Xiaomeng Jin

Assistant Professor

Department of Environmental Sciences

Rutgers, The State University of New Jersey

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EDUCATION

Columbia University, New York, NY, USA Sep. 2015 – June 2020

Doctor of Philosophy, Earth and Environmental Sciences

University of Wisconsin-Madison, Madison, WI, USA Sep. 2013 – May 2015

Master of Science, Environment and Resources; *Graduate Certificate*, Energy Analysis and Policy

Wuhan University, Wuhan, Hubei, China Sep. 2009 – June 2013

Bachelor of Engineering, Remote Sensing Science and Technology

HONORS AND AWARDS

Dec 2021	16th Atmospheric Chemistry Colloquium for Emerging Senior Scientists (ACCESS XVI)
Mar 2020	NOAA Climate and Global Change Postdoctoral Fellowship
Dec 2019	AGU Fall 2019 Outstanding Student Presentation Award
Oct 2019	MIT Civil and Environmental Engineering Rising Stars 2019
2018 – 2020	NASA Earth and Space Science Fellowship
Dec 2016	AGU Fall 2016 Outstanding Student Paper Award
2015 – 2016	Dean's Fellowship of Columbia University
Sep 2013	Outstanding Thesis Award of Hubei Province, China
2010&2012	Wuhan University Outstanding Student Scholarship

PROFESSIONAL EXPERIENCE

2023 – present	Assistant Professor, Rutgers University
2020 – 2022	NOAA Climate & Global Change Postdoctoral Fellow, UC Berkeley
2018 – 2020	NASA Earth and Space Science Graduate Fellow**,** Columbia University
2015 – 2018	Graduate Research Assistant**,** Columbia University
2017 – 2019	Project Collaborator, NASA HAQAST Tiger Team Projects
2013 – 2015	Research Assistant, University of Wisconsin-Madison
2012 – 2013	Undergraduate Researcher, Wuhan University

TEACHING EXPERIENCE

March 2021	Guest lecturer, Special Topics in Air Quality Engineering, UC Riverside
July 2019	Workshop Leader, Visualizing satellite data using GIOVANNI, NASA HAQAST6
April 2019	Guest lecturer, Introduction to Atmospheric Chemistry, Columbia University
Fall 2018	Teaching Assistant, Research Computing in Earth Sciences, Columbia University
Spring 2018	Teaching Assistant, Climate System, Columbia University
Spring 2017	Teaching Assistant, Introduction to Atmospheric Chemistry, Columbia University

PUBLICATIONS

First-authored publications:

1. **Jin, X.,** Zhu, Q., Cohen, R., (2021). Direct estimates of biomass burning NO_x emissions and lifetime using daily observations from TROPOMI. *Atmos. Chem. Phys*., 21, 15569–15587, doi: 10.5194/acp-21-15569-2021. (*Selected as an EGU highlight article*)
2. **Jin, X**., Fiore, A., Boersma, K.F., De Smedt, I., Valin, L., (2020). Inferring changes in summertime surface ozone-NO_x-VOC chemistry over U.S. urban areas from two decades of satellite and ground-based observations (2020), *Environmental Science & Technology*, 54, 6518–6529. doi: 10.1021/acs.est.9b07785. (*Featured by State of the Planet of Columbia University, MIT News*)
3. **Jin, X**., Fiore, A.M., Civerolo, K., Bi, J., Liu, Y., Donkelaar, A. van, Martin, R.V., Al-Hamdan, M., Zhang, Y., Insaf, T.Z., Kioumourtzoglou, M.-A., He, M.Z., Kinney, P.L., (2019). Comparison of multiple $PM_{2.5}$ exposure products for estimating health benefits of emission controls over New York State, USA, *Environmental Research Letters*, 14(8), 084023-14, doi: 10.1088/1748-9326/ab2dcb. (*Featured by Columbia Magazine, State of the Planet, US News, Science Daily, The Medical News etc*.)
4. **Jin, X**., Fiore, A.M., Curci, G., Lyapustin, A., Civerolo, K., Ku, M., van Donkelaar, A., Martin, R.V., (2019). Assessing uncertainties of a geophysical approach to estimate srface fine particulate matter distributions from satellite-observed aerosol optical depth, *Atmos. Chem. Phys.*, *19*(1), 295–313, doi:10.5194/acp-19-295-2019.
5. **Jin, X**., Fiore, A.M., Murray, L.T., Valin, L.C., Lamsal, L.N., Duncan, B., Boersma, K.F., De Smedt, I., Abad, G.G., Chance, K., Tonnesen, G.S., (2017). Evaluating a space-based indicator of surface ozone-NO_x-VOC sensitivity over mid-latitude source regions and application to decadal trends, *Journal of Geophysical Research: Atmospheres*, 122, 10439 – 10461, doi: 10.1002/2017JD026720. (*Featured by NASA Earth Science, NASA Earth Observatory, LDEO news etc.)*
6. **Jin, X**., Holloway, T., (2015). Spatial and temporal variability of ozone sensitivity over China observed from the Ozone Monitoring Instrument. *Journal of Geophysical Research: Atmosph*eres, 120(14), 7229–7246, doi: 10.1002/2015JD023250.

