

LILI XIA

Department of Environmental Sciences
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EDUCATION

Rutgers University	New Brunswick, NJ
<i>Ph.D. in Atmospheric Science</i>	2014
Dissertation: <i>Could Geoengineering or a Regional Nuclear War Produce a Food Crisis in the 21st Century?</i>	
Academic advisor: <i>Alan Robock</i>	
Rutgers University	New Brunswick, NJ
<i>M.S. in Atmospheric Science</i>	2012
Peking University	Beijing, China
<i>M.S. in Quaternary Geology</i>	2007
Peking University	Beijing, China
<i>B.A. in Geography</i>	2004

APPOINTMENTS

Rutgers University-New Brunswick	
Assistant Research Professor, <i>Department of Environmental Sciences</i>	2021 - present
Research Associate, <i>Department of Environmental Sciences</i>	2017 - 2021
Postdoctoral Associate, <i>Center for Environmental Prediction</i>	2014 - 2017
Research Assistant, <i>Atmospheric Science Graduate Program</i>	2010 - 2014
Rutgers University-Newark	
Teaching Assistant, <i>Planet Earth and Planet Earth Lab</i>	2007 - 2010

GRANTS

1. Future of Life Institute, (PI), "The Cascading Impacts of Postnuclear Ultraviolet Radiation on Photosynthesizers in the Earth System," October 11, 2023 - October 13, 2026, \$249,888
2. Future of Life Institute, (co-PI, Alan Robock, PI), "Impacts of Nuclear War on Agriculture and Global Food Security," September 1, 2023 - August 31, 2026, \$500,000
3. NSF, ENG-2028541 (PI), "Collaborative Research: Global Agricultural Impacts of Stratospheric Aerosol Climate Intervention," October 1, 2020 - September 30, 2022, no-cost extension to September 30, 2023, \$266,842; supplemental funding with additional extension to March 31, 2024, \$52,802. Total funding award: \$319,644
4. NSF, AGS-2017113 (co-PI, Alan Robock, PI), "Stratospheric Aerosol Climate Intervention Designed to Minimize Negative Impacts," July 1, 2020 - June 30, 2023, no-cost extension to June 30, 2024, \$714,708
5. Safe Climate Research Initiative of SilverLining, Gift to Rutgers Impact Studies of Climate Intervention (co-directed by Lili Xia and Alan Robock) to study solar climate intervention, August 20, 2020, \$400,000, and February 24, 2021, additional \$100,000

PUBLICATIONS

1. Singh, J., Sahany, S., Robock, A., Grant, N., and Xia, L. Comparing quantile mapping and other statistical methods in downscaling rainfall for agriculture impacts. *Water Resources Research* (2024, submitted)
2. Feng, Z., Tan, M., Liew, J., Tye, M., Xia, L., and Zhang, F. Effects of solar radiation modification on precipitation extremes in Southeast Asia: Insights from the GeoMIP G6 Experiments. *Advances in Climate Change Research* (2024, submitted)
3. Du, H., Tan, M., Xia, L., Tew, Y., and Yaseen, Z. Assessment of tropical hydro-climatic responses to solar radiation management in the Kelantan River Basin, Malaysia, using GeoMIP6 and SWAT+ Models. *Journal of Water and Climate Change* (2024, under review)
4. Grant, N., Robock, A., Xia, L., Singh, J., and Clark, B. Impacts on Indian agriculture due to stratospheric aerosol intervention using agroclimatic indices. *Earth's Future* (2024, under review)
5. Clark, B., Robock, A., Xia, L., Rabin, S., Guarin, J., Hoogenboom, G., and Jägermeyr, J. Maize yield changes under sulfate aerosol climate intervention using three global gridded crop models. *Earth's Future* (2024, under review)
6. Jehn, F., Gajewski, L., Hedlund, J., Arnscheidt, C., Xia, L., Wunderling, N., and Denkenberger, D. Food trade disruption after global catastrophes. *Earth System Dynamics* (2024, submitted)
7. Singh, J., Lombardozzi, D., Walmsley, E., Xia, L., Lerda, M., and Robock, A. Improved global understanding of ozone damage to crops and trees. *Journal of Geophysical Research - Biogeosciences* (2024, submitted)
8. Singh, J., Sahany, S., Singh, K. K., Robock, A., and Xia, L. Future climate change impacts on rice in Uttar Pradesh, India's most populous agrarian state. *Earth's Future* **12**(5), e2023EF004009 (2024). doi:<https://doi.org/10.1029/2023EF004009>
9. Rabin, S. S., Sacks, W. J., Lombardozzi, D. L., Xia, L., and Robock, A. Observation-based sowing dates and cultivars significantly affect yield and irrigation for some crops in the Community Land Model (CLM5). *Geoscientific Model Development* **16**(24), 7253–7273 (2023). doi:10.5194/gmd-16-7253-2023
10. Clark, B., Xia, L., Robock, A., Tilmes, S., Richter, J. H., Vioni, D., and Rabin, S. Optimal Climate Intervention Scenarios for Crop Production Vary by Nation. *Nature Food* **4**, 902–911 (2023). doi:10.1038/s43016-023-00853-3
11. Mousavi, S. V., Karami, K., Tilmes, S., Muri, H., Xia, L., and Rezaei, A. Future dust concentration over the Middle East and North Africa region under global warming and stratospheric aerosol intervention scenarios. *Atmospheric Chemistry and Physics* **23**(18), 10677–10695 (2023). doi:10.5194/acp-23-10677-2023
12. Tang, W., Tilmes, S., Lawrence, D. M., Li, F., He, C., Emmons, L. K., Buchholz, R. R., and Xia, L. Impact of Solar Geoengineering on Wildfires in the 21st Century in CESM2/WACCM6. *Atmospheric Chemistry and Physics* **23**(9), 5467–5486 (2023). doi:10.5194/acp-23-5467-2023
13. Robock, A., Xia, L., Harrison, C. S., Coupe, J., Toon, O. B., and Bardeen, C. G. Opinion: How Nuclear Winter has Saved the World, So Far. *Atmospheric Chemistry and Physics* **23**(12), 6691–6701 (2023). doi:10.5194/acp-23-6691-2023
14. Vioni, D., Kravitz, B., Robock, A., Tilmes, S., Haywood, J. M., Boucher, O., Lawrence, M., Irvine, P., Niemeier, U., Xia, L., Chiodo, G., Lennard, C., Watanabe, S., Moore, J. C., and Muri, H. Opinion: The Scientific and Community-Building Roles of the Geoengineering Model Intercomparison Project (GeoMIP) - Past, Present, and Future. *Atmospheric Chemistry and Physics* **23**(9), 5149–5176 (2023). doi:10.5194/acp-23-5149-2023
15. Xia, L., Robock, A., Scherrer, K., Harrison, C. S., Bodirsky, B. L., Weindl, I., Jägermeyr, J., Bardeen, C. G., Toon, O. B., and Heneghan, R. Global food insecurity and famine from reduced crop, marine fishery and livestock production due to climate disruption from nuclear war soot injection. *Nature Food* **3**(8), 586–596 (2022). doi:10.1038/s43016-022-00573-0
16. Hochman, G., Zhang, H., Xia, L., Robock, A., Saketh, A., van der Mensbrugghe, D. Y., and Jägermeyr, J. Economic incentives modify agricultural impacts of nuclear war. *Environmental Research Letters* **17**(5), 054003 (2022). doi:10.1088/1748-9326/ac61c7

