ANDREW E. BRETTIN

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EDUCATION

PhD Candidate, Atmosphere-Ocean Science and Mathematics — **2019–present**
Courant Institute of Mathematical Sciences, New York University — *New York, NY*
Candidacy acquired April 2021
Advisor: Dr. Laure Zanna

Bachelor of Science, Mathematics — **May 2019**
University of Minnesota, College of Science & Engineering — *Minneapolis, MN*
Summa cum laude with High Distinction
GPA: 3.92

PUBLICATIONS

1. *(Under review)* Kate Meyer, James Broda, María Sanchez-Muñiz, Andrew Brettin. (2022) "Nitrogen-induced hysteresis in grassland biodiversity: a theoretical test of litter-mediated mechanisms." *American Naturalist*. Preprint: https://arxiv.org/abs/2208.12851
2. Andrew Brettin, Rosa Rossi-Goldthorpe, Kyle Weishaar, and Igor Erovenko. (2018). "Ebola could be eradicated through voluntary vaccination." *Royal Society Open Science* 5: 171591. https://doi.org/10.1098/rsos.171591

CONFERENCE PRESENTATIONS

Andrew Brettin and Laure Zanna (February 2022). *Characterizing the Impacts of Continental Shelf Depth on Sea Level Variability Using Clustering*. Poster session presented at AGU Ocean Sciences Meeting.

María Sanchez-Muñiz, Kate Meyer, and Andrew Brettin (May 2019). *Ecological Management Strategies Informed by Flow-Kick Dynamics*. Poster session presented at SIAM Conference on the Applications of Dynamical Systems, Snowbird, UT.

Andrew Brettin and Kyle Weishaar (November 2017). *Ebola Could Be Eradicated Through Voluntary Vaccination*. Undergraduate Research Conference at the Interface of Biology and Mathematics, Knoxville, TN.

Andrew Brettin (October 2017). *Ebola Could Be Eradicated Through Voluntary Vaccination*. Poster session presented at Council on Undergraduate Research REU Symposium, Alexandria, VA.

TEACHING EXPERIENCE

- **Teaching Assistant, Numerical Analysis** — **Fall 2022**
  New York University
- **Tutor, Honors Calculus I–IV** — **Fall 2016–Spring 2019**
  University Honors Program, University of Minnesota
- **Grader, Honors Physics II** — **Spring 2017**
  Department of Physics, University of Minnesota

SERVICE

- **Volunteer tutor, math grades 5-8** — Fall 2021–Spring 2022
  Common Denominator, New York, NY
- **Project mentor—Undergraduate Research Program in Data Science** — Spring 2021
  NYU Center for Data Science, collaboration with the National Society for Black Physicists

DEPARTMENTAL

- **Vice President, Courant Student Organization** — Fall 2021–Summer 2022
- **PhD Student mentor, Courant** — Fall 2020–present
- **Master's student mentor, Courant** — Spring 2020
- **Social coordinator, Courant Student Organization** — Fall 2019–Spring 2020

OTHER EXPERIENCE

- **LEAP Momentum Bootcamp on Climate Data Science** — Summer 2022
  Columbia University, New York, NY
- **OceanHackWeek Data Science and Oceanography Interactive Workshop** — Summer 2021
  University of Washington eScience Institute, Virtual workshop
- **Workshop on Climate Change and Resilience: Methods of Dynamical Systems and Data Assimilation** — Summer 2018
  American Institute of Mathematics, San Jose, CA
- **Undergraduate Research Intern** — Summer 2018
  REU in Computing Theory and Applications, DIMACS, Rutgers University
- **Undergraduate Research Intern** — Summer 2017
  REU in Mathematical Biology, University of North Carolina at Greensboro

TECHNICAL SKILLS

Programming languages and software:

- Languages: Python (packages: numpy, scipy, matplotlib, xarray, dask, pandas, scikit-learn), Julia, MATLAB, C++ (OpenMP, CUDA)
- Software: bash, git/GitHub, vim, SLURM, Jupyter, LaTeX, Mathematica

AWARDS & DISTINCTIONS

- **VoLo Fellow,** VoLo Foundation — 2020–present
- **Hans H. Dalaker Scholarship,** University of Minnesota — 2018
- **Gold Scholar Award,** University of Minnesota — 2015–2019

PROFESSIONAL MEMBERSHIPS

- Student Member, American Geophysical Union — 2021–present
- Student Member, American Meteorological Society — 2018–present
- Member, Society for Industrial and Applied Mathematics — 2017–present
- Member, Mathematics and Climate Research Network — 2017–2019