Curriculum Vitae

Yang Liu, PhD

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Emory University, Rollins School of Public Health
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EDUCATION

2004   Harvard University
        PhD, Environmental Sciences and Engineering
1999   University of California at Davis
        MS, Mechanical Engineering
1997   Tsinghua University, China
        BS, Environmental Sciences and Engineering

PROFESSIONAL EXPERIENCE

Academic Appointments

10/2022-   Adjunct Professor, School of Civil and Environmental Engineering, Georgia Tech, Atlanta, GA

12/2020-   Gangarosa Distinguished Professor and Chair, Gangarosa Department of Environmental Health (GDEH), Rollins School of Public Health (RSPH), Emory University, Atlanta, GA

5/2020-   Professor, GDEH, RSPH, Emory University, Atlanta, GA

10/2019-   Director, Emory Climate and Health Research Incubator

6/2014-4/2020 Associate Professor with Tenure, GDEH, RSPH, Emory University, Atlanta, GA

1/2009-5/2014 Assistant Professor, GDEH, RSPH, Emory University, Atlanta, GA

1/2008-12/2008 Research Associate, Harvard T.H. Chan School of Public Health, Boston, MA

8/2005-12/2007 Postdoctoral Research Fellow, Harvard T.H. Chan School of Public Health, Boston, MA

8/1999-2/2004 Graduate Research Assistant, Harvard John A. Paulson School of Engineering and Applied Sciences, Cambridge, MA

8/1998-7/1999 Graduate Research Assistant, University of California, Davis, CA

Other Professional Positions and Training

2019   Atlanta Society of Mentors (ASOM) faculty mentoring workshop, Emory University
2017   Kauffman FastTrac® TechVenture Course, Emory University
2/2004-6/2005 Associate Consultant, ENVIRON International Corporation, Arlington, VA
5/2001-7/2001 Intern, The World Bank Group, Washington, DC
7/1997-6/1998 Associate Consultant, Environmental Resources Management (ERM) Group, Beijing, China

HONORS, FELLOWSHIPS, AND AWARDS

2020 -   Georgia Research Alliance Distinguished Investigator
2019 -   Clarivate Highly Cited Researcher in recognition of exceptional research performance demonstrated by production of multiple highly cited papers that rank in the top 1% for field and year in Cross-Field
2019   William T. Pecora Group Award for achievement in Earth remote sensing as member of the NASA Terra satellite team
11/2018-10/2021 Adjunct Professor, the National Institute of Environmental Health, Chinese Center for Disease Control and Prevention
9/2017-8/2021 Scientific Advisory Committee Member, National Key R&D Program Project of China "The Chronic Health Risk due to Air Pollution in China", Fuwai Hospital, Chinese Academy of Medical Sciences and Peking Union Medical College

2015-2019	Fulbright Specialist, the U.S. Department of State's Bureau of Educational and Cultural Affairs and the Institute of International Education's Council for International Exchange of Scholars
2016-2019	Visiting Professor, Tsinghua University, China
2016-2018	Oriental Scholar, Shanghai Municipal Government, China
2014-2017	Senior Fellow on Health, Environment and Public Policy, Academy of Media and Public Affairs, Communication University of China
2013-2015	Visiting Professor, The Institute of Remote Sensing and Digital Earth (RADI), Chinese Academy of Sciences, Beijing, China
2013-2015	Senior Visiting Scholar, Fudan University, Shanghai, China
2009-2012	ORISE faculty fellow at CDC, Oak Ridge Institute for Science and Education
2010	CDC NCEH/ATSDR Honor Award for Excellence in Surveillance and Monitoring, group winner (the Environmental Public Health Tracking Branch)
2010	Fund for Innovative Teaching, Center for Faculty Development and Excellence, Emory University
2006	Early career and new faculty scientist travel award for participation in the "Air Quality Remote Sensing from Space" workshop at NCAR, Boulder CO
2003	Harvard University Center for the Environment Faculty Research Award (major contributor)
2002	Herbert Winokur, Jr. Fellowship, Harvard Graduate School of Arts and Sciences
2001	Ernst Habicht Fellowship, Harvard Division of Engineering and Applied Sciences
1997	Medal of Honor for Excellent College Graduates, Tsinghua University
1996	"12.9" Fellowship, Tsinghua University
1994	International Engineering and Technology Foundation Scholarship, Tsinghua University
1993, 95, 97	First-class Outstanding Student Scholarship, Tsinghua University

RESEARCH FUNDING
Principal Investigator or Co-Principal Investigator

9/2022-8/2025	Advancing climate change research, teaching, outreach and practice at Emory Funder: Office of the Provost, Emory University Goal: to explore options to support the long-term growth of Emory's climate change research, teaching, outreach, and practice
8/2022-4/2027	The impact of wildfire smoke exposure on cardiovascular health in the western US (Grant # 1R01ES034175) Funder: NIH Goal: to quantify the relationships between acute and chronic exposure to wildfire smoke and CVD outcomes in the Western US, and estimate future smoke-related CVD burden due to climate change
5/2021-4/2024	Georgia Climate Project Funder: Ray C. Anderson Foundation Goal: Advancing stronger conversations, solutions, and science of climate change in Georgia
2/2021-1/2025	NASA ROSES 2020 Solicitation A.38: HAQAST3: Using Earth Observations to Support National and Global Environmental Health Research and Surveillance (Grant # 80NSSC21K0507) Funder: NASA Goal: to translate knowledge in applied research using satellite remote sensing data to various federal agencies, professional societies, and global public health initiatives.
9/2020-6/2024	Cardiovascular health and exposure to PM2.5 constituents: a multi-cohort study (Grant # 1R01ES032140) Funder: NIH

Goal: evaluate the associations of exposure to ambient PM2.5 constituents with both fatal and non-fatal CVD incidences in a retrospective multi-cohort study in China

10/2019-9/2021 High-resolution downscaling of climate data for health impact assessment in the U.S.
Funder: IBM (free supercomputing time on the World Community Grid, weather data from The Weather Company, and IBM Cloud Object Storage) and RSPH (in-kind support)
Goal: generate future bias-corrected projections of temperature and air pollution at 1 km spatial resolution for over 100 years of climate simulations over the contiguous US for detailed climate health impact assessment.

10/2019-9/2022 Emory Climate and Health Research Incubator
Funder: Emory Rollins School of Public Health
Goal: catalyze development of major climate and health research projects that can significantly improve the world's ability to respond to climate change and establish Emory as a national and international leader in climate and health.

3/2019-2/2020 The impact of transboundary PM2.5 pollution from China to South Korea: a satellite view
Funder: Emory Global Research Cooperation Funding (GRCF) program
Goal: provide high-quality PM2.5 datasets for Korean researchers and air quality management agencies to better understand the complete spatiotemporal characteristics of PM2.5 during heavy air pollution episodes.

11/2018-9/2023 NASA ROSES 2017 Solicitation A.39: Preparing Key State and Local Health and Air Quality Agencies for Upcoming Earth Observations (Grant # 80NSSC19K0191)
Funder: NASA
Goal: prepare the state health and air quality management agencies for the next-generation satellite instruments such as MAIA, TEMPO, and GOES-16.

5/2018-4/2019 Evaluating Satellite-based PM2.5 Air Quality Models in Urban East Asia
Funder: Emory University Research Committee
Goal: transfer the satellite PM2.5 models developed in the US to two East Asian urban regions and examine how model accuracy would change when supplied with local parameters.

5/2017-3/2018 Developing Advanced PM2.5 Exposure Models in Lima, Peru
Funder: The HERCULES Exposome Research Center
Goal: develop a machine learning model to estimate daily PM2.5 exposure in Lima at 1 km spatial resolution.