17. Bardeen, C. G., Kinnison, D. E., Toon, O. B., Mills, M. J., Vitt, F., Xia, L., Jägermeyr, J., Lovenduski, N. S., Scherrer, K. J. N., Clyne, M., and Robock, A. Extreme Ozone Loss Following Nuclear War Results in Enhanced Surface Ultraviolet Radiation. *Journal of Geophysical Research: Atmospheres* **126**(18) (2021). doi:10.1029/2021jd035079
18. Eastham, S., Doherty, S., Keith, D., Richter, J., and Xia, L. Improving Models for Solar Climate Intervention Research. *Eos* **102** (2021). doi:10.1029/2021eo156087
19. Zarnetske, P. L., Gurevitch, J., Franklin, J., Groffman, P. M., Harrison, C. S., Hellmann, J. J., Hoffman, F. M., Kothari, S., Robock, A., Tilmes, S., Vioni, D., Wu, J., Xia, L., and Yang, C.-E. Potential ecological impacts of climate intervention by reflecting sunlight to cool Earth. *Proceedings of the National Academy of Sciences* **118**(15) (2021). doi:10.1073/pnas.1921854118
20. Scherrer, K. J. N., Harrison, C. S., Heneghan, R. F., Galbraith, E., Bardeen, C. G., Coupe, J., Jägermeyr, J., Lovenduski, N. S., Luna, A., Robock, A., Stevens, J., Stevenson, S., Toon, O. B., and Xia, L. Marine wild-capture fisheries after nuclear war. *Proceedings of the National Academy of Sciences* **117**(47), 29748–29758 (2020). doi:10.1073/pnas.2008256117
21. Yang, C.-E., Hoffman, F. M., Ricciuto, D. M., Tilmes, S., Xia, L., MacMartin, D. G., Kravitz, B., Richter, J. H., Mills, M., and Fu, J. S. Assessing terrestrial biogeochemical feedbacks in a strategically geoengineered climate. *Environmental Research Letters* **15**(10), 104043 (2020). doi:10.1088/1748-9326/abacf7
22. Xu, Y., Lin, L., Tilmes, S., Dagon, K., Xia, L., Diao, C., Cheng, W., Wang, Z., Simpson, I., and Burnell, L. Climate engineering to mitigate the projected 21st-century terrestrial drying of the Americas: a direct comparison of carbon capture and sulfur injection. *Earth System Dynamics* **11**(3), 673–695 (2020). doi:10.5194/esd-11-673-2020
23. Tilmes, S., MacMartin, D. G., Lenaerts, J. T. M., van Kampenhout, L., Muntjewerf, L., Xia, L., Harrison, C. S., Krumhardt, K. M., Mills, M. J., Kravitz, B., and Robock, A. Reaching 1.5 and 2.0 °C global surface temperature targets using stratospheric aerosol geoengineering. *Earth System Dynamics* **11**(3), 579–601 (2020). doi:10.5194/esd-11-579-2020
24. Vioni, D., Slessarev, E., MacMartin, D. G., Mahowald, N. M., Goodale, C. L., and Xia, L. What goes up must come down: impacts of deposition in a sulfate geoengineering scenario. *Environmental Research Letters* **15**(9), 094063 (2020). doi:10.1088/1748-9326/ab94eb
25. Jägermeyr, J., Robock, A., Elliott, J., Müller, C., Xia, L., Khabarov, N., Folberth, C., Schmid, E., Liu, W., Zabel, F., Rabin, S. S., Puma, M. J., Heslin, A., Franke, J., Foster, I., Asseng, S., Bardeen, C. G., Toon, O. B., and Rosenzweig, C. A regional nuclear conflict would compromise global food security. *Proceedings of the National Academy of Sciences* **117**(13), 7071–7081 (2020). doi:10.1073/pnas.1919049117
26. Robock, A., Toon, O. B., Bardeen, C. G., Xia, L., Kristensen, H. M., McKinzie, M., Peterson, R. J., Harrison, C. S., Lovenduski, N. S., and Turco, R. P. How an India–Pakistan nuclear war could start—and have global consequences. *Bulletin of the Atomic Scientists* **75**(6), 273–279 (2019). doi:10.1080/00963402.2019.1680049
27. Toon, O. B., Bardeen, C. G., Robock, A., Xia, L., Kristensen, H., McKinzie, M., Peterson, R. J., Harrison, C. S., Lovenduski, N. S., and Turco, R. P. Rapidly expanding nuclear arsenals in Pakistan and India portend regional and global catastrophe. *Science Advances* **5**(10) (2019). doi:10.1126/sciadv.aay5478
28. Toon, O. B., Robock, A., Mills, M., Xia, L., and Bardeen, C. Climatic Consequences and Agricultural Impacts of Nuclear Conflicts, Chapter 24. In *Global Change and Future Earth*, Beer, T., Li, J., and Alverson, K., editors, 328–340. Cambridge University Press (2018). doi:10.1017/9781316761489.032
29. Trisos, C. H., Gabriel, C., Robock, A., and Xia, L. Ecological, Agricultural, and Health Impacts of Solar Geoengineering. In *Resilience*, Alverson, K. and Zommers, Z., editors, 291–303. Elsevier (2018). doi:10.1016/b978-0-12-811891-7.00024-4
30. Trisos, C. H., Amatulli, G., Gurevitch, J., Robock, A., Xia, L., and Zambri, B. Potentially dangerous consequences for biodiversity of solar geoengineering implementation and termination. *Nature Ecology & Evolution* **2**(3), 475–482 (2018). doi:10.1038/s41559-017-0431-0
31. Xia, L., Nowack, P. J., Tilmes, S., and Robock, A. Impacts of stratospheric sulfate geoengineering on tropospheric ozone. *Atmospheric Chemistry and Physics* **17**(19), 11913–11928 (2017). doi:10.5194/acp-17-11913-2017

