

Isabelle Bunge

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EDUCATION

Smith College

BA in Physics and BA in French Studies

Northampton, MA

Degree Completed: May 2018

Columbia University

MS in Applied Mathematics

New York City, NY

Degree Completed: May 2021

Columbia University

PhD in Applied Mathematics

New York City, NY

Expected Completion: May 2024

EXPERIENCE

Columbia University

Graduate Student

New York City, NY

Aug 2019 - Present

- Worked as a teaching assistant in courses related to linear algebra, numerical methods, and climate science.
- Analyzing data from a 2019 in-situ research campaign in the eastern Pacific.
- Studying atmospheric trends in the tropical eastern Pacific using observations and numerical modeling (specifically using the Weather Research and Forecasting model).
- Studying impacts of equatorial waves on tropical sub-seasonal precipitation.
- Serving as a Lamont Ocean and Climate Physics Seminar Organizer for the 2023 - 2024 academic year.

Common Denominator

Volunteer Tutor

New York City, NY

Jan 2020 - Present

- Currently, I volunteer math tutoring services through Common Denominator (formerly known as Top Honors), which acts to promote equity in mathematical education for children.
- Especially with the closure of schools during the pandemic, the goal of Common Denominator and its tutors has been to reduce learning loss experienced by students during the pandemic.

New York Academy of Sciences

Scientist in Residence

New York City, NY

Aug 2021 - May 2022

- Worked under the Scientist-in-Residence (SIR) program funded by the New York Academy of Sciences (NYAS) to produce and teach a year-long atmospheric science course for middle school students.
- Worked with a middle school class to produce an end-of-year project to present to the NYAS and other school participating in SIR. Our class created a Arduino-based weather station and made short-term weather predictions for the local NYC area. Our class was awarded first prize for their SIR project.

O'Neill Service Group

Environmental Intern

Redmond, WA

Nov 2018 - May 2019

- Worked as an intern for the Environmental Department of O'Neill Service Group (OSG).
- Aided with collecting and analyzing storm-water samples from different project sites around the greater Seattle Area.
- Wrote and edited environmental compliance plans and reviews for different job sites.

Smith College

Learning Assistant

Northampton, MA

Jan 2018 - May 2018

- Worked in an introductory physics classroom as an assistant. I would help conduct demos in the classroom, aid the teacher in explaining general concepts, and help students understand the labs.

Smith College

Thesis Student

Northampton, MA

Sep 2017 - May 2018

- Developed my senior thesis in the lab of Prof. Will Williams. This project focused on the construction and testing of a PID (Proportional Integral, Differential) controller circuit, which creates a feedback loop to tune the power of a laser.

Publications

- “Variable Rainfall over Steady SST: The Effect of the Free Troposphere on Surface Pressure in the East Pacific”

Authors: Isabelle Bunge, Adam Sobel, Michela Biasutti, and Shuguang Wang

Manuscript accepted for publication to the *Journal of the Atmospheric Sciences*

Presentations

Columbia University

New York City, New York

APAM Research Conference

Feb 2022

- Presentation Title: *Convection and the Boundary Layer Convergence in the Tropical East Pacific*

2023 American Meteorology Conference

Denver, Colorado

11th Symposium on the MJO and Sub-Seasonal Monsoon Variability

Jan 2023

- Presentation Title: *SST-Induced Boundary Layer Convergence Variability in Relation to Precipitation*

Additional

- Programming: Python, C, C++, and Java
- Fluent in French and has basic abilities in Spanish.