LILI XIA

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EDUCATION:

Peking University, China	Geography, B.A. 2004
Peking University, China	Quaternary Geology, M.S. 2007
Rutgers University, NJ, U.S.	Atmospheric Science, Ph.D. 2014

APPOINTMENTS:

2017-current	Research Associate, Department of Environmental Sciences, Rutgers
2014-2017	Postdoctoral Associate, Center for Environmental Prediction, Rutgers
2010-2014	Research assistant, Atmospheric Science Graduate Program, Rutgers
2007-2010	Teaching assistant, Planet Earth and Planet Earth Lab, Rutgers-Newark

PUBLICATIONS:

1. Xia, Lili, Alan Robock, Simone Tilmes, Michael Mills, Jadwiga Richter, Ben Kravitz, Douglas G. MacMartin, and Daniele Visioni (2019), Impacts of sulfate injection geoengineering on particulate matter with diameter less than 2.5 μm. Submitted to J.Geophys. Res. Atmos.
2. Jägermeyr, Jonas, Alan Robock, Joshua Elliott, Christoph Müller, Lili Xia, Nikolay Khabarov, Christian Folberth, Erwin Schmid, Wenfeng Liu, Florian Zabel, Sam S. Rabin, Michael J. Puma, Alison C. Heslin, James Franke, Ian Foster, Senthold Asseng, Charles G.Bardeen, Owen B. Toon, and Cynthia Rosenzweig(2020), A regional nuclear conflict would compromise global food security, PNAS, in press.
3. 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. (2019), How an India-Pakistan nuclear war could start – and have global consequences, Bulletin of the Atomic Scientists, 75:6, 273-279, doi:10.1080/00963402.2019.1680049.
4. Toon, O. B., Bardeen, C. G., Robock, A., Xia, L., Kristensen, H., McKinzie, M., Peterson, R. J., Harrison, C. S., Lovenduski, N., and Turco, R. P. (2019), Rapidly expanding nuclear arsenals in Pakistan and India portend regional and global catastrophe, *Science Advances*, 5(10), doi:10.1126/sciadv.aay5478.
5. Toon, O. B., Robock, A., Mills, M., Xia, L., and Bardeen, C. (2018), Climatic consequences and agricultural impacts of nuclear conflicts. Chapter 24 in *Global Change and Future Earth: The Geoscience Perspective*, Tom Beer, Jianping Li, and Keith Alverson, Eds., (Cambridge University Press, Cambridge, UK), 328-340.
6. Trisos, C. H., Gabriel, C., Robock, A., and Xia, L. (2018), Ecological, agricultural and health impacts of solar geoengineering. Chapter 24 in *Resilience: The Science of Adaptation to Climate Change*, Keith Alverson and Zinta Zommers, editors, (Elsevier, Amsterdam), 292-304, ISBN: 978-0-12-811891-7.
7. Trisos, C. H., Amatulli, G., Gurevitch, J., Robock, A., Xia, L., and Zambri, B. (2018),

Potentially dangerous consequences for biodiversity of solar geoengineering implementation and termination, *Nature Ecology & Evolution*, *2*, 475-482, doi:10.1038/s41559-017-0431-0.