8/2016-8/2021 NASA ROSES 2015 Solicitation A.46: HAQAST2: Using Earth Observations to Support Regional and National Environmental Health Surveillance (Grant # NNX16AQ28G)
Funder: NASA
Goal: translate knowledge in applying NASA Earth observations in air quality and public health research to our public health partners in the US.

6/2016-10/2026 Multi-Angle Imager for Aerosols (MAIA) instrument mission (Contract # 1558091)
Funder: NASA (Announcement of Opportunity NNH12ZDA006O-EVI3)
Goal: design the next generation NASA aerosol sensor and investigate the association between the exposure to PM2.5 components with various health endpoints in world cities.
Role: member of MAIA science team (PI: David Diner), PI of Emory subcontract

1/2016-12/2020 Wildfires in the Rocky Mountains Region: Current and Future Impacts on PM$_{2.5}$, Health, and Policy (Grant # 83586901)
Funder: USEPA
Goal: investigate the impacts of historical and future wildfires on air quality, public health, and environmental management in the Rocky Mountains Region.

5/2014-4/2018 NASA ROSES 2013 solicitation A.17 - Aura Science Team: Evaluate, Enhance, and Apply Aura Products in Public Health Tracking (Grant # NNX14AG01G)
Funder: NASA

Goal: develop population weighted solar radiation and UV radiation data for the CDC Tracking network.

5/2011-4/2017 NASA ROSES 2009 Solicitation A.32 – HAQAST1: Air Quality Applied Sciences Team: Improving Satellite Aerosol Remote Sensing Data for Air Pollution Health Research (Grant # NNX11AI53G)
Funder: NASA
Goal: improve the accuracy and spatial coverage of satellite remote sensing data for better applications in air pollution health effects research through investigator-initiated and tiger team projects.

1/2009-2/2023 Improving MISR's Capability of Predicting Ground Level $PM_{2.5}$ Concentrations with Observed Aerosol Vertical Profiles (Contract # 1363692)
Funder: NASA Jet Propulsion Laboratory
Goal: develop PM2.5 speciation models using MISR-retrieved aerosol microphysical properties.

5/2011-4/2014 Uncertainties in Modeling Spatially-Resolved Climate Change Health Impacts (Grant # 1R21ES020225)
Funder: NIH
Goal: analyze the uncertainty in spatially resolved health impacts projections including the relative importance of various error components in order to improve the characterization of population vulnerability.

10/2009-9/2013 Assessing the Cumulative Climate-Related Health Risks in the Eastern U.S. (Cooperative agreement # 1 U01 EH000405)
Funder: CDC
Goal: model health risks associated with three groups of climate-related stressors: direct (heat waves), proximal (air pollution including ozone and PM2.5) and distal (Lyme disease vectors as the prototype).

10/2009-9/2013 NASA ROSES 2008 Solicitation A.18 - Decision Support Through Earth Science Research Results: Enhancing Environmental Public Health Tracking with Satellite-Driven Particle Exposure Modeling and Epidemiology (Grant # NNX09AT52G)
Funder: NASA
Goal: estimate the temporal and spatial characteristics of PM2.5 concentrations through an advanced spatial modeling framework that can be used by CDC and its federal, state and local partners to support, and evaluate public health policy and practice related to health impacts of air pollution.

9/2009-8/2010 NASA ROSES 2008 Solicitation A.19 - Earth Science Applications Feasibility Studies: Satellite and Model Assisted Accountability Research to Support Clean Air Interstate Rule (SmartCAIR) (Grant # NNX09AQ54G)
Funder: NASA
Goal: develop a satellite-driven PM2.5 sulfate concentration model and compare with other methods of estimating ground-level SO4 concentrations

Co-Investigator

10/2022-9/2027 Acquisition of ground-based remote sensing measurement networks for STEM research and research education in Spelman College
Funder: NASA
Goal: to acquire a Pandora spectrometer system and an Aeronet instrument to enhance STEM (Science, Technology, Engineering, and Mathematics) research and research education in Spelman College, a historically black college for women.
Principal Investigator: Guanyu Huang (Spelman College)
Role: Co-investigator (2% effort)

9/2022-8/2023 Using NASA Earth Observations to Support Environmental Justice Communities in Atlanta, Georgia
Funder: NASA
Principal Investigator: Yun Hang (Emory University)
Role: Co-investigator (2.5% effort, in-kind support)

9/2022-8/2025   Building Resilience in Atlanta: Leveraging Community Knowledge to Understand and Map the health impacts of cumulative environmental exposures and social vulnerability in the context of climate change (Grant # 84048501)
Funder: EPA
Goal: to understand how the cumulative health impact of chemical and non-chemical exposures is exacerbated by climate change among the most vulnerable communities in Atlanta.
Principal Investigators: Saria Hassan & Eri Saikawa
Role: Co-investigator (2.5% effort)

9/2021-6/2025   Air Pollution and Alzheimer's Disease and Related Dementias: A National Study (Grant # 1R01AG074357)
Funder: NIH
Goal: to better quantify health effects of air pollution exposures on Alzheimer's disease and related dementias (AD/ADRD), using Medicare Chronic Conditions Data Warehouse, and high-resolution exposures predicted from machine learning.
Principal Investigator: Liuhua Shi (Emory University)
Role: Co-investigator (7.5% effort)

5/2020-4/2021   A Big Data Approach to PM2.5 Components, Sources, and Alzheimer's Disease
Funder: Goizueta Alzheimer's Disease Research Center (GADRC)
Goal: identify which components and sources are most responsible for AD risk and progression and better frame environmental policy.
Principal Investigator: Liuhua Shi (Emory University)
Role: Co-investigator (2.5% in-kind support)

4/2020-3/2021   A Big Data Approach to PM2.5 and Its Components and Alzheimer's Disease
Funder: The HERCULES Exposome Research Center
Goal: leverage massive datasets of exposure and health outcomes, coupled with advanced statistical methods, to identify which components are most responsible for AD risk and better frame environmental policy.
Principal Investigator: Liuhua Shi (Emory University)
Role: Co-investigator (2.5% in-kind support)

4/2019-3/2021   Estimating Spatiotemporally Resolved Pollen Counts in Atlanta Using Low-cost, Automated Sensors and Machine Learning
Funder: The HERCULES Exposome Research Center
Goal: evaluate the spatiotemporal patterns of speciated pollen counts in the Atlanta area by collecting data using an innovative real-time, automated pollen sensor and applying these data in a machine learning model to estimate spatiotemporally-resolved pollen counts.
Principal Investigator: Daniel Rochberg (Emory University)
Role: Co-investigator (2.5% effort)

5/2018-4/2023   Extreme heat events and pregnancy duration: a national study (Grant # 1R01ES028346)
Funder: NIH
Goal: use large national databases and robust methodological approaches to advance our understanding of the effects of extreme heat on reproductive health.
Principal Investigator: Howard Chang (Emory University)
Role: Co-investigator (7.5% effort)

5/2017-1/2022   Data Integration Methods for Environmental Exposures with Applications to Air Pollution and Asthma Morbidity (Grant # 1R01ES027892)
Funder: NIH
Goal: develop novel spatial-temporal statistical methods for estimating ambient air pollution exposures and their health effects.
Principal Investigator: Howard Chang (Emory University)
Role: Co-investigator (7.5% effort)

3/2014-12/2018   NASA ROSES 2013 Solicitation A.29: Evaluate and Enhance Suomi NPP Products for Air Quality and Public Health Applications (Grant # NNX15AC28A)
Funder: NASA
Goal: explore the utility of S-NPP VIIRS products in air pollution exposure assessment.
Principal Investigator: Jun Wang (University of Nebraska-Lincoln)
Role: PI of Emory subcontract (10% effort)

