Ben Buchovecky

CONTACT INFORMATION

bbucho@uw.edu

https://github.com/bbuchovecky

EDUCATION

University of Washington | Seattle, WA — 2024 - Present
M.S. Student (intended Ph.D.) in Atmospheric and Climate Science
Advisor: Prof. Abigail Swann

Princeton University | Princeton, NJ — 2019 - 2023
B.A. in Geosciences (oceans, atmosphere, and climate track)
Summa Cum Laude

HONORS AND AWARDS

Peter W. Stroh '51 Environmental Thesis Prize | Princeton University — 2023
Best senior thesis on an environmental topic

Arthur F. Buddington Award | Princeton University, Geosciences — 2023
Overall excellence in Geosciences

Membership in the Sigma Xi Society | Princeton University, Geosciences — 2023

Benjamin F. Howell Class of 1913 Prize | Princeton University, Geosciences — 2022
Excellence in junior independent research in Geosciences

RESEARCH EXPERIENCE

Research Scientist, Ecoclimate Lab | University of Washington — 2023 - 2024
Advisor: Prof. Abigail Swann

- Using CESM2 simulations to examine the hydrologic response to changes in land evapotranspiration from land parameter perturbations

Senior Thesis, Vecchi Group | Princeton University — 2022 - 2023
Advisor: Prof. Gabriel Vecchi
"Effect of the plant physiological response to CO_2 on tropical precipitation and the ITCZ"

- Investigated tropical precipitation change using a variety of ITCZ metrics and quantified interhemispheric energy imbalances across 13 CMIP6 models
- Designed and ran experiments with the GFDL-AM2.5 model to further examine the tropical precipitation response globally and regionally in Africa

Research Internship, Ecoclimate Lab | University of Washington — 2022
Advisors: Prof. Abigail Swann, Prof. Kyle Armour
"Impacts of high-latitude land-climate interactions on Arctic climate change"

- Explored the contribution of the plant physiological response to Arctic amplification and heat transport across multiple CMIP6 models

Research Internship | Princeton University & NOAA GFDL — 2021
Advisors: Dr. Mitch Bushuk, Dr. Graeme MacGilchrist, Dr. Alex Haumann
"Potential predictability of the spring bloom in the Southern Ocean sea-ice zone"

- Quantified the seasonal-to-decadal predictability of phytoplankton blooms using a suite of perfect model experiments with the GFDL-ESM2M model

- Developed a mechanistic explanation for the progression of predictability from sea ice to biogeochemical fields in the Southern Ocean

Junior Project, Resplandy Group | Princeton University 2021
Advisor: Prof. Laure Resplandy
"The effect of an amplified hydrological cycle on dissolved oxygen in the ocean"

- Examined how the "wet-get-wetter, dry-get-drier" paradigm affects sub-surface dissolved oxygen through surface salinity-driven circulation changes

PUBLICATIONS

Buchovecky, B., MacGilchrist, G. A., Bushuk, M., Haumann, F. A., Frölicher, T. L., Le Grix, N., & Dunne, J. (2023). Potential predictability of the spring bloom in the Southern Ocean sea ice zone. *Geophysical Research Letters*, 50, e2023GL105139.

PRESENTATIONS

CESM Land Model & Biogeochemistry Working Group Meeting, NCAR. February 2025. **Buchovecky, B**; Swann, ALS; Kennedy, D; Hawkins, LR; Dagon, K; Simpson, IR; Lawrence, DM; Weider, WR. "A New Coupled PPE Under Transient Forcing to Quantify Drivers of ET" (*talk*).

Annual Meeting, AGU. December 2024. **Buchovecky, B**; Zarakas, CM; Lague, MM; Lambert, FH; Koven, CD; Booth, BBB; Fung, IY; Swann, ALS. "Precipitation Over Land Decreases with Evapotranspiration-Driven Warming" (*invited talk*).

RUBISCO Meeting, Department of Energy. December 2024. **Buchovecky, B**; Zarakas, CM; Lague, MM; Lambert, FH; Koven, CD; Booth, BBB; Fung, IY; Swann, ALS. "Precipitation Over Land Decreases with Evapotranspiration-Driven Warming" (*poster*).

CESM Land Model & Biogeochemistry Working Group Meeting, NCAR. February 2024. **Buchovecky, B**; Zarakas, CM; Lague, MM; Lambert, FH; Swann, ALS. "The global hydrologic response to land evapotranspiration-driven warming" (*talk*).

Thesis Defense, Princeton University. May 2023. **Buchovecky, B**. "Effect of the plant physiological response to CO_2 on tropical precipitation and the ITCZ" (*talk*).

Spring Junior Project Poster Session, Princeton University. May 2022. **Buchovecky, B**. "Potential predictability of the spring bloom in the Southern Ocean sea-ice zone" (*poster*).

Ocean Sciences Meeting, AGU, virtual. February 2022. **Buchovecky, B**; Bushuk, M; MacGilchrist, G; Haumann, A; Frölicher, T. "Potential predictability of the spring bloom in the Southern Ocean sea-ice zone" (*talk*).

Fall Junior Project Poster Session, Princeton University. December 2021. **Buchovecky, B**. "The effect of an amplified hydrological cycle on dissolved oxygen in the ocean" (*poster*).

CONFERENCES

CESM Land Model & Biogeochemistry Working Group Meeting | Boulder, CO 2025

AGU Annual Meeting (invited) | Washington, D.C. 2024

UW Program on Climate Change Summer Institute | Friday Harbor, WA 2024

	CESM Land Model & Biogeochemistry Working Group Meeting | Boulder, CO	2024
	UW Program on Climate Change Summer Institute | Friday Harbor, WA	2023
	Ocean Sciences Meeting, AGU | Virtual	2022

TECHNICAL SKILLS	Python, Git, shell scripting, NCAR Command Language (NCL), MATLAB, high performance computing

RELEVENT COURSEWORK	Atmospheric Radiation Atmospheric Thermodynamics & Convection Global Carbon Cycle & Climate Ocean Physics Glacier Physics Fluid Mechanics Modeling the Earth System Theoretical Ecology Scientific Computing Probability & Stochastic Systems Mathematics for Numerical Computing Algorithms & Data Structures