

JAMES K. MINEAU

Curriculum Vitae

(*address*) University of Utah
Dept. of Atmospheric Sciences
Salt Lake City, UT, 84112, USA

(*email*) James.Mineau@utah.edu
(*website*) jamesmineau.chpc.utah.edu
(*github*) github.com/jmineau
(*linkedin*) linkedin.com/in/james-mineau

PROFILE

Atmospheric science graduate student with 5+ years of research experience. Advanced user of python in analysis and data management. Excels in the field and able to adapt to adverse conditions. Motivated student with a strong early career publication and presentation record. Driven to understand greenhouse gas emissions in complex environments. Invested in finding equitable solutions to the climate crisis.

EDUCATION

Ph.D., Atmospheric Science

August 2026

University of Utah, Salt Lake City, UT

B.S., Atmospheric & Oceanic Sciences

May 2022

University of Wisconsin, Madison, WI

- Double Major: **Environmental Studies**
- Honors in the Major: Atmospheric & Oceanic Sciences
- GPA: 3.828 | Dean's List – 7 semesters

RESEARCH EXPERIENCE

Graduate Research Assistant

August 2022 – Present

Lin Lab, University of Utah, Salt Lake City, UT

- Estimating methane emissions in the Salt Lake Valley using a Bayesian inverse framework consisting of stationary and mobile data driven by a lagrangian transport model
- Maintainer of group website (air.utah.edu) and data pipeline (github.com/uataq/data-pipeline)
- Project lead for mobile greenhouse gas measurements
- Maintenance of air quality and meteorological sensors
- Developer of group python package (github.com/jmineau/lair)

Research Intern

May 2022 – July 2022

Desai Lab, University of Wisconsin, Madison, WI

- Contributed to an introduction to a special issue in Journal of Geophysical Research – Biogeosciences
- Continuation of undergraduate research thesis

- Created a high-resolution surface water body map using a principal component-based data reduction of aerial hyperspectral imagery

Undergraduate Research Intern

September 2019 – May 2022

Desai Lab, University of Wisconsin, Madison, WI

- Performed independent research on carbon and energy fluxes using eddy-covariance flux data
- Analyzed hyperspectral imagery data from the CHEESEHEAD19 field campaign
- Created maps for and assisted in the writing of a lab group publication

NSF: Research Experience for Undergraduates

June 2021 – August 2021

Lin Lab, University of Utah, Salt Lake City, UT

- Performed guided research on the impacts of population growth on CO₂ trends in a rapidly developing montane-urban region
- Participated in professional development activities including parallel computation and self-promotion strategies

Dairy Hub Research Project Intern

May 2020 – October 2020

Desai Lab, University of Wisconsin, Madison, WI

- Assisted in field measurements of soil and vegetation at the USDA Dairy Forage Research Center
- Completed analysis of vegetation and topography effects on soil respiration using linear models

CHEESEHEAD19 Research Project Intern

May 2019 – August 2019

Desai Lab, University of Wisconsin, Madison, WI

- Collaborated with the National Center for Atmospheric Research to set up and maintain an extensive array of eddy covariance flux towers and other scientific instruments
- Worked with the US Forest Service to create and update field campaign maps for day-to-day operations and to orient incoming scientists
- Performed daily launches of radiosonde balloons
- Performed public outreach and education

PUBLICATIONS

Published or Accepted

3. Desai, A.R., Wiesner, S., Thom, J., Butterworth, N.J., Koupaei-Abyazani, N., Merrelli, A., Murphy, B., Muttaqin, A., Paleri, S., Talib, A., Turner, J., **Mineau, J. K.**, et al., 2022. *Journal of Geophysical Research: Biogeosciences*, 127, e2022JG007014. <https://doi.org/10.1029/2022JG007014>

2. Desai, A. R., Paleri, S., **Mineau, J. K.**, Kadum, H., Wanner, L., Mauder, M., Butterworth, B. J., Durden, D. J., & Metzger, S. (2022). Scaling Land-Atmosphere Interactions: Special or Fundamental? *Journal of Geophysical Research: Biogeosciences*, 127(10), e2022JG007097. <https://doi.org/10.1029/2022JG007097>
1. Butterworth, B. J., Desai, A. R., Townsend, P. A., Petty, G. W., Andresen, C. G., Bertram, T. H., Kruger, E. L., **Mineau, J. K.**, et al. (2021). Connecting Land–Atmosphere Interactions to Surface Heterogeneity in CHEESEHEAD19. *Bulletin of the American Meteorological Society*, 102(2), E421–E445. <https://doi.org/10.1175/BAMS-D-19-0346.1>