12/2013-11/2016   Statistical Methods for Exposure Uncertainty in Air Pollution and Health Studies (Grant # 1R21ES022795)
Funder: NIH
Goal: develop and apply innovative statistical methods for improving exposure assessment and quantifying exposure uncertainties in air pollution and health studies.
Principal Investigator: Howard Chang (Emory University)
Role: Co-investigator (10% effort)

9/2011-4/2016   Spatial and temporal modeling of $PM_{2.5}$ and infant morbidity (Grant # 1R01ES019897)
Funder: NIH
Goal: examine the relationship between ambient PM2.5 exposure and the risk of infant bronchiolitis and otitis media.
Principal Investigator: Veronica Vieira (UC Irvine)
Role: Co-Investigator (5% effort)

6/2012-5/2014   NASA Applied Remote SEnsing Training (ARSET) air quality project (Contract # 0000011758)
Funder: NASA via University of Maryland
Goal: prepare and conduct in-person training workshop on the application of satellite data in air quality management and public health.
Principal Investigator: Ana Prados (University of Maryland)
Role: Co-investigator (8% effort)

1/2011-12/2013   NASA ROSES 2010 Solicitation A.22 - NPP Science Team: Evaluate and Enhance the VIIRS Aerosol EDRs for Air Quality and Public Health Applications (Grant # NNX11AJ03G)
Funder: NASA
Goal: assess and improve the surface reflectance characterization scheme used in VIIRS algorithm for AOT retrievals, evaluate the VIIRS AOT retrieval in dusty conditions, and conduct the independent retrieval of AOT and surface PM for evaluating the VIIRS atmospheric suspended matter EDR.
Principal Investigator: Jun Wang (University of Nebraska-Lincoln)
Role: PI of Emory subcontract (10% effort)

1/2011-12/2016   The Emory/Georgia Tech Collaborative: Multi-Scale Assessment of Health Effects of Air Pollution Mixtures Using Novel Measurements and Models (Grant # D83479901)
Funder: USEPA
Goal: establish an Emory/Georgia Tech center for the study of health effects of air pollution mixtures.
Principal Investigator: Paige Tolbert (Emory) and Ted Russell (Georgia Tech)
Role: Co-Investigator (10% effort)

8/2009-4/2013   Effect of Air Pollution and Traffic on Birth Outcomes (Grant # R01ES016317/A07290)
Funder: NIH
Goal: investigate the effects of maternal exposure to ambient air pollution and traffic using an existing cohort of women followed prospectively throughout pregnancy and birth certificate data to investigate the risk of low birth weight, preterm delivery, and small for gestational age.
Principal Investigator: Kathy Belanger and Michelle Bell (Yale University)
Role: PI of Emory subcontract (5% effort)

6/2010-5/2011   Application of Satellite Aerosol Remote Sensing Technology to Estimate the Health Impacts of Airborne Particles

Funder: Harvard NIEHS Center for Environmental Health Pilot Program
Goal: develop satellite-driven PM2.5 exposure models during severe haze events in Northern China Plain
Principal Investigator: Zhaoxi Wang (Harvard University)
Role: Collaborator

6/2008-5/2009 Integrating Satellite and Monitoring Data to Estimate the Health Impacts of Airborne Particles Pre- and Post-Beijing Olympic Games 2008
Funder: Harvard University Center for the Environment
Goal: understand the impact of emissions control policies before and during the 2008 Beijing Olympic Games with a satellite-driven statistical model.
Principal Investigator: David Christiani and Petros Koutrakis (Harvard University)
Role: Co-investigator

1/2006-12/2008 Integrating satellite and monitoring data to retrospectively estimate monthly PM2.5 concentrations in the eastern United States
Funder: Health Effects Institute
Goal: assess the ability of approaches that use satellite AOD from NASA's MISR and MODIS to fill spatial and temporal gaps in existing monitoring networks in the eastern United States.
Principal Investigator: Chris Paciorek (Harvard University)
Role: Co-Investigator (10% effort)

INTERNATIONAL RESEARCH COLLABORATION

2011–2013 Aerosol Retrieval in North China Plain Based on MISR and GEOS-Chem Simulations (Grant # OFSLRSS201103)
Funder: Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences
Principal Investigator: Liangfu Chen (Chinese Academy of Sciences)
Role: Collaborator

2014–2018 Acute Effects of Fine Particulate Matter Estimated from Satellite Remote Sensing Data on Population Mortality (Grant # 81372950)
Funder: Chinese National Science Foundation
Principal Investigator: Guoxing Li (Peking University, China)
Role: Collaborator

PUBLICATIONS

Google Scholar citations (as of November 2022): 72331, h-index: 82, i10-index: 195.
ORCID: 0000-0001-5477-2186
Peer-Reviewed Articles (Student/postdoc first authors indicated with an asterisk)

1. Romanello M, Di Napoli C, Drummond P, Green C, Kennard H, Lampard P, Scamman D, Arnell N, Ayeb-Karlsson S, Ford L, Belesova L, Bowen K, Cai W, Callaghan M, Campbell-Lendrum D, Chambers J, van Daalen K, Dalin C, Dasandi N, Dasgupta S, Davies M, Dominguez-Salas P, Dubrow R, Ebi K, Eckelman M, Ekins P, Escobar L, Georgeson L, Graham H, Gunther S, Hamilton I, Hang Y, Hänninen R, Hartinger S, He K, Hess J, Hsu S, Jankin S, Jamart L, Jay O, Kelman I, Kiesewetter G, Kinney P, Kjellstrom T, Kniveton D, Lee J, Lemke B, Liu Y, Liu Z, Lott M, Batista M, Lowe R, MacGuire F, Sewe M, Martinez-Urtaza J, Maslin M, McAllister L, McGushin A, McMichael C, Mi Z, Milner J, Minor K, Minx J, Mohajeri N, Moradi-Lakeh M, Morrissey K, Munzert S, Murray K, Neville T, Nilsson M, Obradovich N, O'Hare M, Oreszczyn T, Otto M, Owfi F, Pearman O, Rabbaniha M, Robinson E, Rocklöv J, Salas R, Semenza J, Sherman J, Shi L, Shumake-Guillemot J, Silbert G, Sofiev M, Springmann M, Stowell J, Tabatabaei M, Taylor J, Triñanes J, Wagner F, Wilkinson P, Winning M, Yglesias-González M, Zhang S, Gong P, Montgomery H, Costello A. 2022. The 2022 report of the lancet countdown on health and climate change: Health at the mercy of fossil fuels. *The Lancet*. DOI: https://doi.org/10.1016/S0140-6736(22)01540-9.

2. Lee H, Liu Y, Chatfield R. Neighborhood-scale ambient NO2 concentrations using TROPOMI NO2 data: Applications for spatially comprehensive exposure assessment. *Sci Total Environ*. DOI: https://doi.org/10.1016/j.scitotenv.2022.159342.

3. Hu K, Keenan K, Hale J, Kulu H, Liu Y. A longitudinal analysis of the association between long-term exposure to air pollution and cognitive function among adults aged 45 and over in China. *J Gerontol*. In press.

4. Liu C, Cha K, Lv J, Lam H, Newell K, Meng X, Liu Y, Chen R, Kartsonaki C, Wright N, Du H, Yang L, Chen Y, Guo Y, Pei P, Yu C, Shen H, Wu T, Kan H, Chen Z, Li L. 2022. Long-term exposure to ambient fine particulate matter and incidence of major cardiovascular diseases: a prospective study of 0.5 million adults in China. *Environ Sci Technol*. https://doi.org/10.1021/acs.est.2c03084.