32. Sugiyama, M., Asayama, S., Ishii, A., Kosugi, T., Moore, J. C., Lin, J., Lefale, P. F., Burns, W., Fujiwara, M., Ghosh, A., Horton, J., Kurosawa, A., Parker, A., Thompson, M., Wong, P.-H., and Xia, L. The Asia-Pacific's role in the emerging solar geoengineering debate. *Climatic Change* **143**(1-2), 1–12 (2017). doi:10.1007/s10584-017-1994-0
33. Toon, O. B., Robock, A., Mills, M., and Xia, L. Asia Treads the Nuclear Path, Unaware That Self-Assured Destruction Would Result from Nuclear War. *The Journal of Asian Studies* **76**(2), 437–456 (2017). doi:10.1017/s0021911817000080
34. Gabriel, C. J., Robock, A., Xia, L., Zambri, B., and Kravitz, B. The G4Foam Experiment: global climate impacts of regional ocean albedo modification. *Atmospheric Chemistry and Physics* **17**(1), 595–613 (2017). doi:10.5194/acp-17-595-2017
35. Xia, L., Robock, A., Tilmes, S., and Neely, R. R. Stratospheric sulfate geoengineering could enhance the terrestrial photosynthesis rate. *Atmospheric Chemistry and Physics* **16**(3), 1479–1489 (2016). doi:10.5194/acp-16-1479-2016
36. Xia, L., Robock, A., Mills, M., Stenke, A., and Helfand, I. Decadal reduction of Chinese agriculture after a regional nuclear war. *Earth's Future* **3**(2), 37–48 (2015). doi:10.1002/2014ef000283
37. Xia, L., Robock, A., Cole, J., Curry, C. L., Ji, D., Jones, A., Kravitz, B., Moore, J. C., Muri, H., Niemeier, U., Singh, B., Tilmes, S., Watanabe, S., and Yoon, J.-H. Solar radiation management impacts on agriculture in China: A case study in the Geoengineering Model Intercomparison Project (GeoMIP). *Journal of Geophysical Research: Atmospheres* **119**(14), 8695–8711 (2014). doi:10.1002/2013jd020630
38. Xia, L. and Robock, A. Impacts of a nuclear war in South Asia on rice production in Mainland China. *Climatic Change* **116**(2), 357–372 (2012). doi:10.1007/s10584-012-0475-8
39. Xia, L. and Gao, Y. Characterization of trace elements in PM2.5 aerosols in the vicinity of highways in northeast New Jersey in the U.S. east coast. *Atmospheric Pollution Research* **2**(1), 34–44 (2011). doi:10.5094/apr.2011.005
40. Xia, L. and Gao, Y. Chemical composition and size distributions of coastal aerosols observed on the US East Coast. *Marine Chemistry* **119**(1-4), 77–90 (2010). doi:10.1016/j.marchem.2010.01.002

HONORS

Global Peace and Health Award from the International Physicians for Prevention of Nuclear War and the Boston Chapter of Physicians for Social Responsibility, October 1, 2022

