Publications

Theses and Peer-Reviewed Publications

[4] **Thompson-Munson, M.E.**, Wever, N., Lenaerts, J.T.M., Stevens, C.M., and Medley, B. (In prep.). A comparison of observed and modeled Greenland firn properties.

[3] **Thompson-Munson, M.E.** (2020). Observations and implications of three-dimensional deformation in the Greenland Ice Sheet. Master's thesis, University of Wyoming.

[2] Lam, A., Bauer, J.E., Fraass, S., Sheffield, S., Limbeck, M.R., Borden, R.M., **Thompson-Munson, M.E.**, Fraass, A.J., Hills, J.M., Muskelly, C.E., Hartshorn, K.R., and Bryant, R. (2019). Time Scavengers: An Educational Website to Communicate Climate Change and Evolutionary Theory to the Public through Blogs, Web Pages, and Social Media Platforms. The Journal of STEM Outreach, 2(1)

[1] **Thompson-Munson, M.E.** (2017). Understanding the Environments in which Early Humans Lived: Insights from Organic Geochemical Analyses of East African Rift Valley Paleolakes. Bachelor's thesis, University of Massachusetts.

Datasets and Tools

[2] **Thompson-Munson, M.E**. SUMMEDup 2022: The SUMup Dataset Explorer. https://github.com/MeganTM/SUMMEDup2022.

[1] **Thompson-Munson, M.E**, Montgomery, L., Lenaerts, J.T.M., and Koenig, L. (2022). Surface Mass Balance and Snow Depth on Sea Ice Working Group (SUMup) snow density, accumulation on land ice, and snow depth on sea ice datasets 1952-2019. Arctic Data Center. doi:10.18739/A24Q7QR58.

Teaching and Mentorship Experience

Teaching Positions

Lead Graduate Teacher Program, University of Colorado, ATOC Lead TA — May 2022–present
ATOC REU Python Bootcamp, University of Colorado, Lesson Developer and Instructor — Jun 2021
ATOC 1070: Weather and Atmosphere Lab, University of Colorado, Teaching Assistant — Aug–Dec 2020
GEOG 1010: Physical Geography, University of Wyoming, Teaching Assistant — Aug–Dec 2019, Jan–May 2020
GEOG 3600 Earth and Mineral Resources, University of Wyoming, Teaching Assistant — Aug–Dec 2018

Research Mentorship

Beth Mason, BS Student in ATOC at University of Colorado — Jul 2021–Apr 2022

Selected Outreach and Service

- Developer and Coordinator for the International Firn Workshop
- Visiting Scientist with the ATOC SEEDS program
- Writer for Time Scavengers Science Outreach Blog
- Activity Developer for Girls Inc. Eureka!
- Judge for the Colorado State Science Fair
- Lead and Member of the ATOC Outreach Committee
- Member of the ATOC Justice, Equity, Diversity, and Inclusion Committee
- Mentor and Developer in the ATOC Graduate Application Mentorship Program
- Judge for the Wyoming State Science Fair

Selected Awards

- AGU Flash Freeze Cryosphere Innovation Award
- Best Graduate Student ESSS Poster
- AntClimNow Dataset Development and Stewardship Grant
- EarthCube Learning Communities Fellow
- Fall 2020 Lab Teaching Assistant Award
- 2020 Outstanding Master's Student
- Women in Quaternary Science Award
- AWG Outstanding Student Award
- Geology & Geophysics Graduate Research Grant
- Outstanding Geology Senior Award

Technical Skills

- **Programming Languages:** Python (excellent), Matlab (proficient), Java (proficient)
- **Systems:** MacOS, Windows, Unix/Linux, high-performace computing
- **Software:** Microsoft Office, Inkscape, LaTeX, QGIS, ArcGIS, ENVI, JMP, Git/GitHub, Jupyter, Google Colab, Google Earth Engine
- **Field Skills:** Firn coring, hot-water drilling, ground-penetrating radar, seismic refraction, rock drilling, snow sampling