5. Wang L, Li Q, Qiu Q, Hou L, Huang S, Li J, Tang L, Liu Y. 2022. Assessing ecological risk induced by PM2.5 pollution in the Golden Triangle of Southern Fujian Province, China. *J Environ Manage*. 324:116284. (Co-corresponding author)

6. Romanello M, Arnell N, Ayeb-Karlsson S, Belesova K, Ford L, Bowen K, Cai W, Callaghan M, Campbell-Lendrum D, Chambers J, Costello A, Dalin C, Dasandi N, Dasgupta S, Davies M, Napoli C, Dominguez-Salas P, Drummond P, Dubrow R, Ebi K, Eckelman M, Ekins P, Escobar L, Georgeson L, Gong P, Graham H, Green C, Gunther S, Hamilton I, Hang Y, Hänninen R, Hartinger S, He K, Hess J, Hsu S, Jamart L, Jankin S, Jay O, Kelman I, Kennard H, Kiesewetter G, Kinney P, Kjellstrom T, Kniveton D, Lampard P, Lee J, Lemke B, Liu Y, Liu Z, Lott, M, Batista M, Lowe R, McaGuire F, Martinez-Urtaza J, Maslin M, McAllister L, McGushin A, McMichael C, Mi Z, Milner J, Minor K, Minx J, Mohajeri N, Montgomery H, Moradi-Lakeh M, Morrissey K, Munzert S, Murray K, Neville T, Nilsson M, Obradovich N, Sewe M, O'Hare M, Oreszczyn T, Otto M, Owfi F, Pearman O, Rabbaniha M, Robinson E, Röcklov J, Salas R, Scamman D, Semenza J, Sherman J, Shi L, Shumake-Guillemot J, Silbert G, Sofiev M, Springmann M, Stowell J, Tabatabaei M, Taylor J, Triñanes J, van Daalen K, Wagner F, Wilkinson P, Winning M, Yglesias-González M, Zhang S. The 2022 Report of the Lancet Countdown on Health and Climate Change. *The Lancet*. In press.

7. Yan M, Ge H, Zhang L, Chen X, Yang X, Liu F, Shan A, Liang F, Li X, Ma Z, Liu H, Pang J, Dong G, Liu Y, Chen J, Wang T, Zhao B, Zeng Q, Lu X, Liu Y, Tang N. 2022. Long-term PM2.5 exposure in association with chronic respiratory diseases morbidity: a cohort study in Northern China. *Ecotox Environ Safe*. 244:114025.

8. Pruthi D*, Liu Y. 2022. Low-cost nature-inspired deep learning system for PM2.5 forecast over Delhi, India. *Environ Int*. 166: 107373. (Corresponding author)

9. Bratburd J, Gupta P, Kondragunta S, Zhang H, Henderson B, Dickerson P, Sayeed A, Liu Y, Mao J, Pruthi D, Gundipudi K, White J, Wyatt R, Soja A, Levy R, Martin R, Christopher S, Pavlovic N. Air Quality Data When You Need It: Incorporating Satellite Data Updates into AirNow. *EM*. In press.

10. Wu Z, Liang F, Chen X, Liu G, Li G, Tian L, Guo Q, Yang C, Zhou Z, Pan X, Liu Y. 2022. Hospital Admission Risks and Ambient Fine Particulate Matter Exposure in Beijing, China. *Atmos Environ*. Article No. 119291. (Co-corresponding author)

11. Hang Y*, Meng X, Li T, Wang T, Cao J, Fu Q, Li S, Huang K, Liang F, Kan H, Shi X, Liu Y. 2022. Particulate nitrate air pollution in China remains a considerable health problem. *iScience*. 25:104899. (Corresponding author)

12. Wu Y, Zhang T, Ye Z, van der Kuijp J, Sun X, Han G, Zhao Y, Globe R, Huang L, Liu Y. Public anxiety through various stages of COVID-19 coping: Evidence from China. *PloS One*. 17(6):e0270229. (Co-corresponding author)

13. Jiang C*, Wang W, Du L, Huang G, McConaghy C, Fineman S, Liu Y. 2022. Field Evaluation of an Automated Pollen Sensor. *Int J Environ Res Public Health*. 19:6444. (Corresponding author)

14. Liu Q, Huang K, Liang F, Yang X, Li J, Chen J, Liu X, Cao J, Shen C, Yu L, Zhao Y, Deng Y, Li Y, Hu D, Lu X, Liu Y, Gu D, Liu F, Huang J. 2022. Long-Term Exposure to Fine Particulate Matter Modifies the Association Between Physical Activity and Hypertension Incidence. *J Sport Health Sci*. 11:708-715.

15. Hu K, Keenan K, Hale J, Liu Y, Kulu H. 2022. A longitudinal analysis of PM2.5 exposure and multimorbidity clusters and accumulation among adults aged 45-85 in China. *PLOS Global Public Health*. 2(6):e0000520.

16. Napoli C, McGushin A, Romanello M, Ayeb-Karlsson S, Cai W, Chambers J, Dasgupta S, Escobar L, Kelman I, Kjellstrom T, Kniveton D, Liu Y, Liu Z, Lowe R, Martinez-Urtaza J, McMichael C, Moradi-Lakeh M, Murray K, Rabbaniha M, Semenza J, Shi L, Tabatabaei M, Trinanes J, Vu B, Brimicombe C, Robinson E. 2022. Tracking the impacts of climate change on human health via indicators: lessons from the Lancet Countdown. *BMC Public Health*. 22:article number 663.

17. Yang C, Fu J, Liu Y, Dong X, Liu Y. 2022. Projections of future wildfires impacts on air pollutants and air toxics in a changing climate over the western United States. *Environ Pollut*. 304: 119213. PMID: 35351594.

18. Yang L, Yang J, Liu M, Sun X, Li T, Guo Y, Hu K, Bell M, Cheng Q, Kan H, Liu Y, Gao H, Yao X, Gao Y. 2022. Nonlinear effect of air pollution on adult pneumonia hospital visits in the coastal city of Qingdao, China. *Environ Res.* 209: 112754.

19. Gladson L, Garcia N, Bi J, Liu Y, Lee H, Cromar K. 2022. Evaluating the Utility of High-Resolution Spatiotemporal Air Pollution Data in Estimating Local PM2.5 Exposures in 92 California Cities from 2015-2018. *Atmos*. 13:85.

20. Vu B*, Bi J, Wang W, Huff A, Kondragunta S, Liu Y. 2022. Application of geostationary satellite and high-resolution meteorology data in estimating hourly PM2.5 levels during the Camp Fire episode in California. *Remote Sen Environ*. 271:112890. (Corresponding author)

21. Bi J*, Knowland E, Keller C, Liu Y. 2022. Combining machine learning and numerical simulation for high-resolution PM2.5 concentration forecast. *Environ Sci Technol*. 56:1544-1556. (Corresponding author)

22. Zhao Y, Xi M, Zhang Q, Dong Z, Ma M, Zhou K, Xu W, Xing J, Zheng B, Wen Z, Liu X, Nielsen C, Liu Y, Pan Y, Zhang L. Decline in bulk deposition of air pollutants in China lags behind reductions in emissions. 2022. *Nat Geosci*. 15:190-195.

23. Zhu Q*, Bi J, Liu X, Li S, Wang W, Zhao Y, Liu Y. 2022. Satellite-based long-term spatiotemporal patterns of surface ozone concentrations in China: 2005-2019. *Environ Health Perspect*. 130(2): 027004. PMID: 35138921, PMCID: PMC8827621. (Corresponding author)

24. Liao J*, Liu Y, Steenland K, Pillarisetti A, Thompson L, Dey S, Balakrishnan K, Clasen T. 2022. Child Survival and Early Lifetime Exposures to Ambient Fine Particulate Matter in India: A Retrospective Cohort Study. *Environ Health Perspect*. 130(1): 017009. PMID: 35080433, PMCID: PMC8791069. (Co-corresponding author)

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Book Chapters

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PRESENTATIONS
Invited Presentations in Academic Conferences

1. Liu Y. Satellite Remote Sensing for Air Quality and Health. **HEI's Virtual Workshop on Health Applications for Satellite-Derived Air Quality: Opportunities and Potential Pitfalls.** April 20 – May 18, 2022**.**

2. Liu Y. Field Evaluation Results of an Automated Pollen Sensor. **National Atmospheric Deposition Program (NADP) / Council of State and Territorial Epidemiologists (CSTE) Aeroallergen Monitoring Science Committee Meeting**. Madison, Wisconsin. April 20, 2022.