POSTERS & PRESENTATIONS

6. **Mineau, J.K.**, Lin, J., Mallia, D., Mitchell, L., Garcia, M. Constraining methane emissions across the Salt Lake Valley urban area. Poster presented at 2023 American Geophysical Annual Meeting, San Francisco, CA, 15 December 2023.
5. Lin, J., Mallia, D., **Mineau, J.K.**, Wilmont, T., Meyer, A., Mitchell, L., Ostile, M., Garcia, M. Quantifying Greenhouse Gas Emissions from Cities: from Neighborhood to Global Scales. Talk given at 2023 American Geophysical Annual Meeting, San Francisco, CA, 15 December 2023.
4. **Mineau, J. K.**, Desai, A. R., Zheng, T., Townsend, T., Butterworth, B. Refining Areal Quantification of Inland Waters and Assessing the Impact on Carbon Budgets. Poster presented at 2022 American Meteorological Society Annual Conference, Houston, TX, 24 January 2022.
3. **Mineau, J. K.**, Lin, J., Mallia, D. Impacts of Population Growth on CO₂ Trends in the Montane-Urban Region of Heber Valley. Poster presented at 2022 American Meteorological Society Student Conference, Houston, TX, 22 January 2022.
2. Desai, A. R., Thom, J., Wiesner, S., Butterworth, B., Koupaei-Abyazani, N., Merrelli, A., Murphy, B., Muttaqin, A., Paleri, S., Talib, A., Turner, J., **Mineau, J. K.** From half-hour to quarter century: Drivers of carbon fluxes across a northern ecosystem tower cluster. Poster presented at 2021 Ameriflux Annual Meeting, virtual, 20-22 September 2021.
1. Desai, A.R., Reed, D.E., Butterworth, B., Stoy, P., Taebel, Z., and **Mineau, J. K.** Inland water bodies as surface energy hotspots (Invited), Abstract B32B-02 presented at AGU 2019 Fall Meeting, San Francisco, CA, December 11, 2019.
<https://agu.confex.com/agu/fm19/meetingapp.cgi/Paper/494143>

HONORS & AWARDS

National Science Foundation Fellow (NSF GRFP)	March 2023
AOSS Best Undergraduate Poster Award	February 2022
David H. Durra Award	April 2021, 2022
Lettau-Wahl Award	May 2020
UW-Madison, College of Letters & Science Student of the Month	November 2019
Wisconsin Academic Excellence Award	June 2018
Elks Most Valuable Student Award	December 2017

HONOR & AWARDS cont.

4-H Key Award Recipient
Eagle Scout

October 2017
February 2016

WORKSHOP/MEETING EXPERIENCE

Summer School for Inverse Modeling of Greenhouse Gases
American Geophysical Union Annual Meeting
American Meteorological Society Annual Conference
American Meteorological Society Student Conference

June 2024
December 2023
January 2021, 2022
January 2022

PUBLIC OUTREACH & SERVICE

Univ. of Utah, Atmospheric Sciences, Grad. Student Advisory Committee Officer 2024
American Meteorological Society UW-Madison Chapter Officer 2021 - 2022
Northeast Wisconsin 4-H Science Summit presenter February 2020
Speaker for UW-Madison College of Letters and Science Board of Visitors September 2019
Co-organizer for CHEESEHEAD19 Community Open House Event August 2019
Speaker at *Ask a Climate Scientist Anything* event in Park Falls, WI gastropub August 2019

TECHNICAL SKILLS

Programming Languages

Python (advanced)
R (intermediate)
HTML5 (beginner)
CRBASIC (beginner)

Operating Systems

Linux, Windows
Raspberry Pi OS

Model Experience

STILT

Other

High-performance computing
Parallel computing
Geo-computing
Github version control

OTHER SKILLS & CERTIFICATIONS

Field Instrumentation

NCAR Tower Climbing Safety

MEMBERSHIPS

American Geophysical Union
American Meteorological Society

2023 - 2024
2018 - 2022