

EDUCATION

University of Washington

Ph.D., Atmospheric Science (Data Science Option), Advisor: Dennis L. Hartmann Jun 2024
Dissertation: *Tropical Convection, Clouds, & Climate: Lessons from
Idealized Models of Radiative-Convective Equilibrium*

M.S., Atmospheric Science Dec 2020

Yale University

B.S., *Magna cum laude*. Majors: Environmental Engineering, Geology & Natural Resources. May 2017
Advisor: Trude Storelvmo

RESEARCH APPOINTMENTS

Postdoctoral Research Associate , Princeton University	Sep 2024 - Present
Interim Postdoctoral Scholar , University of Washington	Jun 2024 - Sep 2024
NASA FINESST Graduate Fellow , University of Washington	Sep 2020 - Aug 2023
Graduate Research Assistant , University of Washington	Sep 2018 - Jun 2024
Research Assistant , University of Oslo	Mar 2018 - Jun 2018
REU Research Assistant , Penn State University	June 2016 - Aug 2016

AWARDS, HONORS, & FELLOWSHIPS

NASA FINESST Graduate Fellowship	2020-2023
Outstanding Student Presentation Award (OSPA), AGU Fall Meeting	2020, 2023
Advanced Climate Dynamics Course, Summer School Participant (Univ. of Bergen)	2022
Joost A. Businger Fellowship in Atmospheric Sciences (Univ. of Washington)	2018
Pat Wilde Prize for excellence in Geology & Geophysics (Yale)	2017
Hammer Prize for outstanding senior thesis in Geology & Geophysics (Yale)	2017
Environmental Engineering Prize for outstanding scholarship (Yale)	2017
Tau Beta Pi, the National Engineering Honors Society	2016
Von Damm Research Fellowship (Yale)	2015, 2016
Environmental Research Fellowship (Yale)	2015
Saybrook College Research Fellowship (Yale)	2015

PUBLICATIONS

In review & in prep

Sokol, A.B., T.M. Merlis, D.L. Hartmann, and S.A. Fueglistaler (2025). Expansion of tropical rainy regions in warmer climates: Insights from mock-Walker simulations with varied boundary conditions. *In prep*.

Dou, T., G. Xu, Y. Yang, R. Zhou, G. Yu, I. Tan, A.J. Heymsfield, J. Huang, J. Yin, M. Ding, Y. Lin, **A.B. Sokol**, C. Ziao, D. Qin (2025). Tropospheric ice in a warming world. In review for *Nature Climate Change*.

Peer-reviewed papers

Sokol, A.B., V.A. Munteanu, P.N. Blossey, & D.L. Hartmann (2025). Internal ocean-atmosphere variability in kilometer-scale radiative-convective equilibrium. In review for *J. Adv. Model. Earth Sys.*, 17(6), e2024MS004567. doi:10.1029/2024MS004567.

- Kärcher, B., F. Hoffman, **A.B. Sokol**, B. Gasparini, M. Corcos, E. Jensen, R. Atlas, A. Podglajen, H. Morrison, A. Hertzog, R. Plougonven, K.K. Chandrakhar, and W. Grabowski (2025). Deep dive into cirrus clouds: Navigating effects of turbulence on homogeneous ice formation. *npj Climate and Atmospheric Science*, 8(1), 1-12. doi:10.1038/s41612-025-01024-w.
- Sokol, A.B.**, C.J. Wall, and D.L. Hartmann (2024). Greater climate sensitivity implied by anvil cloud thinning. *Nature Geoscience*, 17(5), 398-403. doi:10.1038/s41561-024-01420-6.
- Sokol, A.B.** and T. Storelvmo (2024). The spatial heterogeneity of cloud phase observed by satellite. *J. Geophys. Res.-Atmos.*, 129, e2023JD039751. doi:10.1029/2023JD039751.
- Atlas, R.L., C.S. Bretherton, **A.B. Sokol**, P.N. Blossey, and M.F. Khairoutdinov (2024). Tropical cirrus are highly sensitive to ice microphysics within a nudged global storm-resolving model. *Geophys. Res. Lett.*, 51(1), e2023GL105868. doi:10.1029/2023GL105868.
- Gasparini, B., S.C. Sullivan, S.C., **A.B. Sokol**, B. Kärcher, E. Jensen, & D.L. Hartmann (2023). Opinion: Tropical cirrus—from micro-scale processes to climate-scale impacts. *Atmos. Chem. Phys.*, 23(24), 15413-15444. doi:10.5194/egusphere-2023-1214.
- Lamraoui, F., M. Krämer, A. Afchine, **A.B. Sokol**, S. Khaykin, A. Pandey, and Z. Kuang (2023). Sensitivity of convectively driven tropical tropopause cirrus to ice habit. *Atmos. Chem. Phys.*, 23(4), 2393-2419. doi:10.5194/acp-2022-670.
- Sokol, A.B.** and D. L. Hartmann (2022). Congestus mode invigoration by convective aggregation in simulations of radiative-convective equilibrium. *J. Adv. Model. Earth Sys.*, 14(7). doi:10.1029/2022MS003045.
- Hartmann, D.L., B.D. Dygert, P.N. Blossey, Q. Fu, and **A. B. Sokol** (2022). The vertical profile of radiative cooling and lapse rate in a warming climate. *J. Climate*, 35(19), 2653-2665. doi:10.1175/JCLI-D-21-0861.1.
- Sokol, A.B.** and D.L. Hartmann (2022). Radiative Cooling, Latent Heating, and Cloud Ice in the Tropical Upper Troposphere. *J. Climate*, 35(5), 1643-1654. doi:10.1175/JCLI-D-21-0444.1.
- Gasparini, B., **A.B. Sokol**, C.J. Wall, D.L. Hartmann, and P.N. Blossey (2022). Diurnal differences in tropical anvil cloud evolution. *J. Climate*, 35(5), 1655-1677. doi:10.1175/JCLI-D-21-0211.1.
- Sokol, A.B.** and D.L. Hartmann (2020). Tropical anvil clouds: radiative driving towards a preferred State, *J. Geophys. Res.—Atmos.*, 125(21), e2020JD033107. doi:10.1029/2020JD033107.

