

# Molly Menzel, PhD

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## Research Interests

Large-scale atmospheric circulation, climate dynamics, stratosphere-troposphere connections

## Experience

2022 – present **NASA Postdoctoral Program Fellow** | Goddard Institute for Space Studies  
New York, NY    Advisor: Clara Orbe

## Education

2022            **Ph.D. Johns Hopkins University** | Earth and Planetary Sciences  
Baltimore, MD    Advisor: Darryn Waugh

2017            **M.Sc. McGill University** | Atmospheric and Oceanic Sciences  
Montreal, QC    Advisor: Timothy Merlis

2014            **B.Sc. Virginia Tech** | Engineering Science and Mechanics  
Blacksburg, VA    Capstone Project: computationally modeled fluid flow of a batoids locomotion

## Refereed Journal Publications

Menzel, Molly E., Darryn W. Waugh, and Zheng Wu, 2023: Replicating the Hadley Cell and subtropical jet disconnect in idealized atmospheric models. *Weather and Climate Dynamics*, in revision.

Menzel, Molly E., Darryn W. Waugh, and Clara Orbe, 2023: Connections between upper tropospheric and lower stratospheric circulation responses to increased CO<sub>2</sub>. *Journal of Climate*, **36 (12)**, 4101-4112.  
<https://doi.org/10.1175/JCLI-D-22-0851.1>

Menzel, Molly E., Darryn W. Waugh, and Kevin M. Grise, 2019: Disconnect between Hadley Cell and Subtropical Jet variability and response to increased CO<sub>2</sub>. *Geophysical Research Letters*, **46 (12)**, 7045-7053. <https://doi.org/10.1029/2019GL083345>

Menzel, Molly E. and Timothy M. Merlis, 2019: Connecting direct effects of CO<sub>2</sub> radiative forcing to ocean heat uptake and circulation. *Journal of Advances in Modeling Earth Systems*, **11 (7)**, 2163-2176.  
<https://doi.org/10.1029/2018MS001544>

## Presentations

### Invited Talks

2023            Lamont–Doherty Earth Observatory  
2022            NASA Goddard Institute for Space Studies  
2021            University of Exeter (virtual)  
                  McGill University (virtual)

### Conference Talks

2023            AMS 103<sup>rd</sup> Annual Meeting, 36<sup>th</sup> Conference on Climate Variability and Change

- 2022 AMS 23<sup>rd</sup> Conference on Atmospheric and Oceanic Fluid Dynamics
- 2019 AMS 22<sup>nd</sup> Conference on Atmospheric and Oceanic Fluid Dynamics  
Joint DynVarMIP/CMIP6 and SPARC DynVar & SNAP Workshop

### **Conference Posters**

- 2022 SPARC 7<sup>th</sup> General Assembly
- 2020 AGU Fall Meeting
- 2018 AGU Fall Meeting
- 2017 AMS 21<sup>st</sup> Conference on Atmospheric and Oceanic Fluid Dynamics

### **Awards, Certificates, Professional Affiliations**

- 2023 Science Policy and Advocacy Certificate Program
- 2023 – present AGU Outstanding Student Presentation Award Committee, Atmospheric Science
- 2022 – present NASA Postdoctoral Program Fellowship
- 2022 – present AMS Atmospheric and Oceanic Fluid Dynamics Committee
- 2019 – present ISSI Tropical Width Impacts on the Stratosphere Team, Young Scientist
- 2020 – 2022 AMS Atmospheric and Oceanic Fluid Dynamics Committee, Student Member
- 2019 Outstanding Student Oral Presentation Award,  
22<sup>nd</sup> Atmospheric and Oceanic Fluid Dynamics Conference
- 2014 Dan H. Pletta Award, Outstanding Department Senior Research Project

**Member of** American Meteorological Society, American Geophysical Union, National Association of Geoscience Teachers

**Reviewer for** *Journal of Climate*, *Geophysical Research Letters*

### **Teaching, Outreach, Volunteering**

- 2018 – 2022 Student Seminar Coordinator | Johns Hopkins University  
AS.270.606: Earth and Planetary Science Colloquium
- 2021 Dean’s Prize Fellowship | Johns Hopkins University  
AS.270.130: Freshman Seminar, Communicating Climate Science
- 2019 Completion of Johns Hopkins Teaching Academy
- 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
- 2017 Outreach | Faith Presbyterian Church
- 2016 – 2017 Teaching Assistant | McGill University  
ATOC 181: Introduction to Atmospheric Science  
ATOC 215: Oceans, Weather and Climate
- 2014 – 2015 World Race | Adventures in Missions
- 2014 Physics Outreach | Virginia Tech Physics Department  
Elementary, middle, and high school classrooms