Brendan Clark

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EDUCATION

Ph.D., Atmospheric Science, 2024
Department of Environmental Sciences, Rutgers University, New Brunswick, NJ
Advisors: Professors Alan Robock and Lili Xia

M.S., Atmospheric Science, 2022
Department of Environmental Sciences, Rutgers University, New Brunswick, NJ

B.S., Environmental Science, 2020
College of Natural Sciences, University of Massachusetts, Amherst, MA

PUBLICATIONS

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

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).

PROFESSIONAL EXPERIENCE

Graduate Research Assistant, Advisor: Dr. Alan Robock, Rutgers University, 2020-present

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

Undergraduate Research Assistant, Advisor: Dr. Matthew Winnick, UMass Amherst, 2019-2020

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

Undergraduate Research Assistant, Advisor: Dr. Forrest Bowlick, UMass Amherst, 2019-2020

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

Undergraduate Research Assistant, Advisor: Dr. Scott Jackson, UMass Amherst, 2018-2019

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

TEACHING EXPERIENCE

- 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

Talks

- "Crop Impacts from Stratospheric Aerosol Injection: A Multi-Scenario Overview", ISIMIP-GGCMI 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-GGCMI 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

HONORS & AWARDS

- 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
- 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

MEMBERSHIP IN PROFESSIONAL SOCIETIES

- American Geophysical Union, Atmospheric Sciences Section, 2020-present

PARTICIPATION IN INTERNATIONAL EXPERIMENTS

- 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