SERVICE

1. **Chair** for Gordon Research Conference on Climate Engineering, 2026
2. **Vice Chair** for Gordon Research Conference on Climate Engineering, 2024
3. **Planning committee** for a workshop on Climate Intervention in an Earth System Science Framework, hosted by the National Academies of Sciences, Engineering, and Medicine, 2023
4. **NOAA review panel** for the Earth's Radiation Budget Program "Atmospheric aerosols and their potential roles in solar climate intervention methods," March 30 - 31, 2022
5. **Steering committee** of the Geoengineering Modeling Research Consortium (<http://www.cgd.ucar.edu/projects/gmrc/>), 2019 - 2022
6. **Scientific advisory team member** of the DEveloping country Governance REsearch and Evaluation for SRM (DEGREES), 2017 - present
7. **Reviewer** for journals, e.g., *Journal of Geophysical Research*, *Atmospheric Chemistry and Physics*, and *Earth's Future*
8. **Session convener** for multiple sessions at the American Geophysical Union Fall Meeting in 2018, 2019, 2021, 2024

MENTORING EXPERIENCE

M.S. Student Supervised

Brendan Clark	2022
Mahjabeen Rahman	2023
Nina Grant	2023

Ph.D. Students Supervised

Brendan Clark	current student
Nina Grant	current student
Shu Xu	current student

Postdocs Supervised

Sam Rabin	September 2021 - February 2023
Jyoti Singh	September 2021 - present

Serving on Ph.D. Committees

Joshua Coupe	2020
Brendan Clark	present

CONFERENCE PRESENTATIONS (first author)

1. Nuclear winter (Invited seminar at Illinois State University, Normal, Illinois, September 24, 2024)
2. The impacts of Climate change and intervention on agriculture and food security (Invited lecture at Zhejiang University, Hangzhou, China, July 23, 2024)
3. Impacts of nuclear war on food security (Invited talk at Students for Nuclear Disarmament, online, August 10, 2024)
4. Climate impacts of stratospheric aerosol injection climate intervention (Invited talk at Institute of Atmospheric Physics, Chinese Academy of Sciences, Beijing, China, July 22, 2024)
5. Impacts of nuclear war on food security (Invited talk at Public Health in a Nuclear War hosted by Disarmament and Security Center at New Zealand, online, February 8, 2024)
6. Representation of Diffuse Radiation in Climate Models under Stratospheric Aerosol Intervention (Poster presentation at the American Geophysical Union Fall Meeting, San Francisco, California, December 11 - December 15, 2023)
7. Impacts of Nuclear War on Climate and Food Security (Invited talk at Princeton SGS School, Princeton, New Jersey, October 13 - October 17, 2023)
8. Agricultural Impacts of Stratospheric Aerosol (Invited seminar talk at University At Albany, Albany, New York, September 18, 2023)
9. Impacts of Stratospheric Aerosol Intervention on Surface Air Pollutants (Oral presentation at CESM Land Model Working Group Meeting, June 13, 2023)
10. Impacts of Solar Radiation Management (Invited talk at the Quadrature Climate Foundation New Climate Reality and SRM Workshop, online, June 6, 2023)
11. Mass Starvation? Impacts of Nuclear War on the Climate and Food Security (Invited talk at German Physics Society Spring Meeting on Nuclear Winter, presented by Kim Scherrer, Dresden, Germany, March 22 - March 24, 2023)
12. Impacts of Stratospheric Aerosol Intervention on Surface Air Pollutants (Oral presentation at the American Geophysical Union Fall Meeting, Chicago, Illinois, December 12 - 16, 2022)
13. Agriculture as a Climate Intervention Target (Invited talk at the Second Community Climate Intervention Strategies Workshop, NCAR, Boulder, Colorado, October 31 - November 2, 2022)
14. Impacts of sulfate injection climate intervention on particulate matter with diameter less than 2.5 μm (Poster presentation at the Gordon Research Conference Climate Engineering, Newry, Maine, June 26 - July