3. Tong D and Liu Y. Unprecedented Air Quality and Health Effects of the 2020 Western United States Wildfires. AGU GeoHealth Webinar, March 11, 2022.

4. Liu Y. Satellite-based long-term spatiotemporal patterns of surface ozone concentrations in China. **Emory-Nanjing University Joint Workshop on Air pollution, Weather, Climate, Health and Ecosystem (Virtual).** November 9, 2021.

5. Liu Y. Application of GOES-16 and high-resolution meteorology data in estimating hourly PM2.5 levels in California. **Meteorology and Climate Modeling for Air Quality (Virtual)**. September 14 – 17, 2021.

6. Liu Y. The Impact of Climate Change and Emissions Control on Future Ozone Levels in the US. **2021 GA Climate Conference.** Jekyll Island, GA, August 12-13, 2021.

7. Liu Y. Emerging Satellite Instruments and Products for Estimating Air Pollution Exposure. **NIEHS Meeting on Integrating Multiscale Geospatial Environmental Data into Large Population Health Studies (Virtual)**. June 15-16, 2021.

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26. Liu Y. Remote Sensing of PM Air Pollution, Exposure Modeling, and Health Effects. **The 27th Annual ISES Meeting**. Durham, NC, October 15 – 19, 2017.

27. Liu Y. Estimating PM2.5 Components Using Satellite Data and Introduction to MAIA. **The Desert Research Institute.** Reno, NV, September 14, 2017.

28. Liu Y. High-resolution characterization of PM2.5 exposure in China at the regional and national scales. **The 1st China Conference on Environment and Health (CCEH 2017).** Beijing, China, August 24-26, 2017.

29. Liu Y. Estimating PM2.5 speciation concentrations using prototype 4.4 km-resolution MISR aerosol properties over Southern California. **A&WMA's 110th Annual Conference & Exhibition**. Pittsburgh, PA, June 5-8, 2017.

30. Liu Y. Integrating monitoring data from multiple technology platforms. **Air Pollution Monitoring for Health Research and Patient Care Workshop, ATS 2017 International Conference**. Washington DC, May 20, 2017.

31. Liu Y. The application of satellite-based PM2.5 exposure models in China. **The National Center for Cardiovascular Diseases of China**. Beijing, China, March 1, 2017.

32. Liu Y. Recent development of the applications of satellite remote sensing in PM2.5 retrieval. **China National Institute of Environmental Health Sciences**. Beijing, China, December 14, 2016.

33. Liu Y. The future of satellite remote sensing in retrieving PM2.5 in China. **The 1st China Eco-Development Forum**, Beijing, China, December 5 – 7, 2016.

34. Liu Y. How Can TEMPO Contribute to Air Pollution Health Effects Research? **The 1st Tropospheric Emissions: Monitoring of Pollution (TEMPO) Applications Workshop**, Huntsville, AL, July 12-13, 2016.

35. Liu Y. Evaluating Population Health Impacts of Climate Change with Downscaled Model Simulations. **Columbia NIEHS Center for Environmental Health**, New York City, March 11, 2016.

36. Liu Y. Satellite Applications in the Monitoring and Modeling of Atmospheric Aerosols. **Second Suomi NPP Applications Workshop**, Huntsville, Alabama, November 18-20, 2014.

37. Liu Y. An Eye in Space: Satellite Applications in Large-Scale PM$_{2.5}$ Exposure Assessment. **School of Environment, Tsinghua University**, Beijing, China. September 3, 2014.

38. Liu Y. 10-Year Spatial and Temporal Trends of PM$_{2.5}$ in the Southeastern U.S. Estimated Using High-Resolution Satellite Data. **A&WMA's 107th Annual Conference & Exhibition**, Long Beach, CA. June 27, 2014.

39. Liu Y. Satellite-Predicted High-Resolution PM2.5 Maps in the Southeastern U.S. **Work-In-Progress Webinar for the Clean Air Research Centers**, U.S. EPA. May 14, 2014

40. Liu Y. Uncertainties in Estimating the Health Impacts of Climate Change in the United States. **Climate-Ready States and Cities Initiative Grantee Meeting**, Atlanta, GA, April 23 – 25, 2014.

41. Liu Y, Cohen A. Monitoring Particulate Pollution from Space: Current State of the Science. **Conference of ISEE, ISES and ISIAQ**, Basel, Switzerland, August 19 - 23, 2013.

42. Klein M, Hu X, Strickland M, Sarnat S, Tolbert P, **Liu Y**. The Application of Satellite Remote Sensing Data in a Time-Series Study of Asthma Exacerbation in Metro Atlanta. **Conference of ISEE, ISES and ISIAQ**, Basel, Switzerland, August 19 - 23, 2013.

43. Liu Y. Enhancing EPHT with Satellite-Driven PM2.5 Exposure Modeling and Epidemiology. **URISA's Fourth GIS in Public Health Conference,** Miami, FL, June 17 - 20, 2013.

44. Liu Y, and Wang Z. The applications of satellite remote sensing in China's air quality monitoring and environmental health research. **Chinese Research Academy of Environmental Sciences (CRAES),** Beijing, China, May 16, 2013.

45. Liu Y. Environmental Challenges to Public Health in China Today – Regional Air Pollution as an Example, **CDC and ATSDR Asian-Pacific American Heritage Month Commemoration Program,** Atlanta, GA, May 23, 2013.

46. Liu Y. Estimating PM Population Exposure from Satellite Data, **Environmental Forum, Nanjing University, School of Environment**, China, December 22, 2011.

47. **Liu Y** and Cohen A. The Applications of Satellite Remote Sensing in Air Pollution Exposure Sciences and Environmental Health Research and Practice. **The 2011 meeting of the International Society of Exposure Science,** Baltimore, MD, October 24, 2011.

48. **Liu Y**, Hu X, and Waller L. Estimating Ground Level PM2.5 Concentrations in Atlanta Metro Area Using Spatial Statistical Models, **Goldschmidt2011**, Prague, Czech Republic, August 14-19, 2011.

49. Liu Y. Estimating PM Exposure with Satellite Remote Sensing. **HEI's 2011 Annual Conference**, Boston, MA, May 2, 2011.

50. Liu Y. Modeling the Spatial Patterns of $PM_{2.5}$ in Georgia With Satellite Remote Sensing and Meteorological Information. **The 91st Annual Meeting of the American Meteorological Society**, Seattle, WA, January 25, 2011.

51. **Liu Y** and Wang Z. Effects of Aerosol Vertical Profiles on Estimating Particle SO4 Concentrations with MISR AOD. **MISR Science Team Meeting,** Pasadena, CA, December 11, and **American Geophysical Union Fall Meeting,** San Francisco, CA, December 16, 2009.

52. Liu Y. Applications of Satellite Remote Sensing Data in Air Pollution and Public Health Research. **Tsinghua University**, October 15, and **Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences**, Beijing, China, October 18, 2009.

53. Liu Y. Applications of Satellite Remote Sensing Data in Air Pollution and Public Health Research, **NBDPS Workshop: Linking Environmental Exposures to Birth Defects**, Atlanta, GA, September 21, 2009.

