SAMUEL SMITH

Curriculum Vitae

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EDUCATION

2017-2023 (expected) PhD, Atmospheric Science; Scientific Computing Minor
Advisor: Paul Staten
Indiana University, Bloomington, IN

2011-2015 B.A., cum laude, Music with High Honors and Physics with Honors
Advisor: Gonzalo Ordonez
Butler University, Indianapolis, IN

PUBLICATIONS

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

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

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. (FI) and Staten, P.W. (PI). $51,975.

RESEARCH EXPERIENCE

2021-2022 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-Champagne, 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.