Co-authored publications:

7. Tao, M., Fiore, A.M., **Jin, X.**, Schiferl, L,K., Commane, R., Judd, L.M., Janz, Scott., Sullivan, J.T., Miller, P.T., Karambelas, A., Davis, S., Tzortziou, M., Valin, L., Whitehill, A., Civerolo, K., and Tian, Y., (2022), *Environmental Science & Technology*, *56* (22), doi: 10.1021/acs.est.2c02972.
8. Li, C., Zhu, Q., **Jin, X.** & Cohen, R. C., (2022), Elucidating Contributions of Anthropogenic Volatile Organic Compounds and Particulate Matter to Ozone Trends over China. *Environmental Science & Technology*, 56 (18), 12906–12916, doi: 10.1021/acs.est.2c03315.
9. Delaria, E., Place, B., Turner, A., Zhu, Q., **Jin, X.**, Cohen, R, (2021). Development of a solar induced fluorescence-canopy conductance model and its application to stomatal reactive nitrogen deposition, *ACS Earth and Space Chemistry*, doi:10.1021/acsearthspacechem.1c00260.
10. He, M.Z., Do, V., Liu, S., Kinney, P., Fiore, A.M., **Jin, X.,** DeFelice, N., Bi, J., Liu, Y., Insaf, T.Z., Kioumourtzoglou M., (2021). Short-term $PM_{2.5}$ and cardiovascular admissions in NY State: assessing sensitivity to exposure model choice. *Environ Health*. 20, 93, doi: 10.1186/s12940-021-00782-3.