- 7, 2022)
15. Agricultural impacts of stratospheric aerosol injection climate intervention (Invited talk at Stratospheric Aerosol Intervention - Ecology Meeting, Newry, Maine, June 22 - 24, 2022)
 16. Agricultural impacts of stratospheric aerosol (Invited talk at Rutgers University New Brunswick, Center for Agricultural Food Ecosystems, February 25, 2022)
 17. Natural vegetation responses in Geoengineering Model Intercomparison Project (GeoMIP) G6 experiments (Poster presentation at American Geophysical Union Fall Meeting, New Orleans, Louisiana, December 12 - 16, 2021)
 18. Natural vegetation responses in Geoengineering Model Intercomparison Project (GeoMIP) G6 Experiments (Oral presentation at Climate Engineering in Context, Online, October 4 - 8, 2021)
 19. Agricultural impacts of solar radiation management (Invited online talk at Indiana University Bloomington, Department of Earth and Atmospheric Sciences, March 15, 2021)
 20. Agricultural impacts of solar radiation management (Invited online talk at Rutgers University New Brunswick, Department of Environmental Sciences, February 26, 2021)
 21. Assessing terrestrial biogeochemical feedbacks in a geoengineered climate (Oral presentation at American Association for the Advancement of Science Annual Meeting, Online, February 8 - 11, 2021)
 22. Diffuse radiation impact on vegetation under Geoengineering Model Intercomparison Project G6 experiments (Poster presentation at American Geophysical Union Fall Meeting, Online Everywhere, December 1 - 17, 2020)
 23. Sulfate geoengineering impacts on agriculture (Oral presentation at American Meteorological Society; Boston, Massachusetts, January 12 - 16, 2020)
 24. Impacts of nuclear war on terrestrial carbon processes (Poster presentation at American Geophysical Union Fall Meeting, San Francisco, California, December 9 - 13, 2019)
 25. SRM impacts on vegetation and agriculture (Invited talk at Ecosystem Response to SRM workshop, University of Minnesota Twin Cities, MN, U.S., November 1, 2019)
 26. How to study SRM impacts on agriculture? (Invited talk at the second Geoengineering Research Consortium meeting, Harvard University, Boston, September 30, 2019)
 27. Impacts of Sulfate Injection Geoengineering on Particulate Matter with Diameter less than 2.5 μm (with Alan Robock; presented by Alan Robock; the ninth GeoMIP workshop, Beijing Normal University, Beijing, China, August 14 - 17, 2019)
 28. Solar radiation management impacts on agriculture (Invited talk at the first Geoengineering Research Consortium meeting, NCAR, Boulder, Colorado, May 20, 2019)
 29. Impact on Agriculture from Surface Ozone and Ultraviolet Radiation Changes due to Stratospheric Sulfate Injection (Poster presentation at American Geophysical Union Fall Meeting, Washington, DC, December 10 - 14, 2018)
 30. Impacts of Stratospheric Sulfate Geoengineering on PM_{2.5} (Poster presentation at the Stratosphere-troposphere Processes and Their Role in Climate 2018 General Assembly, Kyoto, Japan, October 1 - 5, 2018)
 31. Impacts of Stratospheric Black Carbon on Agriculture (Oral presentation at American Geophysical Union Fall Meeting, New Orleans, Louisiana, December 11 - 15, 2017)
 32. Stratospheric Sulfate Geoengineering Impacts on Agriculture and Air Pollution (Invited presentation at Gordon Research Conference - Climate Engineering; Newry, Maine, July 23 - 28, 2017)
 33. Impacts of Solar Radiation Management on Surface Ozone (Oral presentation at Community Earth System Model Winter Group Meetings, Boulder, Colorado, February 27 - March 2, 2017)
 34. Impacts of Solar Radiation Management on Surface Ozone (Oral presentation at American Geophysical Union Fall Meeting, San Francisco, California, December 12 - 16, 2016)
 35. A Comparison of Sulfate Injection Geoengineering and Solar Reduction Geoengineering (Oral presentation at the Sixth GeoMIP Meeting, University of Oslo, Oslo, Norway, June 21 - 22, 2016)
 36. Sulfate Injection Geoengineering Impacts on Agriculture (Invited talk at International Workshop on Climate Engineering Toward (non-) Research Collaboration in the Asia- Pacific region, University of Tokyo,

- Tokyo, Japan, March 22 - 23, 2016)
37. Stratospheric Sulfate Geoengineering Impacts on Global Agriculture (Poster presentation at American Geophysical Union Fall Meeting, San Francisco, California, December 14-18, 2015)
 38. Solar Radiation Management and Its Agriculture Impact (Oral presentation at Chinese Geoengineering Workshop, Beijing Normal University, Beijing, China, August 26 - 28, 2015)
 39. Solar Radiation Change from G4SSA and Its Agricultural Impact (Oral presentation at the Fifth GeoMIP Workshop, National Center for Atmospheric Research, Boulder, CO, July 22 - 23, 2015)
 40. Two Possible Future Climate Scenarios for AgMIP-GGCM - Sulfate Injection Climate Intervention and Regional Nuclear War (Poster presentation at Our Common Future under Climate Change meeting, Paris, France, July 7 - 10, 2015)
 41. Global Agricultural Impact from the G4 Specified Stratospheric Aerosol (G4SSA) GeoMIP Simulation Using the CESM-CAM4 Climate Model (Oral presentation at 26th General Assembly of the International Union of Geodesy and Geophysics, Prague, Czech Republic, June 26 - July 2, 2015)
 42. Climate Sensitivity of DSSAT under Different Agriculture Practice Scenarios in China (Poster presentation at American Geophysical Union Fall Meeting, San Francisco, California, December 15 - 19, 2014)
 43. Impacts on Chinese Agriculture of Geoengineering and Smoke from Fires Ignited by Nuclear War (Poster presentation at American Geophysical Union Fall Meeting, San Francisco, California, December 9 - 13, 2013)
 44. Impacts of Balancing CO₂ Increases with Solar Insolation Reduction (from the GeoMIP G2 scenario) on Chinese Agricultural Production (Oral presentation at the Geoengineering Modeling Intercomparison Project (GeoMIP) workshop, Institute for Advanced Sustainability Studies, Potsdam, Germany, April 15 - 16, 2013)
 45. Agriculture Impacts of Regional Conflict (Oral presentation at European Geosciences Union General Assembly, Vienna, Austria, April 7 - 12, 2013)
 46. Impacts of Stratospheric Sulfate Geoengineering on Chinese Food Supply (Poster presentation on American Geophysical Union Fall Meeting, San Francisco, California, December 3 - 7, 2012)
 47. Impacts of Geoengineering and Nuclear War on Chinese Agriculture (Poster presentation on American Geophysical Union Fall Meeting, San Francisco, California, December 5 - 9, 2011)
 48. Agricultural Response on Stratospheric Geoengineering (Oral presentation on the second Keck Institute for Space Studies Geoengineering Workshop, California Institute of Technology, Pasadena, California, November 15 - 18, 2011)
 49. Agricultural Feedback on Stratospheric Sulfate Geoengineering (Poster presentation on World Climate Research Programme Open Science Conference, Denver, Colorado, October 24 - 28, 2011)
 50. Impacts of Nuclear War on Agriculture in China (Oral presentation on the Severe Atmospheric Aerosol Event Conference, Max Planck Institute, Hamburg, Germany, August 11 - 12, 2011)
 51. Geoengineering Impacts on Agriculture - Forced by ModelE and CAM4 (Poster presentation on 16th Annual CESM workshop, Boulder, Colorado, June 20 - 23, 2011)
 52. Impacts of Stratospheric Sulfate Geoengineering on Food Supply - Update (Oral presentation on Keck Institute for Space Studies Geoengineering Workshop, California Institute of Technology, Pasadena, California, May 23 - 26, 2011)
 53. Impacts of Stratospheric Sulfate Geoengineering on Food Supply (Oral presentation on GeoMIP workshop, Rutgers University, New Brunswick, NJ, February 10 - 12, 2011)
 54. How Does Stratospheric Sulfate Geoengineering Affect Food Supply in China (Invited talk at Beijing Normal University, Beijing, China, December 28, 2010)
 55. Effects of Stratospheric Sulfate Geoengineering on Food Supply in China (Oral presentation on American Geophysical Union Fall Meeting, San Francisco, California, December 13 - 17, 2010)
 56. Chemical Composition and Size Distribution of Coastal Aerosol Observed on the US East Coast (Oral presentation at American Geophysical Union Fall Meeting, San Francisco, California, December 15 - 19, 2008)

