

# Julia Shates

shatesju@jpl.nasa.gov | shates.github.io

## EDUCATION

---

### University of Wisconsin-Madison

Ph.D. Atmospheric and Oceanic Sciences

M.S. Atmospheric and Oceanic Sciences

Madison, WI

Sep. 2019 – Aug. 2023

Sep. 2017 – Aug. 2019

### University of California, Irvine

B.S. Earth System Science, B.A. Spanish

Irvine, CA

Aug. 2011 – Aug. 2015

## RESEARCH EXPERIENCE

---

### JPL Postdoctoral Fellow

*Jet Propulsion Laboratory, California Institute of Technology*

Nov. 2023 – present

- exploring cloud/snow microphysics for satellite ice cloud retrieval development

### Graduate Research Assistant

*University of Wisconsin-Madison*

Sep. 2017 – 2023

- Investigating vertical structure of precipitation processes in the satellite radar blind zone
- Characterizing snowfall regimes using ground-based in-situ and remote sensing observations

### Undergraduate Researcher

*University of California, Irvine*

Sep. 2013 – 2015

- Researched intraseasonal variability in the Southern Hemisphere austral winter

### Undergraduate Research Intern

*Colorado State University*

June – Aug. 2014

- Researched intraseasonal variability in the Southern Hemisphere (Baroclinic Annular Mode)

## AWARDS

---

- **Intl. Precip. Conference: First Prize for Outstanding Presentation** June 2023
- **UW-Madison Grad. School Student Research Grants** Apr. 2023
- **AGU Fall Meeting 2022 Precipitation Student Award** Jan. 2023
- **AOS Department Travel Award** Aug. 2022
- **Future Investigators in NASA Earth and Space Science and Technology** May 2021
- **AMS Polar: First Place Outstanding Student Poster** May 2021
- **AOS Wahl Award: Outstanding Performance as a Teaching Assistant** May 2020
- **AOS Department Service Award** May 2019
- **NSF Graduate Research Fellowship Program: Honorable Mention** Apr. 2019

## GRANTS/PROPOSALS

---

**Future Investigators in NASA Earth and Space Science and Technology** May 2021

- *Characterizing Precipitation Structure and Processes in the Satellite Radar Blind Zone*