8. Xia, L., Nowack, P. J., Tilmes, S., and Robock, A. (2017), Impacts of stratospheric sulfate geoengineering on tropospheric ozone, *Atmos. Chem. Phys.*, *17*, 11,913-11,928, doi:10.5194/acp-17-11913-2017.
9. 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., Xia, L. (2017), The Asia-Pacific's role in the emerging solar geoengineering debate, *Climatic Change*, *143*, 1-12, doi:10.1007/s10584-017-1994-0.
10. Toon, O. B., Robock, A., Mills, M., and Xia, L. (2017), Asia treads the nuclear path, unaware that self-assured destruction would result from nuclear war. *J. Asian Studies*, *76*, 437-456, doi:10.1017/S0021911817000080.
11. Gabriel, C., Robock, A., Xia, L., Zambri, B., and Kravitz, B. (2017), The G4Foam experiment: Global climate impacts of regional ocean albedo. *Atmos. Chem. Phys.*, *17*, 595-613, doi:10.5194/acp-17-595-2017.
12. Xia, L., Robock, A., Tilmes, S., and Neely III, R. R. (2016), Stratospheric sulfate geoengineering could enhance the terrestrial photosynthesis rate. *Atmos. Chem. Phys.*, *16*, 1479-1489, doi:10.5194/acp-16-1479- 2016.
13. Xia, L., Robock, A., Mills, M., Stenke, A., and Helfand, I. (2015), Decadal reduction of Chinese agriculture after a regional nuclear war. *Earth's Future*, *3*, 37-48, doi:10.1002/2014EF000283.
14. Xia, L., Robock, A., Balwinder, S., Cole, J., Ji, D., Moore, J., Jones, A., Kravitz, B., Simone, T., Muri, J., Niemeier, U., and Watanabe S. (2014), Solar radiation management impacts on agriculture in China: A case study in the Geoengineering Model Intercomparison Project (GeoMIP). *J. Geophys. Res. Atmos.*, *119*, 8695-8711, doi:10.1002/2013JD020630.
15. Xia, L., and Robock, A. (2012), Impacts of a nuclear war in South Asia on rice production in Mainland China. *Climatic Change*, *116*, 357-372, doi:10.1007/s10584-012-0475-8.
16. Xia, L., and Gao, Y. (2011), Characterization of trace elements in PM2.5 aerosols in vicinity of highways in northeast New Jersey in the US East Coast. *Atmospheric Pollution Research*, *2*, 34-44, doi:10.5094/APR.2011.005.
17. Xia, L., and Gao Y. (2010), Chemical composition and size distribution of coastal aerosol observed on the US East Coast. *Marine Chemistry*, *110*, 77-90, doi: 10.1016/j.marchem.2010.01.002.

CONFERENCE PRESENTATIONS (first author):

1. 'Sulfate geoengineering impacts on agriculture' (Oral presentation at American Meteorology Society; Boston, Massachusetts, January 12-16, 2020)
2. 'Impacts of nuclear war on terrestrial carbon processes' (Poster presentation at American Geophysical Union Fall Meeting; San Francisco, California, December 9-13, 2019)
3. '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)

4. ‘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)
5. ‘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)
6. ‘Impacts of Stratospheric Sulfate Geoengineering on PM2.5’ (Poster presentation at the Stratosphere-troposphere Processes And Their Role in Climate 2018 General Assembly; Kyoto, Japan, October 1-5, 2018)
7. ‘Impacts of Stratospheric Black Carbon on Agriculture’ (Oral presentation at American Geophysical Union Fall Meeting; New Orleans, Louisiana, December 11-15, 2017)
8. ‘Stratospheric Sulfate Geoengineering Impacts on Agriculture and Air Pollution’ (Invited presentation at Gordon Research Conference – Climate Engineering; Newry, Maine, July 23-28, 2017)
9. ‘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)
10. ‘Impacts of Solar Radiation Management on Surface Ozone’ (Oral presentation at American Geophysical Union Fall Meeting; San Francisco, California, December 12-16, 2016)
11. ‘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)
12. ‘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)
13. ‘Stratospheric Sulfate Geoengineering Impacts on Global Agriculture’ (Poster presentation at American Geophysical Union Fall Meeting; San Francisco, California, December 14-18, 2015)
14. ‘Solar Radiation Management and Its Agriculture Impact’ (Oral presentation at Chinese Geoengineering Workshop; Beijing Normal University, Beijing, China, August 26-28, 2015)
15. ‘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)
16. ‘Two Possible Future Climate Scenarios for AgMIP-GGCMI – Sulfate Injection Climate Intervention and Regional Nuclear War’ (Poster presentation at Our Common Future under Climate Change meeting; Paris, France, July 7-10, 2015)
17. ‘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)