54. Liu Y. Estimating PM2.5 Component Concentrations Using MISR Aerosol Microphysical Properties. **MISR Science Team Meeting,** Pasadena, CA, December 11, 2008.

55. Liu Y. Application of remotely sensed aerosol properties to study regional particle pollution in China. **Institute of Remote Sensing Applications, Chinese Academy of Sciences,** Beijing, China, July 30, 2008.

56. **Liu Y** and Koutrakis P. The impact of smoke plumes from the Greek forest fires on the air quality in Athens. **Symposium on Prevention of Disasters and Their Consequences in Greece: Building Partnerships to Mitigate the Effects of Forest Fires**, Athens, Greece, April 8, 2008.

57. **Liu Y** and Koutrakis P. Estimating the Spatial Distribution of $PM_{2.5}$ Concentrations Using Satellite Data and Land Use Information. **Yale School of Public Health, Center for Perinatal, Pediatric and Environmental Epidemiology,** New Haven, CT, December 19, 2007.

58. **Liu Y** and Koutrakis P. Estimating Long-Term $PM_{2.5}$ Exposure in Massachusetts with GOES Aerosol Remote Sensing Data and Assimilated Meteorology. **Harvard-EPA PM Health Center Science Advisory Committee Meeting,** Boston, MA, November 15, 2007.

59. Liu Y. Applications of Satellite Aerosol Remote Sensing in Air Quality Monitoring and Public Health Research. **National Space Science and Technology Center,** Huntsville, AL, October 3, 2007.

60. Paciorek CJ and **Liu Y**. Integrating Satellite and Monitoring Data to Retrospectively Estimate Monthly $PM_{2.5}$ Concentrations in the Eastern U.S., **Health Effects Institute's Annual Conference**, Chicago, IL. April 15, 2007.

61. Liu Y. Remote Sensing of Atmospheric Aerosols and Its Applications in Public Health Research, **Remote Sensing Technology and Applications Workshop, Harvard Center of Geographic Analysis,** Cambridge, MA, February 15, 2007.

62. Liu Y. The Potentials and Challenges of Applying Satellite Aerosol Remote Sensing Data in Air Pollution Monitoring in China, **Tsinghua University and Beijing Normal University,** Beijing, China, January 8, 2007.

63. Liu Y. Estimating $PM_{2.5}$ Concentrations by Combining MISR AOT with GEOS-CHEM Aerosol Simulations, **24th Annual AAAR Conference,** Austin, TX, October 17, 2005.

Presentations in Academic Conferences

1. Bi J, Liu Y. A15O-1880 (poster): Combining machine learning and numerical simulation for high-resolution PM2.5 concentration forecast. **The AGU Fall meeting,** New Orleans, LA, Dec 13 – 17, 2021.

2. Jin Z, Ma Y, Chu L, Liu Y, Dubrow R, Chen K. GH25B-0636 (poster): Predicting spatiotemporally-resolved mean air temperature over Sweden from satellite data using an ensemble model. **The AGU Fall meeting,** New Orleans, LA, Dec 13 – 17, 2021.

3. Diner D, Whitten K, Hasheminassab S, Krasowsky T, Asfaw A, Blair J, Dillner A, Hall J, Kleidman R, Holben B, Liu Y, L'Orange C, Martin R, Walsh B, and the MAIA Team. A51C-02 (oral): Development Status of the Multi-Angle Imager for Aerosols (MAIA) Surface-Based Particulate Matter Measurement Network. **The AGU Fall meeting,** New Orleans, LA, Dec 13 – 17, 2021.

4. Zhang D, Du L, Wang W, Zhu Q, Bi J, Scovronick N, Naidoo M, Garland R, Liu Y. A35G-1710 (poster): A machine learning model to estimate ambient PM2.5 concentrations in industrialized highveld region of South Africa. **The AGU Fall meeting,** New Orleans, LA, Dec 13 – 17, 2021.

5. Hang Y, Liu Y. Particulate nitrate air pollution in China remains a considerable health problem. GH11A-04 (oral): **The AGU Fall meeting,** New Orleans, LA, Dec 13 – 17, 2021.

6. Stowell J, Wang L, Zhu Q, Chang H, Fu J, Scovronick N, Strickland M, Liu Y. GH016-04 (eLightning talk): Excess Asthma Events from Future Wildfires in the Western US: A Health Impact Assessment. **The AGU Fall meeting** (online). Dec 1 – 17, 2020.

7. Bi J, Wallace L, Sarnat J, Liu Y. GH016-02 (eLightning talk): Characterizing infiltration and indoor contribution of PM2.5 based on volunteer-generated monitoring data at large spatial and temporal scales. **The AGU Fall meeting** (online). Dec 1 – 17, 2020.

8. He M, Kinney P, Fiore A, Do V, Jin X, Liu S, DeFelice N, Bi J, Liu Y, Insaf T, Kioumourtzoglou M. GH009-04 (poster): Short-term PM2.5 and cardiovascular admissions in NY State: assessing sensitivity to exposure model choice. **The AGU Fall meeting** (online). Dec 1 – 17, 2020.

9. Liu Y, Geng G, Meng X, Chang H, Diner D. A111-0012 (poster): Using MAIA Data to Investigate PM Health Effects in Selected Urban Areas Around the World. **The AGU Fall meeting** (online). Dec 1 – 17, 2020.

10. Li Q, Xu M, Zhu Q, Liu Y. A066-0004 (poster): Estimating the impact of COVID-19 on the PM2.5 levels in China with a satellite-driven machine learning model. **The AGU Fall meeting** (online). Dec 1 – 17, 2020.

11. Liu Y, Wang W, Le S, Lee S, Zhu Q. A008-0008 (poster): Estimating Hourly PM2.5 Concentrations from 2015 – 2018 in South Korea Using GOCI AOD. **The AGU Fall meeting** (online). Dec 1 – 17, 2020.

12. Vu B, Bi J, Huff A, Kondragunta S, Liu Y. A008-0002 (poster): GOES16-Based Estimation of Hourly PM2.5 Levels during the Camp Fire Episode in California. **The AGU Fall meeting** (online). Dec 1 – 17, 2020.

13. Liu Y, Xiao Q, Liang F, Ning M, Zhang Q, Bi J, He K, Lei Y. GH009-02 (oral): Long-term trend of PM2.5-related mortality burden in China. **The AGU Fall meeting** (online). Dec 1 – 17, 2020.

14. Xu M, Li Q, Zhu Q, Liu X, Liu Y. A005-0007 (poster): Using TROPOMI-Based Estimation of Daily Ozone Levels to Assess the Impact of COVID-19 on Ozone Concentrations in China. **The AGU Fall meeting** (online). Dec 1 – 17, 2020.

15. Wang W, Liu X, Liu Y. A114-0003 (poster): A machine learning model to estimate ground ozone concentration in California, using TROPOMI Satellite Data. **The AGU Fall meeting** (online). Dec 1 – 17, 2020.

16. Diner D, Burke K, Pearson J, Boland S, Bruegge C, van Harten G, Jovanovic V, Hansen E, Bator L, Gluck S, Verhulst-Whitten K, Hasheminassab S, Martin R, Liu Y, Xu F, Wang J, and the MAIA Science and Investigation Team. A029-02 (oral): MAIA: An Integrated Satellite, Surface Monitor, and Chemical Transport Model-Based System for Mapping Speciated Airborne Particulate Matter. **The AGU Fall meeting** (online). Dec 1 – 17, 2020.

17. Bi J, Wallace L, Sarnat J, Liu Y. Characterizing infiltration and indoor contribution of PM2.5 based on volunteer-generated monitoring data at large spatial and temporal scales. **The AAAR 38th Annual Conference** (online). October 5-9, 2020.

