

Rory Basinski-Ferris

Education and employment

Oct. 2024– **Schmidt AI in Science Postdoctoral Fellow**

Scripps Institution of Oceanography, University of California San Diego

Advisor: Prof. Ian Eisenman

2018-2024 **PhD in Mathematics & Atmosphere-Ocean Science**

Courant Institute of Mathematical Sciences, New York University

Advisor: Prof. Laure Zanna

2014–2018 **Honours Bachelor of Integrated Science (Mathematics & Statistics Concentration)**

McMaster University

Summa Cum Laude. Undergraduate thesis advisor: Prof. Nicholas Kevlahan

Publications

10. Fredericks, L., Rugenstein, M., Thompson, D. W. J., Van Loon, S., Falasca, F., **Basinski-Ferris, R.**, Ceppi, P., Wu, Q., Bloch-Johnson, J., Alessi, M., Kang, S. "Quantifying the radiative response to surface temperature variability: A critical comparison of current methods." (*submitted*). [preprint](#)
9. **Basinski-Ferris, R.**, Zanna, L., and Eisenman, I. "Controls on the ocean response to idealized Antarctic meltwater input." (*submitted*). [preprint](#)
8. **Basinski-Ferris, A.**, Zanna, L., and Eisenman, I. 2025 "A theory for how the depth of meltwater injection impacts regional sea level evolution." *Journal of Physical Oceanography*. [10.1175/JPO-D-24-0153.1](#)
7. Falasca, F., **Basinski-Ferris, A.**, Zanna, L., and Zhao, M. 2025 "A fluctuation-dissipation theorem perspective on radiative responses to temperature perturbations." *Journal of Climate*. [10.1175/JCLI-D-24-0479.1](#)
6. Eisenman, I., **Basinski-Ferris, A.**, Beer, E., and Zanna, L. 2024 "The Sensitivity of the Spatial Pattern of Sea Level Changes to the Depth of Antarctic Meltwater Fluxes." *Geophysical Research Letters*. [10.1029/2024GL110633](#)
5. **Basinski-Ferris, A.** and Zanna, L. 2024. "Estimating freshwater flux amplification with ocean tracers via linear response theory." *Earth System Dynamics*. [10.5194/esd-15-323-2024](#)
4. Davis, P.E.D. et al. [including **Basinski-Ferris, A.**] 2023. "Suppressed basal melting in the eastern Thwaites Glacier grounding zone." *Nature*. [10.1038/s41586-022-05586-0](#).
3. Schmidt, B.E. et al. [including **Basinski-Ferris, A.**] 2023. "Heterogeneous melting near the Thwaites Glacier grounding line." *Nature*. [10.1038/s41586-022-05691-0](#).
2. Holland, D.M., Nicholls, K.W., **Basinski, A.** 2020. "The Southern Ocean and its Interaction with the Antarctic Ice Sheet." *Science*. [10.1126/science.aaz5491](#).

Undergraduate journals

1. **Basinski-Ferris, A.** 2017. "Comparison of Mathematical Models of Opinion Dynamics." *The iScientist (Undergraduate journal)*. <https://journals.mcmaster.ca/iScientist/article/view/1357>.

In preparation

- P1. **Basinski-Ferris, R.** and Eisenman, I. "Physical Processes Driving Surface Temperature Variability Changes in a Warming Climate." (*in prep, expected submission end of 2025*). [slides](#)

Awards & Distinctions

- 2024-2026 **Eric and Wendy Schmidt AI in Science Postdoctoral Fellowship**
Scripps Institution of Oceanography, University of California San Diego
- 2020 **Sandra Bleistein Prize**
Courant Institute of Mathematical Sciences, New York University
An award given annually for notable achievement in applied mathematics or computer science.
- 2018 **Henry M. MacCracken Graduate Fellowship**
New York University
- 2017 **NSERC Undergraduate Student Research Award**
Award held at McMaster University
Summer advisor: Prof. Walter Craig (Department of Mathematics & Statistics)
- 2014-2018 **Dean's Undergraduate Honour List**
McMaster University

Selected Presentations

- Sep 2025 **CalGFD Meeting, talk**
- Feb 2025 **Scripps Institution of Oceanography, Climate and Atmosphere Seminar, invited talk**
- May 2024 **NASA GISS Sea Level Seminar, invited talk**
- Feb 2024 **Ocean Sciences Meeting, talk**
- Dec 2023 **American Geophysical Union (AGU) Fall Meeting, talk**
- Spring 2023 **Community Earth System Model (CESM) working group meeting, talk**
- Dec 2022 **American Geophysical Union (AGU) Fall Meeting, talk**
- May 2022 **US CLIVAR Pattern Effect workshop, poster**
- Feb 2022 **Ocean Sciences Meeting, talk**
- Dec 2016 **Canadian Mathematical Society (CMS) winter meeting, poster**

Teaching

- 2023 **Curriculum development**
ClimateMatch Academy
Developed curriculum on ocean circulation for ClimateMatch Academy - an online summer school that aims to make education about computational climate science accessible to a global population.
- 2022 **TA for Dynamics of the Earth's Atmosphere and Climate**
Courant Institute, New York University

- 2020–2021 **Grader for Graduate Ocean Dynamics and Graduate Linear Algebra I**
Courant Institute, New York University
- 2016–2018 **Tutor for undergraduate calculus, linear algebra, and differential equations**
McMaster University

Selected service

- 2022– Peer reviewer for **Geophysical Model Development, JGR: Oceans, Earth's Future, Geophysical Research Letters**
- 2024-2025 **Mentor in the Scripps Mentoring Program for Undergraduates**
Scripps Institution of Oceanography, UCSD
- 2023 **Committee on PhD student survey**
Courant Institute, New York University
On a small committee of PhD students and faculty who analyzed survey results on departmental culture and presented key findings and action items.
- 2022-2024 **Discussion leader and participant in department DEI reading group**
Courant Institute, New York University
- Fall 2022 **Student co-host for visiting colloquium speaker**
Courant Institute, New York University
- Spring 2021 **Organizer for weekly Atmosphere Ocean Science Friday seminar**
Courant Institute, New York University
- 2015-2016 **Peer reviewer for Undergraduate Research Journal - 'The iScientist'**
McMaster University

Additional Activities

- Summer 2025 **Knowledge-Guided Machine Learning Workshop**
University of Michigan, Ann Arbor
- Summer 2022 **NASA Summer School on Satellite Observations and Climate Models**
Jet Propulsion Laboratory Center for Climate Sciences and the Keck Institute for Space Studies
- Spring 2021 **Participant in Unlearning Racism in the Geosciences (URGE)**
Courant Institute, New York University

Technical skills

- Code Python (including xarray, numpy, numba, matplotlib, scikit-learn, PyTorch), MATLAB
- Tools LaTeX, bash, git/GitHub, Jupyter