CONFERENCE PRESENTATIONS (co-author)

1. Impacts on Indian Agriculture Due to Solar Climate Intervention Using Crop Suitability and Agroclimatic Indices (presented by Nina Grant, Gordon Research Conference - Climate Engineering, Lucca, Italy, February 18 - 23, 2024)
2. Stratospheric Aerosol Climate Intervention Could Negatively Impact Crop Nutritional Quality (presented by Brendan Clark, American Geophysical Union Fall Meeting, San Francisco, California, December 11 - 15, 2023)
3. Impacts on Indian Agriculture Due to Solar Climate Intervention Using Crop Suitability and Agroclimatic Indices (presented by Nina Grant, American Geophysical Union Fall Meeting, San Francisco, California, December 11 - 15, 2023)
4. Potential future agricultural production under stratospheric aerosol intervention with adaptive crop calendars (presented by Sam S. Rabin, American Geophysical Union Fall Meeting, Chicago, Illinois, December 12 - 16, 2022)
5. Land use change trajectories under stratospheric aerosol intervention (presented by Sam S. Rabin, American Geophysical Union Fall Meeting, Chicago, Illinois, December 12 - 16, 2022)
6. Net Ecosystem Production Responses to Individual Climate Forcings Under Stratospheric Aerosol Climate Intervention (presented by Brendan Clark, American Geophysical Union Fall Meeting, Chicago, Illinois, December 12 - 16, 2022)
7. Impacts of Ultraviolet Flux from Stratospheric Aerosol Intervention on Agricultural Production (presented by Mahjabeen Rahman, American Geophysical Union Fall Meeting, Chicago, Illinois, December 12 - 16, 2022)
8. Indian Agricultural Impacts under GeoMIP G6 Experiments (presented by Nina Grant, American Geophysical Union Fall Meeting, Chicago, Illinois, December 12 - 16, 2022)
9. Improving the relationship of photosynthesis and stomatal conductance to chronic ozone exposure in the ozone damage function of Community Land Model 5 (presented by Jyoti Singh, American Geophysical Union Fall Meeting, Chicago, Illinois, December 12 - 16, 2022)
10. Global Famine after Nuclear War (presented by Alan Robock, American Geophysical Union Fall Meeting, Chicago, Illinois, December 12 - 16, 2022)
11. (Agro-) ecosystem impacts of solar radiation modification: An under-studied area of concern (Presented by Sam S. Rabin; Poster presentation at the Land Surface Modeling Summit, the University of Oxford, UK, September 12-14, 2022)
12. Improving ozone damage and winter wheat simulations in the Community Land Model 5 (presented by Jyoti Singh, the Gordon Research Conference Climate Engineering; Newry, Maine, June 26 - July 7, 2022)
13. Indian monsoon precipitation changes in CESM2-WACCM GeoMIP6 experiments (presented by Nina Grant, the Gordon Research Conference Climate Engineering; Newry, Maine, June 26 - July 7, 2022)
14. Impacts of Ultraviolet (UV) flux from stratospheric geoengineering on agricultural production (presented by Mahjabeen Rahman, the Gordon Research Conference Climate Engineering; Newry, Maine, June 26 - July 7, 2022)
15. Impacts to crop production from stratospheric aerosol climate intervention: a multi-scenario overview (presented by Brendan Clark, the Gordon Research Conference Climate Engineering; Newry, Maine, June 26 - July 7, 2022)
16. Potential ecological impacts of climate intervention with solar radiation modification (presented by Phoebe L. Zarnetske, American Geophysical Union Fall Meeting; New Orleans, Louisiana, December 12 - 16, 2021)
17. Impacts of climate-crop model coupling on predictions of agricultural production and climate with global warming and stratospheric geoengineering (presented by Brendan Clark, American Geophysical Union Fall Meeting; New Orleans, Louisiana, December 12 - 16, 2021)
18. Global famine after nuclear war (presented by Alan Robock, American Geophysical Union Fall Meeting, New Orleans, Louisiana, December 12 - 16, 2021)

