

# Brendan Clark

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## EDUCATION

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**Ph.D.**, Atmospheric Science 2022-2024

Rutgers University, New Brunswick, NJ

“Stratospheric sulfate aerosol climate intervention implications for global agriculture”

Advisors: Professors Alan Robock and Lili Xia

**M.S.**, Atmospheric Science 2020-2022

Rutgers University, New Brunswick, NJ

**B.S.**, Environmental Science 2016-2020

University of Massachusetts, Amherst, MA

## WORK EXPERIENCE

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Postdoctoral Research Associate, Dr. Daniele Visioni’s group 2025-present

Cornell University, Department of Earth and Atmospheric Sciences

- Researching impacts of climate change and climate intervention on agriculture and terrestrial ecology using observations and climate model output

Graduate Research Assistant, Dr. Alan Robock’s group 2020-2025

Rutgers University, Department of Environmental Sciences

- Researched climate change and climate intervention impacts on crop production and quality by utilizing global climate models and global crop models

Undergraduate Research Assistant, Dr. Matthew Winnick’s group 2019-2020

University of Massachusetts Amherst, Department of Earth Sciences

- Analyzed nitrous oxide emissions from saturated shale samples using gas chromatography to understand greenhouse gas emissions associated with fracking

Undergraduate Research Assistant, Dr. Forrest Bowlick’s group 2019-2020

University of Massachusetts Amherst, Department of Earth Sciences

- Created a survey, conducted interviews with instructors, and analyzed course syllabi to understand how geocomputation course structure varies

Undergraduate Research Assistant, Dr. Scott Jackson’s group 2018-2019

University of Massachusetts Amherst, Department of Environmental Conservation

- Studied the GIS resources being used by Massachusetts organizations to inform their forest conservation decision making

## PUBLICATIONS

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**B. Clark, A. Robock, L. Xia, S. S. Rabin, J. R. Guarin, J. Jaegermeyr.** Stratospheric aerosol climate intervention could negatively impact crop nutritional value. *Submitted*

- B. Clark**, A. Robock, L. Xia, S. S. Rabin, J. R. Guarin, J. Jaegermeyr, G. Hoogenboom. Maize yield changes under sulfate aerosol climate intervention using three global gridded crop models. *Earth's Future* 13, e2024EF005269 (2025). 10.1029/2024EF005269
- N. Grant, A. Robock, L. Xia, J. Singh, **B. Clark**. Impacts on Indian agriculture due to stratospheric aerosol intervention using agroclimatic indices. *Earth's Future* 13, e2024EF005262 (2025). 10.1029/2024EF005262
- B. Clark**, L. Xia, A. Robock, S. Tilmes, J. H. Richter, D. Visioni, S. S. Rabin. Optimal climate intervention scenarios for crop production vary by nation. *Nature Food* 4, 902–911 (2023). 10.1038/s43016-023-00853-3
- F. Bowlick, **B. Clark**, et al. Understanding geocomputation education: A survey and syllabi informed review. *Research in Geographic Education* 23, 20-51 (2022).

## TEACHING EXPERIENCE

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- Guest Lecturer, Climate Modeling, Rutgers University Fall 2023
- Teaching Assistant, Geographic Information Systems, UMass Amherst Fall 2019
- Substitute Teacher, Algonquin Regional High School, Northborough, MA 2018-2019

## FIRST AUTHOR PRESENTATIONS

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### Talks

- “Crop Impacts from Stratospheric Aerosol Injection: A Multi-Scenario Overview”, ISIMIP-GGCM Workshop, University of Potsdam, Germany, May 2022
- “Discrepancies Between Fully Coupled and Offline CLM5 Crop Simulations”, NCAR Land Modeling Working Group Meeting, Boulder, CO, January-February 2022
- “Depicting Information and Remembering Your Audience: Impacts on Crop Production from Stratospheric Aerosol Climate Intervention”, Climate Engineering in Context Conference, University of Potsdam, Germany, October 2021
- “The Optimal Climate Intervention Scenario for Crop Production Varies by Nation”, Solar Climate Intervention Symposium, University of Exeter, UK, June 2023
- “A Proposal for a Multi-Crop Model Assessment of Stratospheric Aerosol Climate Intervention”, AgMIP-GGCM meeting, Columbia University, NY, June 2023
- “Stratospheric Aerosol Climate Intervention Could Negatively Impact Crop Nutritional Quality”, American Geophysical Union, San Francisco, CA, December 2023
- “Stratospheric Aerosol Climate Intervention Impacts on Crop Protein Content”, Gordon Research Conference, Barga, Italy, February 2024

### Posters

- “Impacts on Crop Production from Stratospheric Aerosol Injection”, American Geophysical Union, New Orleans, LA, December 2021
- “Can Crop Production be used as a Metric to Design Climate Intervention?”, American Geophysical Union, Chicago, IL, December 2022
- “Impacts on Crop Production from Stratospheric Aerosol Climate Intervention: A Multi-Scenario Overview”, Gordon Research Conference, Newry, ME, June 2022

- “Rutgers Impact Studies of Climate Intervention (RISCI) Laboratory Group Overview”, Geoengineering Modeling Intercomparison Project annual meeting| University of Exeter, UK, June 2023
- “Stratospheric Aerosol Climate Intervention Could Negatively Impact Crop Nutritional Quality”, Gordon Research Conference, Barga, Italy, February 2024
- “Sulfate Aerosol Climate Intervention Impacts on Maize Yield and Protein in Three Global Gridded Crop Models”, Geoengineering Modeling Intercomparison Project annual meeting, Cornell University, Ithaca, NY, July 2024
- “Stratospheric Aerosol Climate Intervention Could Reduce the Nutritional Value of Maize and Rice”, American Geophysical Union, Washington D.C., December 2024
- “Bias Adjusted and Statistically Downscaled SSP2-4.5 and ARISE-SAI scenarios”, DEGREES Global Forum on SRM, Cape Town, South Africa, May 2025

## **HONORS & AWARDS**

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| • John and Abigail Adams Scholarship Award   | 2016 |
| • Stanley Z. Koplik Certificate of Mastery with Distinction Award                  | 2016 |
| • Governor’s Citation in Recognition of Environmental Stewardship in Massachusetts | 2019 |
| • NSF NCAR University Small Allocation Award                                       | 2022 |
| • Rutgers Climate Institute Student Travel Support Award                           | 2022 |
| • Rutgers Graduate Program in Atmospheric Science Student Travel Support Award     | 2023 |
| • Rutgers Graduate Program in Atmospheric Science Student Travel Support Award     | 2024 |
| • GeoMIP Annual Meeting Travel Funding Award                                       | 2025 |

## **MEMBERSHIP IN PROFESSIONAL SOCIETIES**

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| • American Geophysical Union, Atmospheric Sciences Section | 2020-present |
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## **PARTICIPATION IN INTERNATIONAL EXPERIMENTS**

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| • Agricultural Modeling Intercomparison Project        | 2020-present |
| • Global Gridded Crop Modeling Intercomparison Project | 2020-present |
| • Geoengineering Modeling Intercomparison Project      | 2020-present |
| • Climate Intervention Biology Working Group           | 2020-present |
| • Inter-Sectoral Impact Model Intercomparison Project  | 2020-present |