11. Naimark, J.G., Fiore, A.M., **Jin, X.,** Wang, Y., Klovenski, E., Braneon, C., (2021). Evaluating Drought Responses of Surface Ozone Precursor Proxies: Variations with Land Cover Type, Precipitation, and Temperature. *Geophysical Research Letters*, 48, e2020GL091520, doi:10.1029/2020GL091520
12. McFarlane, C., Isevulambire, P.K., Lumbuenamo, R.S., Ndinga, A.M.E., Dhammapala, R., **Jin, X.,** McNeill, V.F., Malings, C., Subramanian, R., Westervelt, D.M., (2021). First Measurements of Ambient $PM_{2.5}$ in Kinshasa, Democratic Republic of Congo and Brazzaville, Republic of Congo Using Field-calibrated Low-cost Sensors. Aerosol Air Qual. Res. 21, 200619. https://doi.org/10.4209/aaqr.200619.
13. Anenberg, S., Bindl, M., Brauer, M., Castillo, J., Cavalieri, S., Duncan, B., Fiore, A., Fuller, R., Goldberg, D., Henze, D., Hess, J., Holloway, T., James, P., **Jin, X.,** Kheirbek, I., Kinney, P., Liu, Y., Mohegh, A., Patz, J., Jimenez, M., Roy, A., Tong, D., Walker, K., Watts, N., West, J., (2020). Using satellites to track indicators of global air pollution and climate change impacts: Lessons learned from a NASA-supported science-stakeholder collaborative, *GeoHealth*, 4(7), doi: 10.1029/2020gh000270.
14. Diffenbaugh, N., Field, C., Appel, E., Azevedo, I., Baldocchi, D., Burke, M., Burney, J., Ciais, P., Davis, S., Fiore, A., Fletcher, S., Hertel, T., Horton, D., Hsiang, S., Jackson, R., **Jin, X.**, Levi, M., Lobell, D., McKinley, G., Moore, F., Montgomery, A., Nadeau, K., Pataki, D., Randerson, J., Reichstein, M., Schnell, J., Seneviratne, S., Singh, D., Steiner, A., Wong-Parodi, G., (2020). The COVID-19 lockdowns: a window into the Earth System, *Nature Reviews Earth & Environment*, doi:10.1038/s43017-020-0079-1.
15. Du, X., **Jin, X.,** Zucker, N., Kennedy, R., Urpelainen, J., (2020). Transboundary air pollution from coal-fired power generation, *Journal of Environmental Management*, 270, 110862, doi: 10.1016/j.jenvman.2020.110862
16. Kopas, J., York, E., **Jin, X.**, Harish, S., Kennedy, R., Shen, S., Urpelainen, J. (2020). Environmental Justice in India: Incidence of Air Pollution from Coal-Fired Power Plants, *Ecological Economics*, 176, 106711, doi:10.1016/j.ecolecon.2020.106711.
17. Maamoun, N., Kennedy, R., **Jin, X.**, Urpelainen, J., (2020). Identifying coal-fired power plants for early retirement, *Renewable & Sustainable Energy Reviews*, 126, 109833, doi: 10.1016/j.rser.2020.109833.
18. Kim, S.E., Harish, S.P., Kennedy, R., **Jin, X.**, Urpelainen, J., (2020). Environmental degradation and public opinion: the case of air pollution in Vietnam, *Journal of Environment and Development*, *78*(112), 107049651988825–27, doi:10.1177/1070496519888252.
19. Diao, M., Holloway, T., Choi, S., O'Neill, S.M., Al-Hamdan, M.Z., Donkelaar, A. van, Martin, R.V., **Jin, X.**, Fiore, A.M., Henze, D.K., Lacey, F., Kinney, P.L., Freedman, F., Larkin, N.K., Zou, Y., Kelly, J.T., Vaidyanathan, A., (2019). Methods, availability, and applications of $PM_{2.5}$ exposure estimates derived from ground measurements, satellite, and atmospheric models, *Journal of Air & Waste Management Association*, doi: 10.1080/10962247.2019.1668498.
20. Wong, M. S. [†], **Jin, X.**[†], Liu, Z., Nichol, J., Ye, S., Jiang, P., Chan, P., (2015). Geostationary satellite observation of precipitable water vapor using an empirical orthogonal function (EOF) based reconstruction technique over Eastern China. *Remote Sensing*, **7**, 5879-5900, doi: 10.3390/rs70505879. ([†] Authors contribute equally.)
21. Wong, M., **Jin, X**., Liu, Z., Nichol, J., Ye, S., Jiang, P., Chan, P., (2015). Multi-sensors study of precipitable water vapour over mainland China. *Int. J. Climatol.*, 35(10), 3146–3159, doi: 10.1002/joc.4199.

Non-refereed publications:

1. **Jin, X.,** Fiore, A. M., Geigert, M., (2018), Using satellite observed formaldehyde (HCHO) and nitrogen dioxide (NO_2) as an indicator of ozone sensitivity in a State Implementation Plan (SIP), *Columbia University Academic Commons*, doi: 10.7916/D8M34C7V.