18. '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)
19. '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)
20. 'Impacts of Balancing CO_2 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)
21. 'Agriculture Impacts of Regional Conflict' (Oral presentation at European Geosciences Union General Assembly; Vienna, Austria, April 7-12, 2013)
22. 'Impacts of Stratospheric Sulfate Geoengineering on Chinese Food Supply' (Poster presentation on American Geophysical Union Fall Meeting, San Francisco, California, December 3-7, 2012)
23. 'Impacts of Geoengineering and Nuclear War on Chinese Agriculture' (Poster presentation on American Geophysical Union Fall Meeting; San Francisco, California, December 5-9, 2011)
24. 'Agricultural Response on Stratospheric Geoengienering' (Oral presentation on the second Keck Institute for Space Studies Geoengineering Workshop; California Institute of Technology, Pasadena, California, November 15-18, 2011)
25. 'Agricultural Feedback on Stratospheric Sulfate Geoengineering' (Poster presentation on World Climate Research Programme Open Science Conference; Denver, Colorado, October 24-28, 2011)
26. '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)
27. 'Geoengineering Impacts on Agriculture – Forced by ModelE and CAM4' (Poster presentation on 16th Annual CESM workshop; Boulder, Colorado, June 20-23, 2011)
28. '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)
29. 'Impacts of Stratospheric Sulfate Geoengineering on Food Supply' (Oral presentation on GeoMIP workshop; Rutgers University, New Brunswick, NJ, February 10-12, 2011)
30. 'How Does Stratospheric Sulfate Geoengineering Affect Food Supply in China' (Invited talk at Beijing Normal University; Beijing, China, December 28, 2010)
31. 'Effects of Stratospheric Sulfate Seoengineering on Food Supply in China' (Oral presentation on American Geophysical Union Fall Meeting; San Francisco, California, December 13-17, 2010)

32. ‘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. ‘Modeling the response of crops to rapid cooling from stratospheric aerosols’ (Oral presentation at iCROPM – Crop modelling for Agriculture and Food Security under Global Change; Montpellier, Le Corum, France, February 3-5, 2020)
2. ‘A regional nuclear conflict has global implications for food security’ (Poster presentation at A merican Geophysical Union Fall Meeting; San Francisco, California, December 9-13, 2019)
3. ‘Surface Deposition in a Sulfate Geoengineering Scenario: Risks and Vulnerabilities for Soils and Human Health’ (Poster presentation at A merican Geophysical Union Fall Meeting; San Francisco, California, December 9-13, 2019)
4. ‘Rapid Expansion of Nuclear Arsenals by Pakistan and India Portends Regional and Global Catastrophes’ (Poster presentation at A merican Geophysical Union Fall Meeting; San Francisco, California, December 9-13, 2019)
5. ‘The importance of trade to food security: The case of the extreme climatic effect caused by a regional nuclear conflict’ (Poster presentation at A merican Geophysical Union Fall Meeting; San Francisco, California, December 9-13, 2019)
6. ‘Agriculture responses to nuclear winter’ (Poster presentation at A merican Geophysical Union Fall Meeting; San Francisco, California, December 9-13, 2019)
7. ’Terrestrial biogeochemical feedbacks to a geoengineering climate’ (Poster presentation at A merican Geophysical Union Fall Meeting; San Francisco, California, December 9-13, 2019)
8. ‘Climatic and Agricultural Impacts of Nuclear War’ (Invited presentation; with Gal Hochman, Hainan Zhang, Saketh Aleti, Lili Xia, and Dominique van der Mensbrugghe; presented 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)
9. ‘Climatic and Agricultural Impacts of Nuclear War’ (with Gal Hochman, Hainan Zhang, Saketh Aleti, Lili Xia, and Dominique van der Mensbrugghe; presented by Gal Hochman; Global Trade Analysis Project 22nd Annual Conference on Global Economic Analysis, Warsaw, Poland, June 19-21, 2019)

   ‘Climatic and Agricultural Impacts of Nuclear War’ (with Gal Hochman, Hainan Zhang, Saketh Aleti, Lili Xia, and Dominique van der Mensbrugghe; presented by Gal Hochman; Northeast Agricultural and Resource Economics Association 2019 Annual Meeting, Portsmouth, New Hampshire, June 9-12, 2019)
10. ‘A Regional Nuclear Conflict Has Global Implications for Food Security’ (Oral presentation at 3rd Agriculture and Climate Change Conference; presented by Jonas Jägermeyr; Budapest, Hungary, March 24-26, 2019)

