

# Jonah Shaw

Email : jonah.shaw@colorado.edu

jshaw35.github.io

## EDUCATION

---

- **University of Colorado at Boulder** Boulder, CO  
*PhD in Atmospheric and Oceanic Sciences, expected Aug. 2025; GPA: 4.00* *Aug. 2020 – Present*
  - Advisor: Prof. Jen Kay
  - Research: Using global climate models and satellite observations to understand the Arctic radiation budget
- **Carleton College** Northfield, MN  
*Bachelor of Arts in Physics; GPA: 3.94; Honors in Physics, Magna Cum Laude* *Sep. 2014 – June 2018*
  - Thesis: Radiative transfer in the earth-atmosphere-space system

## RESEARCH EXPERIENCE

---

- **University of Oslo, Section for Meteorology and Oceanography** Oslo, Norway  
*US Fulbright Student Scholar working with Prof. Trude Storelvmo* *Aug. 2019 - May 2020*
  - Operated the NorESM2 and CESM2 global climate models. Modified of the model's parametrization of ice nucleation in mixed-phase clouds and in-model satellite simulator (COSP).
  - Processed and synthesized model predictions with observational datasets from the CALIOP and CloudSat satellite missions.
- **National Institute of Standards and Technology** Boulder, CO  
*Post-Baccalaureate Researcher working with Prof. Scott Diddams* *July 2018 - July 2019*
  - Implemented a flexible and robust digital phase-lock loop to stabilize laser frequency combs.
  - Used free-space and fiber optics to produce and characterize femtosecond near-infrared pulses.
  - Wrote programs in Python and MATLAB to model pulse evolution in optical fiber.
- **Analog Devices** Golden, CO  
*Electro-Optical Engineering Intern* *Summer 2017*
  - Characterized behavior of liquid crystal waveguide technology for use in automotive LiDAR.
- **Carleton College, Department of Physics** Northfield, MN  
*Research Assistant working with Prof. Eric Hazlett* *Dec. 2015 - Nov. 2017*
  - Designed and constructed an apparatus to measure the divergence and waist of gaussian laser beams.

## PUBLICATIONS

---

**J. Shaw** and J.E. Kay, "The Emergence of Changes in Arctic Longwave Radiation," (in prep.)

B. Medeiros, **J. Shaw**, and J.E. Kay, "Assessing clouds using observations through three generations of the Community Atmosphere Model," (in prep.)

S. Hofer, Z. McGraw, **J. Shaw**, M. Pietschnig, R.O. David, and T. Storelvmo, "Climate impacts of observationally constrained mixed-phase clouds show strong hemispheric contrasts," (in prep.)

J. Zhu, B.L. Otto-Bliesner, E.C. Brady, A. Gettelman, J.T. Bacmeister, R.B. Neale, C.J. Poulsen, **J.K. Shaw**, Z.M. McGraw, J.E. Kay, "LGM paleoclimate constraints inform cloud parameterizations and equilibrium climate sensitivity in CESM2," *Journal of Advances in Modeling Earth Systems*, 14, e2021MS002776. (2022).

**J. Shaw**, Z. McGraw, O. Bruno, T. Storelvmo, and S. Hofer, "Using satellite observations to evaluate model microphysical representation of Arctic mixed-phase clouds," *Geophysical Research Letters*, 49, e2021GL096191 (2022).

**J.K. Shaw**, C. Fredrick, and S.A. Diddams, "Versatile digital approach to laser frequency comb stabilization," *OSA Continuum* 2, 3262-3271 (2019)

## POSTERS AND PRESENTATIONS

---

AMS Collective Madison Meeting 2022, *Emerging seasonal changes in Arctic Longwave Radiation* (presentation)  
International Radiation Symposium 2022, *Emerging seasonal changes in Arctic Longwave Radiation* (presentation)  
Graduate Climate Conference 2021, *Observations of Seasonal Changes in the Arctic Energy Budget* (poster)  
CESM 2021 Annual Workshop, *Evaluation of clouds in three generations of CAM using satellite simulators and observations* (poster)

## HONORS AND AWARDS

---

Future Investigators in NASA Earth and Space Science and Technology (FINESST) Grant recipient with Professor Jennifer Kay (2022).  
International Radiation Symposium Student Travel Award (2022)  
CIRES Graduate Student Travel Grant (2022)  
Honorable Mention, 2020 National Science Foundation (NSF) Graduate Research Fellowship Program (GRFP)  
Fulbright Student Research Grant Recipient (2019-2020), Norway  
Distinction in Senior Thesis, Carleton College  
Campus Nominee, Barry Goldwater Scholarship 2017, Carleton College  
Dean's List 2014, 2015, 2016 (Carleton College)  
Carleton Distinguished Scholar  
National Merit Scholar

## SERVICE

---

ATOC Curriculum Committee	September 2022 - Present
ATOC First-Year Graduate Student Mentor, CU Boulder	August 2021 - Present
ATOC REU Graduate Student Mentor, CU Boulder	Summers 2021 and 2022
ATOC REU Planning Committee, CU Boulder	January 2021 - Present
ATOC Graduate Application Program Mentor, CU Boulder	August 2020 - Present
ATOC Justice, Equity, Diversity, and Inclusivity Committee, CU Boulder	August 2020 - Present
Student Departmental Advisor, Physics, Carleton College	Sep. 2017 - June 2018
Physics Department Curriculum Committee, Carleton College	Sep. 2017 - June 2018
Project Friendship Mentor, Northfield, Minnesota	March 2015 - June 2018