18. Reuther P, Geng G, Liu Y, Darrow L, Strickland M. Associations between satellite-derived estimates of PM2.5 species concentrations and birth weight in California. The ISEE 2020 Virtual Meeting. August 14 – 17, 2020.

19. Liao J, Liu Y, Pillarisetti A, Clasen T, Steenland K. Model-based exposure to ambient fine particulate matter is associated with infant mortality and child health outcomes among over 200,000 children in India. **The AGU Fall Meeting**. San Francisco, CA, December 9-13, 2019.

20. Bi J, Wildani A, Chang H, Liu Y. Incorporating low-cost sensor measurements into high-resolution PM2.5 modeling in a large spatial scale (poster presentation). **The AGU Fall Meeting**. San Francisco, CA, December 9-13, 2019.

21. Liu Y. Statistical Power and Health Studies from NASA's Multi-Angle Imager for Aerosols (MAIA). **The 99th AMS Annual Meeting**, Phoenix, AZ, Jan 6-10, 2019.

22. Huang K, Bi J, Meng X, Geng G, Wang Y, Lyapustin A, Kinney P, Lane K, Liu Y. Estimating PM2.5 in New York City at 100-m Resolution Using MAIAC AOD: Lessons Learned on Integrating Non-regulatory Measurements. **The 99th AMS Annual Meeting**, Phoenix, AZ, Jan 6-10, 2019.

23. She Q, Liu M, Liu Y. GOCI-Based Estimation of Hourly PM2.5 Levels During Heavy Winter Pollution Episodes in the Yangtze River Delta - Implications for ABI and AHI. **The AGU Fall Meeting**, Washington DC, Dec 10 – 14, 2018.

24. Geng G, Murray N, Tong D, Fu J, Hu X, Lee P, Meng X, Chang H, Liu Y. Satellite-based daily PM2.5 estimates during fire seasons in Colorado (Poster presentation). **The AGU Fall Meeting**, Washington DC, Dec 10 – 14, 2018.

25. Diner D, Brauer M, Garay M, Hasheminassab S, Jerrett M, Kalashnikova O, Liu Y, Martin R, Nastan A, Ostro B, Ritz B, Schwartz J, Verhulst K, Wang J, Xu F. Associating Speciated Fine Particulate Matter with Adverse Health Outcomes in the Multi-Angle Imager for Aerosols (MAIA) Investigation (Poster presentation). **The AGU Fall Meeting**, Washington DC, Dec 10 – 14, 2018.

26. Geng G, Murray N, Chang H, Liu Y. The sensitivity of satellite-based PM2.5 estimates to its inputs: implications to model development in data-poor regions (Poster presentation). **The AGU Fall Meeting**, Washington DC, Dec 10 – 14, 2018.

27. Meng X, Hand J, Schichtel B, Liu Y. Space-time trends of PM2.5 constituents in the Conterminous United States estimated by a machine learning approach, 2005-2015. (Poster presentation). **The AGU Fall Meeting**, Washington DC, Dec 10 – 14, 2018.

28. Stowell J, Strickland M, Chang H, Liu Y. Associations of Wildfire-specific PM2.5 Exposure on Cardiorespiratory Events in Colorado 2011-2014. **The AGU Fall Meeting**, Washington DC, Dec 10 – 14, 2018.

29. Huang K, Xiao Q, Meng X, Geng G, Wang Y, Lyapustin A, Liang F, Gu D, **Liu Y**. Predicting monthly high-resolution PM2.5 concentrations with random forest model in the North China Plain. **The AGU Joint International Network in Geoscience meeting (AJM2018)**, Xi'an, China, October 16 – 20, 2018.

30. She Q, Choi M, Belle J, Xiao Q, Bi J, Huang K, Meng X, Geng G, Kim J, Liu M, Liu Y. Satellite-Based Estimation of Hourly PM2.5 Levels During Heavy Winter Pollution Episodes in the Yangtze River Delta, China. **The AGU Joint International Network in Geoscience meeting (AJM2018)**, Xi'an, China, October 16 – 20, 2018.

31. Liu Y, Xiao Q, Chang H, Geng G. An ensemble machine-learning model to predict historical concentrations in China from satellite data. **The AGU Joint International Network in Geoscience meeting (AJM2018)**, Xi'an, China, October 16 – 20, 2018.

32. Xiao Q, Chen H, Strickland M, Kan H, Chang H, Klein M, Yang C, Meng X, Liu Y. Associations between birth outcomes and maternal PM2.5 exposure in Shanghai: a comparison of three exposure assessment approaches. **The AGU Joint International Network in Geoscience meeting (AJM2018)**, Xi'an, China, October 16 – 20, 2018.

33. Xiao Q, Chang H, Geng G, Liu Y. An ensemble machine-learning model to predict historical PM2.5 concentrations in China from satellite data. **The ISES-ISEE 2018 Joint Annual Meeting**, Ottawa, Canada, August 26 – 30, 2018. (Recipient of ISES-ISEE New Researcher Abstract Award)

34. Vu B, Bi J, Sánchez O, Steenland K, Liu Y. Developing advanced PM2.5 exposure models in Lima, Peru. **The ISES-ISEE 2018 Joint Annual Meeting**, Ottawa, Canada, August 26 – 30, 2018.

35. Meng X, Hand J, Schichtel B, Liu Y. Estimating concentrations of PM2.5 species with random forest algorithm across Continental United States during 2005 -- 2015. (poster). **The ISES-ISEE 2018 Joint Annual Meeting**, Ottawa, Canada, August 26 – 30, 2018.

36. Bi J, Belle J, Wang Y, Lyapustin A, Wildani A, Liu Y. Incorporating Snow and Cloud Fractions in Random Forest To Estimate High Resolution PM2.5 Exposures In New York State. **The ISES-ISEE 2018 Joint Annual Meeting**, Ottawa, Canada, August 26 – 30, 2018.

37. Bi J, Vu B, Wildani A, Wang Y, Lyapustin A, Liu Y. Citywide Validation and Improvement of the MAIAC Aerosol Product in Lima, Peru. **The 27th Annual ISES Meeting**. Durham, NC, October 15 – 19, 2017.

38. Liu Y., Meng X, Diner DJ, and Garay MJ. Estimating particle speciation concentrations using MISR retrieved aerosol properties in southern California. **AGU Fall Meeting**, San Francisco, CA, December 12-16, 2016.

39. Liu Y. Improving satellite-retrieved aerosol microphysical properties using GOCART Data. **ISES Annual Meeting.** Henderson, NV, October 18-22, 2015.

40. Liu Y. A High-Resolution Two-Stage Satellite Model to Estimate PM2.5 Concentrations in China. **AGU Fall Meeting**, San Francisco, CA, December 14-19, 2014.

41. Belle J, Liu Y. In-Depth Evaluation of MODIS C6 AOD Parameters over the CONUS (poster presentation). **AGU Fall Meeting**, San Francisco, CA, December 14-19, 2014.

42. Xiao Q, Holben B, Zhang H, Kim J, Li S, Kondragunta S, Liu Y. Evaluation of VIIRS, GOCI, and MODIS C6 AOD over East Asia (poster presentation). **AGU Fall Meeting**, San Francisco, CA, December 14-19, 2014.

43. Liu Y. Overview of the Satellite-based Approaches to Characterize Ambient Air Pollution. **U.S. EPA Clean Air Research Centers Annual Meeting,** Atlanta, GA. September 18-19, 2014.

44. Liu Y. SCAPE Report: Development of Satellite-driven PM2.5 Models in the Southeastern US. **U.S. EPA Clean Air Research Centers Annual Meeting**, Atlanta, GA. September 18-19, 2014.