11. 'Assessing Impacts of Stratospheric Aerosol Geoengineering on Terrestrial Biogeochemical Feedbacks' (Poster presentation at American Geophysical Union Fall Meeting; presented by Cheng-En Yang; Washington, DC, December 10-14, 2018)
12. 'Economic Analysis of Climatic and Agricultural Impacts of Nuclear War' (Oral presentation at American Geophysical Union Fall Meeting; presented by Hainan Zhang; Washington, DC, December 10-14, 2018)
13. 'A Regional Nuclear Conflict Has Global Implications for Food Security -- Preliminary Results' (Poster presentation at American Geophysical Union Fall Meeting; presented by Jonas Jägermeyr; Washington, DC, December 10-14, 2018)
14. 'Rapid Expansion of Nuclear Arsenals by Pakistan and India Threatens Regional and Global Catastrophes' (Oral presentation at American Geophysical Union Fall Meeting; presented by Owen Toon; Washington, DC, December 10-14, 2018)
15. 'Evaluations of Terrestrial Biogeochemical Feedbacks of Stratospheric Geoengineering Strategies' (Oral presentation at 15th Annual Meeting of Asia Oceania Geosciences Society; presented by Cheng-En Yang; Honolulu, Hawaii, June 3-8, 2018)
16. 'Crop Yield Response to Nuclear Winter Climate Perturbation – Prototype Results' (Oral presentation at AgMIP 7 Global Workshop; presented by Jonas Jägermeyr; San Jose, Costa Rica, April 24-26, 2018)
17. 'Impacts of Stratospheric Sulfate Geoengineering on PM2.5' (Poster presentation at American Geophysical Union Fall Meeting; presented by Alan Robock; New Orleans, Louisiana, December 11-15, 2017)
18. 'SRM Impacts on Ground Level Ozone' (Oral presentation at Climate Engineering Conference; presented by Alan Robock; Berlin, Germany, October 9-12, 2017)
19. 'Dangerous Consequences of Geoengineering Implementation and Termination for Species and Ecological Systems' (Oral presentation at Ecological Society of America Annual Meeting; presented by Jessica Gurevitch; Portland, Oregon, August 6-11, 2017)
20. 'Agricultural Impacts of Volcanic Eruptions, Geoengineering, and Nuclear War' (Invited presentation at AgMIP-IIASA International Workshop, Global Gridded Crop Model Initiative side meeting; presented by Alan Robock; Laxenburg, Austria, June 15-16, 2017)
21. 'Relevance of Volcanic Eruptions for Decadal to Centennial Fluctuations of the Last Millennium's Arctic Sea Ice Extent' (Poster presentation at American Geophysical Union Fall Meeting; presented by Joanna Slawinska; San Francisco, California, December 12-16, 2016)
22. 'The G4Foam Experiment: Global Climate Impacts of Regional Ocean Albedo Modification' (with Corey J. Gabriel and Lili Xia; presented by Corey J. Gabriel; American Geophysical Union Fall Meeting, San Francisco, California, December 12-16, 2016)
23. 'Dangerous Climate Velocities from Geoengineering Termination: Potential

Biodiversity Impacts' (Oral presentation at American Geophysical Union Fall Meeting; presented by Christopher Trisos; San Francisco, California, December 12-16, 2016)

24. 'New AgMIP Scenarios: Impacts of Volcanic Eruptions, Geoengineering, or Nuclear War on Agriculture' (Poster presentation on American Geophysical Union Fall Meeting; presented by Alan Robock; San Francisco, California, December 12-16, 2016)
25. 'The G4Foam Experiment: Global Climate Impacts of Regional Ocean Albedo Modification' (Oral presentation at Sixth GeoMIP Workshop; presented by Corey Gabriel; University of Oslo, Oslo, Norway, June 21-22, 2016)
26. 'Impacts on Global Agriculture of Stratospheric Sulfate Injection' (Poster presentation at American Geophysical Union Fall Meeting; presented by Alan Robock; San Francisco, California, December 15-19, 2014)
27. 'Global Famine after a Regional Nuclear War' (Invited presentation on American Geophysical Union Fall Meeting; presented by Alan Robock; San Francisco, California, December 15-19, 2014)
28. 'Impacts of Geoengineering on Agriculture and Ecosystems' (Oral presentation on the 4th GeoMIP Workshop; presented by Alan Robock; Paris, France, April 24-25, 2014)
29. 'Climatic Consequences and Agricultural Impact of Regional Nuclear Conflict' (Oral presentation on the European Geosciences Union General Assembly; presented by Alan Robock; Vienna, Austria, April 7-12, 2013)

SERVICES:

1. Serve as one of the steering committee members in Geoengineering Modeling Research Consortium (http://www.cgd.ucar.edu/projects/gmrc/) since 2019

2. Serve on the scientific advisory team for the Developing Country Impacts Modeling Analysis for SRM (DECIMALS) Fund since 2017

3. Reviewers for journals, e.g. Journal of Geophysical Research, Atmospheric Chemistry and Physics, and Earth's Future.

4. Conveners for sessions of American Geophysical Union Fall Meeting in 2018, 2019