Molly Menzel

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Research Interests

Large-scale atmospheric circulation, climate dynamics, tropical-extratropical interactions, stratosphere-troposphere connections

Education

2017 – present **Johns Hopkins University | Baltimore, MD**
Ph.D. Earth and Planetary Sciences 4.0 GPA

2015 – 2017 **McGill University | Montreal, QC**
M.Sc. Atmospheric and Oceanic Sciences 3.8 GPA

2010 – 2014 **Virginia Tech | Blacksburg, VA**
B.S. Engineering Science and Mechanics 3.55 GPA

Experience

2017 – present **Johns Hopkins University, Department of Earth and Planetary Science**
Current project: understanding the dynamical behavior of the subtropical jet and its impact on other aspects of the atmospheric circulation, analyzing IPCC CMIP5 datasets and designing idealized model simulations

2015 – 2017 **McGill University, Department of Atmospheric and Oceanic Sciences**
Thesis project: examined the impact of direct effects of CO_2 radiative forcing on the efficiency of deep ocean heat uptake, perturbed Modular Ocean Model simulations and analyzed IPCC CMIP5 simulations

2014 – 2015 **World Race, Adventures in Missions (AIM)**
Traveled to a new country each month, 11 months total, to aid existing organizations in efforts to develop local communities

2013 – 2014 **Virginia Tech, Department of Engineering Science and Mechanics**
Capstone Project: computationally modeled fluid flow of a batoids locomotion as well as built bio-mimetic robot to optimize efficiency and stealth of underwater vehicles

Journal Publications

Menzel, Molly E., Darryn Waugh (2021): A refined view of the Subtropical Jet and Hadley Cell coupling. *In prep*.

Menzel, Molly E., Darryn Waugh, and Kevin Grise (2019): Disconnect between Hadley Cell and Subtropical Jet variability and response to increased CO2. *Geophysical Research Letters*.

Menzel, Molly E. and T. M. Merlis (2019): Connecting direct effects of CO2 radiative forcing to ocean heat uptake and circulation. *Journal of Advances in Modeling Earth Systems*.

Presentations

2021	University of Exeter (invited virtual talk)
2020	AGU Fall Meeting (virtual poster)
2019	AMS 22nd Conference on Atmospheric and Oceanic Fluid Dynamics (talk)
	Joint DynVarMIP/CMIP6 and SPARC DynVar & SNAP Workshop (talk)
2018	AGU Fall Meeting (poster)
2017	AMS 21st Conference on Atmospheric and Oceanic Fluid Dynamics (poster)

Teaching and Outreach

2021	Dean's Prize Fellowship | Johns Hopkins University AS.270.348: Freshman Seminar, Communicating Climate Science
2020	Dean's Teaching Fellowship | Johns Hopkins University AS.270.348: Communicating Climate Science
2019	Guest Lecturer and Teaching Assistant | Johns Hopkins University AS.270.378/641: Present and Future Climates
2019	Completion of Teaching Institute | Johns Hopkins Teaching Academy
2017	Outreach | Faith Presbyterian Church
2016 – 2017	Teaching Assistant | McGill University ATOC 181: Introduction to Atmospheric Science ATOC 215: Oceans, Weather and Climate
2014	Physics Outreach | Virginia Tech Physics Department Elementary, middle, and high school classrooms
2013	Teaching Assistant | Johns Hopkins Center for Talented Youth Principles of Engineering Design

Awards and Professional Affiliations

2019 – present	ISSI Tropical Width Impacts on the Stratosphere Team, Young Scientist
2020 – present	AMS Atmospheric and Oceanic Fluid Dynamics Committee, Student Member
2019	Outstanding Student Oral Presentation Award, 22nd Atmospheric and Oceanic Fluid Dynamics Conference
2014	Dan H. Pletta Award, Outstanding Department Senior Research Project

Member of American Meteorological Society, American Geophysical Union
Reviewer for *Journal of Climate*

References

Dr. Darryn Waugh | Johns Hopkins University
Dr. Timothy Merlis | McGill University