**Women in Science, Engineering, Leadership Institute Grant Award** Aug. 2019

- Awarded funding to host speakers in the AOS Department colloquium series

**Professional Development Grant, UW-Madison Graduate School** Nov. 2018

- Funding to host speaker for workshop: *Tools on an online presence in science*

## PUBLICATIONS

---

- **Shates, J. A.**, Pettersen, C., L'Ecuyer T. S., Kulie, M. S., KAZR-CloudSat analysis of snowing profiles at the North Slope of Alaska: implications of the satellite radar blind zone, *Journal of Geophysical Research: Atmospheres*, (*submitted*)
- Fraser, K., Pettersen, C., Dolan, B., **Shates, J.**, Posselt, D., Primary Modes of Northern Hemisphere Snowfall Particle Size Distributions, *Journal of Atmospheric Sciences*, (*in-review*)
- Xie, Y., Pettersen, C., Flanner, M., **Shates, J.A.**, Ground-Observed Snow Albedo Changes During Rain-On-Snow Events in Northern Alaska., *Journal of Geophysical Research: Atmospheres*, 129, [10.1029/2024JD040975](https://doi.org/10.1029/2024JD040975)
- Ochwat, N. E., Scambos, T. A., Banwell, A. F., Anderson, R. S., Maclennan, M. L., Picard, G., **Shates, J.A.** Marinsek, S., Margonari, L., Truffer, M., and Pettit, E. C., (2024). Triggers of the 2022 Larsen B multi-year landfast sea ice breakout and initial glacier response, *The Cryosphere*, 18, 1709–1731, [10.5194/tc-18-1709-2024](https://doi.org/10.5194/tc-18-1709-2024)
- **Shates, J. A.**, Pettersen, C., L'Ecuyer T. S., Kulie, M. S., (2023). Multi-year analysis of rain-snow levels at Marquette, Michigan. *Journal of Geophysical Research: Atmospheres*, 128, [10.1029/2022JD037132](https://doi.org/10.1029/2022JD037132)
- Cooper, S. J., L'Ecuyer, T. S., Wolff, M. A., Kuhn, T., Pettersen, C., Wood, N. B., Eliasson, S., Schirle, C. E., **Shates, J.**, Hellmuth, F., Engdahl, B. J. K., Vásquez-Martín, S., Ilmo, T., & Nygård, K. (2022). Exploring Snowfall Variability through the High-Latitude Measurement of Snowfall (HiLaMS) Field Campaign, *Bulletin of the American Meteorological Society*, 103(8), E1762-E1780. [10.1175/BAMS-D-21-0007.1](https://doi.org/10.1175/BAMS-D-21-0007.1)
- **Shates, J. A.**, Pettersen, C., L'Ecuyer T. S., Cooper, S. J., Kulie, M. S., Wood., N. B., (2021). High-latitude precipitation: Snowfall regimes at two distinct sites in Scandinavia. *Journal of Applied Meteorology and Climatology*, 60, 1127-1148. [10.1175/JAMC-D-20-0248.1](https://doi.org/10.1175/JAMC-D-20-0248.1)
- Pettersen, C., Bliven, L. F., Kulie, M. S., Wood, N. B., **Shates, J. A.**, Anderson, J., Mateling, M.E., Petersen, W.A., von Lerber, A. and Wolff, D.B., (2021). The Precipitation Imaging Package: Phase Partitioning Capabilities. *Remote Sensing*, 13(11), 2183. [10.3390/rs13112183](https://doi.org/10.3390/rs13112183)

## TEACHING EXPERIENCE

---

### Teaching Assistant *UW-Madison*

- *Radar and Satellite Meteorology* Jan. – May 2020
- *Atmospheric Thermodynamics* Sep. – Dec. 2019

### Outdoor Science Educator *Pali Institute, Running Springs, CA* Sep. 2015 – June 2016

- Taught leadership and hands-on science classes to 5th-12th graders including: Forest Ecology, Aerodynamics, Weather, and Outdoor Skills; Trained teaching incoming staff

## PRESENTATIONS

---

### JPL Postdoc Seminar Series Oct. 2024

- *Ice Cloud Microphysics in the MC3E Field Campaign*

### International Conference on Clouds and Precipitation, poster July 2024

- *Exploring in-situ and remote sensing observations of clouds in MC3E*
- JPL Center for Climate Sciences Seminar** Mar. 2024
- *Ground-based Radar Perspectives on the Satellite Radar Blind Zone*
- American Geophysical Union, oral** Dec. 2023
- *Assessing satellite radar blind zone impacts on observing snowfall regimes at the North Slope of Alaska*
- International Precipitation Conference, poster** June 2023
- *Multi-year analysis of rain-snow levels at Marquette, Michigan*
- AGU Precipitation Technical Committee** Mar. 2023
- ECSPrecip Seminar Series: AGU Precipitation Student Award 2022 winners
- *Multi-year Analysis of Rain-Snow Levels at Marquette, Michigan*
- NASA JPL Science Visitor and Colloquium Program** Mar. 2023
- *Ground-based Radar Perspectives on the Satellite Radar Blind Zone*
- American Geophysical Union, oral** Dec. 2022
- *Multi-year analysis of rain-snow levels at Marquette, Michigan*
- AMS Sat. Met., Ocean., and Clim./Joint NOAA Sat. Conference, oral** Aug. 2022
- *Multi-year analysis of rain-snow levels at Marquette, Michigan*
- AMS Polar Meteorology & Oceanography, poster** Aug. 2022
- *Snowfall regimes in the North Slope of Alaska*
- AOS Department seminar** Apr. 2022
- *Multi-year analysis of precipitation phase transition height in Marquette, Michigan*
- Graduate Climate Conference, virtual poster** Oct. 2021
- *Analyses of precipitation phase transition height and associated characteristics using ground-based observations*
- 3 Minute Thesis, oral presentation competition** Oct. 2021
- *Precipitation in the Satellite Radar Blind Zone*
- PMM Science Team Meeting, virtual poster** Oct. 2021
- *Analyses of precipitation phase transition height and associated characteristics using ground-based observations*
- AMS Polar Meteorology & Oceanography, virtual poster** May 2021
- *Snowfall regimes at two distinct sites in Scandinavia*
- Graduate Climate Conference, virtual talk** Oct. 2020
- *High-latitude precipitation: Snowfall regimes at two distinct sites in Scandinavia*
- Midwest Student Conference in Atmospheric Research, poster** Oct. 2019
- *High-Latitude precipitation: characterizing snowfall regimes and identifying key processes at two distinct Scandinavian sites*
- AMS Polar Meteorology & Oceanography, oral** May 2019
- *High-Latitude precipitation: characterizing snowfall regimes and identifying key processes*
- AOS Department seminar, MS thesis seminar** Apr. 2019
- *High-Latitude precipitation: characterizing snowfall regimes and identifying key processes at two distinct Scandinavian sites*
- American Geophysical Union, poster** Dec. 2014
- *Exploration of Atmospheric Oscillations with a hierarchy of models: focus on scale and geographic location*