19. Global modeling of impact-relevant stratospheric aerosol climate intervention scenarios (presented by Simone Tilmes, Ecological Society of America Annual Meeting, Online, August 2 - 6, 2021)
20. Beyond impact: Ecology helping to guide scenarios of climate intervention (presented by Jessica Hellmann, Ecological Society of America Annual Meeting, Online, August 2 - 6, 2021)
21. Economic incentives modify agricultural impacts of a regional nuclear war concerning food insecurity and famine (presented by Gal Hochman, Western Economic Association 96th Annual Conference, Online, June 27 - July 1, 2021)
22. Global agricultural impacts of stratospheric aerosol intervention - overshoot scenario (presented by Alan Robock, American Geophysical Union Fall Meeting, Online Everywhere, December 1 - 17, 2020)
23. Stratospheric Aerosol Climate Intervention Designed to Minimize Negative Impacts (invited presentation by Alan Robock, American Geophysical Union Fall Meeting, Online, December 7 - 14, 2020)
24. Marine wild-capture fisheries after nuclear war (presented by Kim Scherrer, American Geophysical Union Fall Meeting, Online, December 7 - 14, 2020)
25. Potential ecological impacts of climate intervention by solar radiation management (presented by Jessica Gurevitch, Ecological Society of America Annual Meeting, Online, August 3-6, 2020)
26. Modeling the response of crops to rapid cooling from stratospheric aerosols (presented by Alan Robock, iCROP - Crop modelling for Agriculture and Food Security under Global Change, Montpellier, Le Corum, France, February 3 - 5, 2020)
27. Rapid Expansion of Nuclear Arsenals by Pakistan and India Portends Regional and Global Catastrophes (presented by Brian Toon, American Meteorological Society 100th Annual Meeting, January 12 - 17, 2020)
28. A regional nuclear conflict has global implications for food security (presented by Jonas Jägermeyr, American Geophysical Union Fall Meeting, San Francisco, California, December 9 - 13, 2019)
29. Surface Deposition in a Sulfate Geoengineering Scenario: Risks and Vulnerabilities for Soils and Human Health (presented by Daniele Visoni, American Geophysical Union Fall Meeting, San Francisco, California, December 9 - 13, 2019)
30. Rapid Expansion of Nuclear Arsenals by Pakistan and India Portends Regional and Global Catastrophes (presented by Alan Robock, American Geophysical Union Fall Meeting, San Francisco, California, December 9 - 13, 2019)
31. The importance of trade to food security: The case of the extreme climatic effect caused by a regional nuclear conflict (presented by Hainan Zhang, American Geophysical Union Fall Meeting, San Francisco, California, December 9 - 13, 2019)
32. Agriculture responses to nuclear winter (presented by Alan Robock, American Geophysical Union Fall Meeting; San Francisco, California, December 9 - 13, 2019)
33. Terrestrial biogeochemical feedbacks to a geoengineering climate (presented by Cheng-En Yang, American Geophysical Union Fall Meeting, San Francisco, California, December 9 - 13, 2019)
34. Impacts of Sulfate Injection Geoengineering on PM2.5 (presented by Alan Robock, Ninth GeoMIP Workshop, Beijing Normal University, Beijing, China, August 14 - 17, 2019)
35. Rapid Expansion of Nuclear Arsenals by Pakistan and India Threatens Regional and Global Catastrophes: Sources of Uncertainty for Climate Effects (Invited presentation by Owen Brian Toon, Science to Understand Megafire Interactions with the Atmosphere Workshop, Los Alamos National Laboratory, Los Alamos, New Mexico, July 15 - 16, 2019)
36. Climatic and Agricultural Impacts of Nuclear War (Invited presentation by Gal Hochman, International Agricultural Trade Research Consortium Symposium, "Trading for good - Agricultural trade in the context of climate change adaptation and mitigation: synergies, obstacles and possible solutions," Seville, Spain, June 23 - 25, 2019)
37. Climatic and Agricultural Impacts of Nuclear War (presented by Gal Hochman, Global Trade Analysis Project 22nd Annual Conference on Global Economic Analysis, Warsaw, Poland, June 19 - 21, 2019)
38. Climatic and Agricultural Impacts of Nuclear War (presented by Gal Hochman, Northeast Agricultural and Resource Economics Association 2019 Annual Meeting, Portsmouth, New Hampshire, June 9 - 12, 2019)
39. A Regional Nuclear Conflict Has Global Implications for Food Security (presented by Jonas Jägermeyr,

