Rory Basinski-Ferris

Previous publication name: Aurora Basinski-Ferris

8810 Shellback Way, Office 219D
La Jolla, CA
+1 (646) 724 5318
rbasinskiferris@ucsd.edu
website

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

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

P2. **Basinski-Ferris, R.** and Eisenman, I. "Physical Processes Driving Surface Temperature Variability Changes in a Warming Climate." *(in prep, expected submission Nov 2025).* slides

P1. Fredericks, L., Rugenstein, M., Thompson, D. W. J., Van Loon, S., Falasca, F., **Basinski-Ferris, R.,** Wu, Q., Ceppi, P., Kang, S., Alessi, M., Bloch-Johnson, J. "Quantifying the radiative response to surface temperature variability: A critical comparison of current methods." *(in prep).*

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