OTHER WORKS

Sokol, A.B. (2020). "What makes the wind?". *The Conversation's* Curious Kids series. [Link](#).

TEACHING

University of Washington, Department of Atmospheric Sciences

Instructor/TA , Lab Component of Atmospheric Motions II (undergrad GFD) Course Instructor: David Battisti	Winter 2023
Guest Lecturer , Exploring the Atmospheric Sciences	Winter 2023
Instructor , Exploring the Atmospheric Sciences	Spring 2022
Co-Instructor , UW Atmos. Diversity, Equity, & Inclusion Seminar	Fall 2021
Teaching Assistant , Global Warming: Understanding the Issues Course Instructor: Kat Huybers	Spring 2020

MENTORSHIP

Junior Paper Advisor for Princeton undergraduate	2025
Primary Research Advisor for UW undergraduate	2022-2024
UW Atmos. Sci. Graduate Student Peer Mentoring Program	2022-2024
UW Atmos. Sci. Graduate-Undergraduate Mentoring Program Mentor for 4 undergraduate students	2018-2024

SERVICE ACTIVITIES

Clouds & Convection Reading Group (coordinator), UW Atmos. Sci.	Summer 2023-present
Black History Month Reading Group (coordinator), UW Atmos. Sci.	2021-2022
Graduate Student Representative , UW Atmos. Sci.	2019-2021
Graduate Student Steering Committee , UW Program on Climate Change	2019-2021
Outreach Project Lead & Lecturer , Sammamish High School, Sammamish, WA Coordinated outreach project for 3 yrs. Taught classes at Sammamish HS, served as expert resource for class projects on climate change, hosted student presentations on UW campus	2019-2021
Peer Reviewer Journal of Climate, Journal of Geophysical Research-Atmospheres, Atmospheric Chemistry & Physics, Journal of Advancement in Modeling Earth Systems, Climate Dynamics	

INVITED TALKS & SEMINARS

Yale University, Earth & Planetary Sciences	2024
Princeton University, Geosciences	2024
Princeton University, Atmospheric Dynamics Seminar	2024
Ice Cloud Workshop, University of Vienna	2024
Oregon State University, Physical Oceanography & Atmos. Sciences Seminar	2024
ECS & Cloud Feedback Virtual Symposium	2024
Princeton University, Atmospheric Dynamics Seminar	2023
University of Washington, Climate Dynamics Seminar	2023
NSF PIRE-Cirrus Virtual Seminar Series	2023
NSF-PIRE Cirrus Virtual Seminar Series	2021
AGU Fall Meeting (invited eLightning)	2021

CONTRIBUTED TALKS

- EGU General Assembly. *Anvil cloud thinning in high-resolution models implies greater climate sensitivity*. Vienna, Austria. 2024.
- EGU General Assembly. *Internal variability, multiple equilibria, and convection-SST coupling in a cloud-resolving model with an interactive ocean*. Vienna, Austria. 2024.
- AGU Fall Meeting. *Anvil cloud thinning implies greater climate sensitivity*. San Francisco, CA. 2023.

AGU Fall Meeting. *Internal variability and multiple equilibria in cloud-resolving RCE with an interactive ocean*. San Francisco, CA. 2023.

NSF PIRE-Cirrus Workshop. *Tropical Cirrus—from micro-scale processes to climate-scale impacts*. Friday Harbor, WA. 2023.

AGU Fall Meeting. *The convective response to warming in cloud-resolving simulations with an interactive ocean*. Chicago, IL. 2022.

Advanced Climate Dynamics Summer School. *Tropical convective clouds in a changing climate*. Rondane, Norway. 2022.

CFMIP. *On the relationship between large-scale radiative divergence and anvil cloud fraction in RCEMIP*. Seattle, WA. 2022.

AGU Fall Meeting. *Invited eLightning: The response of tropical cloud ice amount to surface warming*. New Orleans, LA. 2021.

AGU Fall Meeting. *Circulation, convection, and static stability in cloud-resolving simulations of radiative-convective equilibrium*. New Orleans, LA. 2021.

Graduate Climate Conference. *Tropical Anvil Clouds: Radiative Driving Towards a Preferred State*. Virtual. 2020.

NSF PIRE-Cirrus Workshop, 2019. *Satellite observations of tropical anvil cloud evolution*. Friday Harbor Laboratories, WA.

CONTRIBUTED POSTERS

CFMIP (Cloud Feedback Model Intercomp. Project) Meeting. *Invigoration of the congestus mode by convective aggregation in simulations of radiative-convective equilibrium*. Seattle, WA. 2022.

AGU Fall Meeting. *Tropical Anvil Clouds: Observations of a Preferred State*. Virtual. 2020.

AGU Fall Meeting. *Satellite observations of tropical anvil cloud evolution*. San Francisco, CA. 2019.

AGU Fall Meeting. *Eddy Covariance Measurements of Methane Emissions from a Dairy Farm Waste Lagoon*. San Francisco, CA. 2016.