PRESENTATIONS

Invited Talks:

1. Observing air pollution from space: sources, chemical formation and health impacts, *Rutgers University Department of Environmental Sciences*, April 2022.
2. Observing air quality from space: sources, chemical formation and health impacts, *San Jose State University Department of Meteorology and Climate Science*, February 2022.
3. Using satellite observations to guide emission control strategies for surface ozone pollution, *AGU GeoHealth Early Career Webinar*, October 2021.
4. Observing precursor emissions and chemistry of ground-level O_3 from space, *University of Washington Department of Atmospheric Sciences*, May 2021.
5. Observing air quality from space: source, chemical formation and health impacts, *University of Michigan Department of Climate and Space Sciences and Engineering*, March 2021.
6. Observing the chemistry of ground-level O_3 from space, AGU Fall 2020 Meeting, December 2020.
7. Observing the distributions and chemistry of major air pollutants (O_3 and $PM_{2.5}$) from space, *NCAR ACOM Seminar*, August 2020.
8. Changes of summertime surface ozone-NO_x-VOC chemistry over U.S. urban areas inferred from two decades of satellite and ground based observations, *Photochemical Modeling Coordination Webinar* organized by Maryland Department of the Environment, December 2019.
9. Comparing $PM_{2.5}$ exposure products for estimating health benefits of emission controls, *International Aerosol Modeling Algorithms Conference 2019*, Davis, CA, USA, December 2019.
10. Inferring distributions of ground-level $PM_{2.5}$ from space: uncertainty, trends over New York State and public health implications, *Air Quality Research Seminars and Discussion (AQRSD)*, NOAA ESRL, October 2019.
11. Comparing $PM_{2.5}$ exposure products for estimating health benefits of emission controls in New York, *CDC Tracking Annual Recipient Meeting*, Atlanta, GA, USA, September 2019.
12. Applications of satellite remote sensing to infer distributions and chemistry of two major air pollutants: $PM_{2.5}$ and O_3, *NYSDEC Division of Air's Bureau of Air Quality Analysis and Research (BAQAR) Seminar*, Albany, NY, USA, June 2019.
13. Using satellite data to guide emission control strategies for surface ozone pollution, *AGU Fall 2017 Meeting*, New Orleans, LA, USA, December 2017.

Conference Presentations:

1. Direct estimates of biomass burning NOx emissions and lifetime using daily observations from TROPOMI (oral and poster), IGAC 2021, September 2021.
2. Observing chemistry of ground-level ozone from space (poster), TEMPO Science Team Meeting (virtual), August 2020.

3. Two decades of ground-level Ozone–NO_x–VOC chemistry over U.S. urban areas inferred from satellite and ground-based observations (oral), AMS Annual Meeting, Boston, MA, USA, January 2020.
4. Short-term changes in ozone precursors during 2018 California wildfires observed from TROPOMI (poster), *AGU Fall 2019 Meeting*, San Francisco, CA, USA, December 2019. (Outstanding Student Paper Award winner)
5. Using space-based observations to guide emission control strategies for surface ozone pollution (oral), *MIT CEE Rising Stars Workshop*, Cambridge, MA, USA, October 2019.
6. Comparing $PM_{2.5}$ exposure products for estimating health benefits of emission controls: the value of satellite remote sensing (oral), *FASCINATE Workshop*, NCAR, Boulder, CO, USA, September 2019.
7. Diagnosing long-term and short-term changes in ozone production sensitivity to precursor emissions over U.S. urban area (oral), Aura Science Team Meeting, Pasadena, CA, USA, August 2019.
8. Two-decade changes of ground-level ozone-NO_x-VOC chemistry over the U.S. urban areas: the view from space (poster), *NASA HAQAST 6 Meeting*, Pasadena, CA, USA, July 2019.
9. Diagnosing long-term and short-term changes in ozone production sensitivity to precursor emissions: the view from space (poster), 9*th GEOS-Chem Meeting*, Cambridge, MA, USA, May 2019.
10. Diagnosing long-term and short-term changes in ozone production sensitivity to precursor emissions: the view from space (poster), *EGU General Assembly 2019*, Vienna, Austria, April 2019.
11. Quantifying the health benefits of emission reduction over New York State using multiple $PM_{2.5}$ products (oral), *HAQAST5 Meeting*, Phoenix, AZ, USA, January 2019.
12. Diagnosing the long-term changes in ozone production sensitivity to precursor emissions: perspectives from two-decade multi-satellite observations (oral), *AGU Fall 2018 Meeting*, Washington D.C., USA, December 2018.
13. Diagnosing the sensitivity of surface ozone pollution to precursor emissions: the view from space (poster), *Air Pollution Extreme Workshop*, New York, NY, USA, November 2018.
14. Analyzing uncertainties in a geophysical approach to estimate surface $PM_{2.5}$ from satellite AOD (oral), *NASA HAQAST4 Meeting,* Madison, WI, USA, July 2018.
15. Mapping $PM_{2.5}$ exposure over Northeast USA with model, satellite and in-situ data (poster), *AGU Fall 2017 Meeting*, New Orleans, LA, USA, December 2017.
16. Combining satellite data and CMAQ model to map $PM_{2.5}$ exposure over the Northeast USA (oral), *NASA HAQAST3 Meeting*, Lamont-Doherty Earth Observatory, Palisades, NY, USA, November 2017.
17. Evaluating a space-based indicator of surface ozone sensitivity to emissions of NO_x vs. NMVOC and applications to decadal trends (oral), 8*th GEOS-Chem Meeting*, Harvard University, Cambridge, MA, USA, May 2017.
18. Estimating $PM_{2.5}$ exposure across Northeast US from satellite observations (poster), *NYC Metro Area Energy & Air Quality Data Gaps Workshop*, Lamont-Doherty Earth Observatory, Palisades, NY, US, May 2017.

