

## SAMUEL SMITH

Curriculum Vitae

5734 S. Ellis Ave.  
Chicago, IL 60637

(317) 627-0610  
[samuelsmith@uchicago.edu](mailto:samuelsmith@uchicago.edu)  
[sjsmith757.github.io](https://sjsmith757.github.io)

### EDUCATION

- 2017-2023    PhD, Atmospheric Science; Scientific Computing Minor  
                  Advisor: Paul Staten  
                  Indiana University, Bloomington, IN  
                  Dissertation: *Scale Interactions between Local Moist Phenomena and Shifts of the Global Atmospheric Circulation*
- 2011-2015    B.A., cum laude, Music with High Honors and Physics with Honors  
                  Advisor: Gonzalo Ordonez  
                  Butler University, Indianapolis, IN

### PUBLICATIONS

Smith, S., J. Lu, and P. Staten, 2023b: The Intraseasonal North Atlantic Oscillation as a Quasi-semiannual Propagating Disturbance. In preparation.

Smith, S., J. Lu, and P. Staten, 2023a: Diabatic Eddy Forcing Increases Persistence and Opposes Propagation of the Southern Annular Mode in MERRA2. *Journal of Atmospheric Science*. Pending revision.

Smith, S., P. Staten, and J. Lu, 2021: How Moist and Dry Intrusions Control the Local Hydrologic Cycle in Present and Future Climates. *Journal of Climate*. doi: 10.1175/JCLI-D-20-0780.1

### GRANTS

Future Investigators in NASA Earth and Space Science and Technology (FINESST). 2021-2022. *Determining the Dynamical Drivers of Present and Future Changes in the Atmospheric Water Cycle*. Smith, S. (PI) and Staten, P.W. (PI). \$51,975.

### RESEARCH EXPERIENCE

- 2021-2023 FINESST Fellow. Indiana University. Bloomington, IN.  
PI: Paul Staten, Associate Professor of Atmospheric Science.
- 2018-2020 Research Assistantship. Indiana University. Bloomington, IN.  
Advisor: Paul Staten, Associate Professor of Atmospheric Science.
- 2013-2014 Undergraduate Student Research Program. Butler University.  
Advisor: Gonzalo Ordonez, Professor of Physics & Astronomy.

## CONFERENCES AND PRESENTATIONS

### *Invited Presentations*

- 2021 “The Wavy Rain: How the “Local Hydrologic Cycle” Diagnoses the Dynamical Drivers of Wet (and Dry) Anomalies.” Purdue University “Storm Snacks” Seminar (virtual).

### *Oral Presentations*

- 2022 “Diabatic Eddy Forcing Increases Persistence and Assists Propagation of the Intraseasonal Southern Annular Mode.” Fall Meeting of the American Geophysical Union. Chicago, IL.
- 2022 “Revisiting the Role of Diabatic Eddy Generation in the Persistence of the Southern Annular Mode.” Crossroads Conference. Indiana University, Bloomington, IN.
- 2020 “How Moist and Dry Intrusions Control the Local Hydrologic Cycle in Present and Future Climates.” Fall Meeting of the American Geophysical Union (virtual).
- 2019 “Anthropogenic Impacts on Hydrologic Cycle Extremes Mediated by Large-Scale Atmospheric Turbulence.” Crossroads Conference. Indiana University. Bloomington, IN.

### *Poster Presentations*

- 2022 “How Internal and External Processes Control Variability in the Location of the Southern Hemisphere Jetstream.” Midwest Climate Workshop. Purdue University, West Lafayette, IN.
- 2022 “Diabatic Heating Increases Southern Annular Mode Persistence in MERRA2 by Modifying Anticyclonic Wave Breaking.” American

Meteorological Society Conference on Atmospheric and Ocean Fluid Dynamics. Breckenridge, CO.

- 2021      “How Do the Dominant Modes of Jet Variability Respond to Diabatic Heat Sources?” Fall Meeting of the American Geophysical Union. New Orleans, LA.
- 2019      “How much will a changing meridional surface temperature gradient affect the midlatitudes?” Fall Meeting of the American Geophysical Union. San Francisco, CA.
- 2019      “Dynamics Behind Forced Wet and Dry Extremes in CESM LENS.” American Meteorological Society Conference on Atmospheric and Ocean Fluid Dynamics. Portland, ME.
- 2018      “Zonal-mean Zonal Wind Response to Surface Heat Fluxes over the North Atlantic: a Wave Activity Approach.” Fall Meeting of the American Geophysical Union. Washington, DC.
- 2018      “Response of Hydrologic Cycle Extremes over the U.S to Climate Change in CESM LENS.” Midwest Student Conference on Atmospheric Research. University of Illinois. Urbana-Champaign, IL.
- 2018      “Local Finite-Amplitude Wave Activity and the Extreme Weather of 1936.” Crossroads Conference. Indiana University. Bloomington, IN.

#### TEACHING EXPERIENCE

- Spring 2021    Teaching Assistant. Indiana University, Bloomington.  
Records of Global Climate Change
- 2014-2016    Highlands Latin School, Indianapolis, IN.  
Upper School Faculty. Developed and taught Introductory Physics, Advanced Physics, Earth Science, Music History, and Honors Algebra 2

#### SEMINARS, WORKSHOPS, AND OTHER EXPERIENCES

- 2021      Machine Learning Workshop. Co-host. Department of Earth & Atmospheric Science, Indiana University Bloomington. Bloomington, IN.
- 2020-2021    Unlearning Racism in Geoscience. Participant, IU Earth & Atmospheric Sciences Pod.

2019            Community Earth System Model (CESM) Tutorial. Participant. Boulder, CO.

## HONORS AND AWARDS

2017            Indiana University Atmospheric Science Fellowship  
 2014            Robert O. Whitesell Award for Excellence in Physics  
 2013            H. Marshall Dixon Award for Excellence in Physics  
 2012            Segal AmeriCorps Education Award

## PROFESSIONAL MEMBERSHIPS

2017-present American Geophysical Union  
 2017-present American Meteorological Society  
 2014-2015    Sigma Pi Sigma Honorary Physics Fraternity  
 2014-2015    American Physical Society  
 2013-2015    Pi Kappa Lambda Honorary Music Fraternity

## EMPLOYMENT

2016-2017    Software Trainer/Release Coordinator. Eskenazi Health Services. Indianapolis, IN.  
 2014-2016    Upper School Faculty. Highlands Latin School. Indianapolis, IN.

## SERVICE

2021            “The Dynamics of Large-Scale Atmospheric Circulation in Present and Future Climates: Jet Streams, Storm Tracks, Stationary Waves, and Monsoons.” Co-chair and Outstanding Student Presentations Award (OSPA) co-coordinator and judge. Fall Meeting of the American Geophysical Union. New Orleans, LA.  
 2021            Holland Research Initiative in STEM Education. Co-presenter. Bloomington, IN.  
 2019            Wonderlab Summer Science Institute - Educating for Environmental Change. Teaching Assistant. Bloomington, IN.

2015 Volunteer Income Tax Assistance (VITA) Program. Volunteer.  
Indianapolis, IN.