## FIELD & SUMMER SCHOOL EXPERIENCES

---

**Advanced Climate Dynamics Course** *University of Bergen, Norway* Sep. 2022

- completed group project on Greenland Surface Mass Balance using field observations and the high resolution C3S Arctic Regional Reanalysis (CARRA) dataset.

**CHEESEHEAD Campaign** *UW-Madison* July 2019

- Assisted in deploying instruments: Precipitation Imaging Package, Micro Rain Radar

**SAVANT Campaign** *University of South Carolina, University of Illinois* Oct. 2018

- Deployed instruments and used observations from SAVANT as part of AOS Measurements course focused on the nocturnal boundary layer in shallow topography

**Arctic Field Summer School** *University of Alaska, Fairbanks* June 2018

- Learned field & satellite methods for cryosphere topics; field observations on the frozen tundra, lagoon, and fast ice in Utqiagvik, AK

### **Modeling the Arctic Climate System**

International Arctic Research Center *University of Alaska, Fairbanks* July 2016

- Completed group project on changes in the hydrologic cycle over Alaska in a warming climate using dynamically downscaled model projections

## SERVICE

---

### **Journal/Paper Reviews**

- Journal of Geophysical Research: Atmospheres
- Journal of Atmospheric and Oceanic Technology
- Earth System Science Data

### **AOS Summer Research Program Planning Committee**

- *Logistics Committee* (April 2022 – Aug. 2022): plan programming and weekly professional development workshops for new pilot undergraduate internship program

### **AOS Colloquium Committee**

- invite and host speakers for AOS Monday colloquium series (May 2019 – Aug. 2023)

### **Graduate Climate Conference**

- *Abstract Committee Co-Chair* (Aug. 2021 – Nov. 2021): assess and update abstract and personal statement rubric

### **AOS Graduate Student Association (GSA) Leadership positions**

- *Faculty Liaison* (May 2020 – 2021): attend department meetings; share updates to GSA
- *Treasurer* (May 2018 – 2020): applied for professional development grants

### **Cooperative Institute for Meteorological Satellite Studies (CIMSS), UW-Madison**

- Wx Camp 2022: *Winter Storms; Accessing Weather and Climate Data on the Internet*
- Wx Camp 2021: *Winter Storms; Accessing Weather and Climate Data on the Internet*
- Wx Camp 2019: *Snow, ice or clouds? A high-latitude challenge*

### **Community Outreach**

- Latino Youth Career Fair at Madison College (Mar. 2019)
- UW Science Expeditions (Apr. 2018): rotating tank lab for AOS campus open house