

ANDREW E. BRETTIN

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EDUCATION

PhD Candidate, Atmosphere-Ocean Science and Mathematics <i>Courant Institute of Mathematical Sciences, New York University</i> Candidacy acquired April 2021 Advisor: Dr. Laure Zanna	2019–present <i>New York, NY</i>
Bachelor of Science, Mathematics <i>University of Minnesota, College of Science & Engineering</i> <i>Summa cum laude</i> with High Distinction GPA: 3.924	May 2019 <i>Minneapolis, MN</i>

PUBLICATIONS

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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.

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

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|---|------------------------------|
| • Teaching Assistant, Numerical Analysis
<i>New York University</i> | Fall 2022 |
| • Tutor, Honors Calculus I–IV
<i>University Honors Program, University of Minnesota</i> | Fall 2016–Spring 2019 |
| • Grader, Honors Physics II
<i>Department of Physics, University of Minnesota</i> | Spring 2017 |

SERVICE

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

DEPARTMENTAL

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| • 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

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

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

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

PROFESSIONAL MEMBERSHIPS

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| • 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 |