19. Decadal trend of ozone-NO_x-VOC sensitivity over New York State: the view from space (poster), *NYC Metro Area Energy & Air Quality Data Gaps Workshop*, Lamont-Doherty Earth Observatory, Palisades, NY, USA, May 2017.
20. Evaluating a space-based indicator of surface ozone sensitivity to emissions of NO_x vs. NMVOC over major northern mid-latitude source regions (oral), *AGU Fall 2016 Meeting*, San Francisco, CA, USA, December 2016. (Outstanding Student Paper Award winner)
21. Decadal trend of surface ozone-NO_x-VOC sensitivity over China: the view from space (oral), *Chinese Environmental Scholars Forum*, Princeton University, Princeton, NJ, USA, June 2016.
22. Space-based indicators for surface ozone production (oral), *First Year Graduate Colloquium*, Lamont-Doherty Earth Observatory, Columbia University, Palisades, NY, USA, Apr. 2016.
23. Evaluating a space-based indicator for surface ozone production (poster), *NASA Air Quality Applied Science Team 10th Semiannual Meeting*, U.S. Environmental Protection Agency, NC, USA, Jan. 2016.
24. Evaluating gas-phase chemistry of a global chemistry-climate model using satellite data (poster), *HTAP2 Global and Regional Model Evaluation Workshop*, National Center for Atmospheric Research, Boulder, CO, USA, May 2015.

PROFESSIONAL ACTIVITIES

Member: American Geophysical Union, European Geosciences Union, American Meteorological Society

Session Co-Convener at American Geophysical Union Fall 2020 Meeting:

A081. The Effect of the COVID-19 Outbreak on Air Pollution and Urban Carbon Emissions

GH006. Characterizing and Incorporation Uncertainty in Health Impacts from Climate and Air Pollution

Journal Reviewer: *ACS Earth and Space Chemistry*; *ACS Environmental Au*; *Air Quality, Atmosphere & Health; Atmospheric Chemistry & Physics*; *Atmospheric Environment*; *Atmospheric Measurement Techniques; Atmosphere*; *Environmental Science & Technology*; *Environmental Research Letters; Environmental Science & Technology Letters*; *Environmental Research*; *Environmental Science: Processes & Impacts; Environmental Science: Atmospheres; Environmental Chemistry Letters; Environmental Pollution; Geophysical Research Letters; Geohealth; One Earth*; *Plos One; IEEE Transactions on Geoscience and Remote Sensing*; *Journal of Geophysical Research: Atmospheres; Environment International; Journal of Applied Remote Sensing*; *Journal of Environmental Management; Nature Communications; npj Climate and Atmospheric Science; Processes; Remote Sensing of Environment; Scientific Reports.*