- Budapest, Hungary, March 24 - 26, 2019)
40. Assessing Impacts of Stratospheric Aerosol Geoengineering on Terrestrial Biogeochemical Feedbacks (presented by Cheng-En Yang, Washington, DC, December 10 - 14, 2018)
 41. Economic Analysis of Climatic and Agricultural Impacts of Nuclear War (presented by Hainan Zhang, American Geophysical Union Fall Meeting, Washington, DC, December 10 - 14, 2018)
 42. A Regional Nuclear Conflict Has Global Implications for Food Security – Preliminary Results (presented by Jonas Jägermeyr, American Geophysical Union Fall Meeting, Washington, DC, December 10 - 14, 2018)
 43. Rapid Expansion of Nuclear Arsenals by Pakistan and India Threatens Regional and Global Catastrophes (presented by Owen Toon, American Geophysical Union Fall Meeting, Washington, DC, December 10 - 14, 2018)
 44. Impacts of Stratospheric Sulfate Geoengineering on PM2.5 (presented by Alan Robock, SPARC (Stratosphere-troposphere Processes And their Role in Climate) 2018 General Assembly, Kyoto, Japan, October 1 - 5, 2018)
 45. Economic Analysis of Climatic and Agricultural Impacts of Nuclear War (presented by Hainan Zhang, 21st Annual Conference on Global Economic Analysis, Cartagena, Columbia, June 13 - 15, 2018)
 46. Economic Analysis of Agricultural Impacts of Nuclear War between India and Pakistan: The Case of 5 Tg of Soot (presented by Gal Hochman, 2018 Northeast Agricultural and Resource Economics Association Annual Meeting, Philadelphia, Pennsylvania, June 9 - 12, 2018)
 47. Evaluations of Terrestrial Biogeochemical Feedbacks of Stratospheric Geoengineering Strategies (presented by Cheng-En Yang, 15th Annual Meeting of Asia Oceania Geosciences Society, Honolulu, Hawaii, June 3 - 8, 2018)
 48. Crop Yield Response to Nuclear Winter Climate Perturbation - Prototype Results (presented by Jonas Jägermeyr, AgMIP 7 Global Workshop, San Jose, Costa Rica, April 24 - 26, 2018)
 49. G4Foam and G4SSA experiments - Are others interested? (presented by Alan Robock, Eighth GeoMIP Workshop, ETH (Eidgenössische Technische Hochschule, Swiss Federal Institute of Technology), Zurich, Switzerland, April 16 - 17, 2018)
 50. Impacts of Stratospheric Sulfate Geoengineering on PM2.5 (presented by Alan Robock, American Geophysical Union Fall Meeting, New Orleans, Louisiana, December 11 - 15, 2017)
 51. SRM Impacts on Ground Level Ozone (presented by Alan Robock, Climate Engineering Conference, Berlin, Germany, October 9 - 12, 2017)
 52. Dangerous Consequences of Geoengineering Implementation and Termination for Species and Ecological Systems (presented by Jessica Gurevitch, Ecological Society of America Annual Meeting, Portland, Oregon, August 6 - 11, 2017)
 53. Agricultural Impacts of Volcanic Eruptions, Geoengineering, and Nuclear War (invited presentation by Alan Robock, AgMIP-IIASA International Workshop, Global Gridded Crop Model Initiative side meeting, Laxenburg, Austria, June 15 - 16, 2017)
 54. Agricultural Impacts of Volcanic Eruptions, Geoengineering, and Nuclear War (invited presentation by Alan Robock, AgMIP-IIASA International Workshop, Global Gridded Crop Model Initiative side meeting, Laxenburg, Austria, June 15 - 16, 2016)
 55. Dangerous Climate Velocities from Geoengineering Termination: Potential Biodiversity Impacts (presented by Christopher Trisos, American Geophysical Union Fall Meeting, San Francisco, California, December 12 - 16, 2016)
 56. Relevance of Volcanic Eruptions for Decadal to Centennial Fluctuations of the Last Millenniums Arctic Sea Ice Extent (presented by Joanna Slawinska, American Geophysical Union Fall Meeting, San Francisco, California, December 12 - 16, 2016)
 57. New AgMIP Scenarios: Impacts of Volcanic Eruptions, Geoengineering, or Nuclear War on Agriculture (presented by Alan Robock, American Geophysical Union Fall Meeting, San Francisco, California, December 12 - 16, 2016)
 58. The G4Foam Experiment: Global Climate Impacts of Regional Ocean Albedo Modification (presented by Corey J. Gabriel, American Geophysical Union Fall Meeting, San Francisco, California, December 12 - 16,

- 2016)
59. Dangerous Climate Velocities from Geoengineering Termination: Potential Biodiversity Impacts (presented by Christopher Trisos, American Geophysical Union Fall Meeting, San Francisco, California, December 12 - 16, 2016)
 60. New AgMIP Scenarios: Impacts of Volcanic Eruptions, Geoengineering, or Nuclear War on Agriculture (presented by Alan Robock, American Geophysical Union Fall Meeting, San Francisco, California, December 12 - 16, 2016)
 61. The G4Foam Experiment: Global Climate Impacts of Regional Ocean Albedo Modification (presented by Corey Gabriel, Sixth GeoMIP Workshop, University of Oslo, Oslo, Norway, June 21 - 22, 2016)
 62. Impacts from the G4 Specified Stratospheric Aerosol (G4SSA) GeoIMP simulation on climate, chemistry, and agriculture, using the CESM-CAM4chem model (presented by Simone Tilmes, IGAC/SPARC Chemistry-Climate Model Initiative (CCMI) Workshop, Rome, Italy, October 7 - 9, 2015)
 63. Impacts on Global Agriculture of Stratospheric Sulfate Injection (presented by Alan Robock, American Geophysical Union Fall Meeting, San Francisco, California, December 15 - 19, 2014)
 64. Global Famine after a Regional Nuclear War (Invited presentation by Alan Robock, American Geophysical Union Fall Meeting, San Francisco, California, December 15 - 19, 2014)
 65. Impacts of Geoengineering on Agriculture and Ecosystems (presented by Alan Robock, the 4th GeoMIP Workshop, Paris, France, April 24 - 25, 2014)
 66. Climatic Consequences and Agricultural Impact of Regional Nuclear Conflict (presented by Alan Robock, the European Geosciences Union General Assembly, Vienna, Austria, April 7 - 12, 2013)