45. Li S, Chin M, Garay M, Chen L, Liu Y. Improving MISR-retrieved aerosol properties using GOCART. **AGU Fall Meeting**, San Francisco, CA, December 9-13, 2013.

46. Wang Z, Ma Z, Li S, Xiong X, Li Z, Christiani D, Liu Y. Satellite and Ground Observations of the Severe Air Pollution Episodes in North China in Early 2013. **AGU Fall Meeting**, San Francisco, CA, December 9-13, 2013.

47. Wu J, Zhou Y, Gao Y, Fu JS, Johnson B, Huang C, Kim YM, Liu Y. Uncertainties in estimating future heat wave mortality in the eastern United States. **Conference of ISEE, ISES and ISIAQ**, Basel, Switzerland, August 19 - 23, 2013.

48. Hu X, Liu Y. A Time Series Analysis of PM2.5 Concentrations in the Southeastern U.S. Using MAIAC AOD in a Two-stage Spatial Statistical Model. **Conference of ISEE, ISES and ISIAQ**, Basel, Switzerland, August 19 - 23, 2013.

49. Liu Y. Estimating Ground-Level PM2.5 Concentrations in the Southeastern United States Using MAIAC AOD Retrievals and a Two-Stage Model. **American Thoracic Society International Conference,** Philadelphia, PA, May 17 - 22, 2013.

50. Liu Y, Li S, Szykman J, Schichtel B. Satellite-Observed Trend in PM2.5 Sulfate Levels in the U.S. and its Surrounding Areas. **AGU Fall Meeting**, San Francisco, CA, December 2, 2012.

51. Hu X, Lyapustin A, Wang Y, and Liu Y. Estimating Ground-Level PM2.5 Concentrations in the Southeastern U.S. using MAIAC AOD Retrievals, **ISES Annual Meeting**, Seattle, WA, October 30, 2012.

52. Hu X, and Liu Y. Estimating Ground-Level PM2.5 Concentrations in the Southeastern U.S. using MAIAC AOD Retrievals, **AGU Fall Meeting**, San Francisco, CA, December 4, 2011.

53. Li S, Chen L, and Liu Y. Retrieval of the Haze Optical Thickness in North China Plain using MODIS data, **AGU Fall Meeting**, San Francisco, CA, December 4, 2011.

54. Liu Y, Greenwald R, Sarnat J, Szykman J, Russell T. Intensive Synchronized PM Ground Sampling During the DISCOVER-AQ Campaign, **AGU Fall Meeting** (poster presentation), San Francisco, CA, December 4, 2011.

55. Li S and Liu Y. Joint retrieval of aerosol optical properties over North America using GEOS-Chem and MISR, **the 5th International GEOS-Chem Meeting**, Cambridge, MA, May 2, 2011 (poster presentation).

56. Liu Y, Hu X, Li S. Comparison of the Aerosol Vertical Profiles by GEOS-Chem and CMAQ in the United States, **MISR Data User Symposium** (oral) and **AGU Fall Meeting** (poster presentation)**,** San Francisco, CA, December 15, 2010.

57. Hu X, Waller L, Liu Y. Estimating Ground Level PM2.5 Concentrations in Atlanta Metro Area Using Geographically Weighted Regression, **AGU Fall Meeting,** San Francisco, CA, December 15, 2010. (poster)

58. Zhou Y, Fu J, Levy J, Liu Y. Risk-Based Prioritization Among Air Pollution Control Strategies in Yangtze River Delta (YRD), China, **2010 Joint Conference of ISES & ISEE,** Seoul, Korea, August 31, 2010.

59. Crosson W, Al-Hamdan M, Estes M, Estes S, Garbe P, Hemmings S, Klein M, Liu Y, McClure L, Qualters J, Quattrochi D, Sarnat J, Vaidyanathan A, Wade G. Examining the use of satellite aerosol remote sensing as a potential means to extend the coverage of the CDC National Environmental Public Health Tracking Network, **American Thoracic Society International Conference,** New Orleans, LA, May 19, 2010.

60. Pachon J, Balachandran S, Trail M, Lee D, Goldman G, Mulholland J, Tolbert P, Sarnat J, Klein M, Strickland M, Sarnat S, Liu Y, Darrow L, Russell T. Quantifying Source Impacts on Particulate Matter and Health Outcomes: Some Problems, Some Advances, A Ways Left to Go, **AAAR's third international specialty conference, "Air Pollution and Health: Bridging the Gap from Sources to Health Outcomes"**, San Diego, CA, March 22, 2010.

61. Liu Y. Enhancing Environmental Public Health Tracking With Satellite-driven Particle Exposure Modeling And Epidemiology, **The AMS Annual Meeting,** Atlanta, GA, January 19, 2010.

62. Liu Y. Estimating Particle Sulfate Concentrations Using MISR Aerosol Properties, **National Environmental Public Health Conference**, Atlanta, GA, October 26, 2009.

63. Liu Y, Schichtel B, Koutrakis P, Estimating SO4 Concentrations Using MISR Retrieved Aerosol Properties, **GEOS-Chem User Meeting**, Cambridge, MA, April 8, 2009.

64. Liu Y, Wang Z, Koutrakis P, Christiani D, Zhao Q, He K, Air Quality in Beijing During the 2008 Olympic Games Observed by Satellites and Ground Monitors, **American Geophysical Union Fall Meeting,** San Francisco, CA, December 10, 2008.

65. Liu Y, Kahn R, Chaloulakou A, Koutrakis P, Multi-sensor Evaluation of the Impact of Forest Fires in August 2007 on the Air Quality in Athens, **EOS Aura Science Team Meeting,** Columbia, MD, October 30, 2008.

66. Liu Y, Paciorek P, Estimating PM2.5 Exposure Using Satellite Remote Sensing, Meteorology, and Land Use Information, The **ISEA / ISEE Joint Annual Conference,** Pasadena, CA, October 16, 2008.

67. Paciorek C, Liu Y, Macias H, Kondragunta S. Spatio-Temporal Associations of MISR and GOES AOD with Ground-Level PM2.5 Concentrations in Eastern US, **AGU Fall Meeting,** San Francisco, CA, December 12, 2007.

68. Liu Y, Kahn R, Turquety S, Yantosca R, Koutrakis P. A Novel Method to Estimate $PM_{2.5}$ Constituent Concentrations and Size Distributions Using Satellite Retrieved Fractional AOD, **Health Effects Institute's Annual Conference,** Chicago, IL, April 15, 2007.

69. Liu Y. A Fractional AOD Approach to Derive PM2.5 Information Using MISR Data Coupled with GEOS-CHEM Aerosol Simulation Results, **the 3rd GEOS-Chem User Meeting,** Cambridge, MA, April 11, 2007.

70. Liu Y, Kahn R, Turquety S, Yantosca R, Koutrakis P. Estimating PM2.5 Speciation and Size Distributions Using MISR Retrieved Aerosol Microphysical Properties, **MISR user science symposium,** Pasadena, CA, December 6, 2006.

71. Franklin M, Liu Y, Koutrakis P. The Importance of Spatial Patterns in Determining the Association Between Satellite-Retrieved AOT and Ground-Level Particulate Matter Air Pollution, **AGU Joint Assembly Meeting,** Baltimore, MD, May 23, 2006.

72. Liu Y, Franklin M, Kahn R, Koutrakis P. Comparing the Capability of MISR and MODIS AOD in Estimating Ground-Level $PM_{2.5}$ Concentrations, **Community Workshop on Air Quality Remote Sensing From Space: Defining an Optimum Observing Strategy, National Center for Atmospheric Research,** Boulder CO, February 21, 2006.

73. Liu Y. Improving Ambient Fine Particle Pollution Monitoring with MISR Aerosol Product, **MISR Science Team meeting,** Pasadena, CA, December 7, 2004.

74. Liu Y. The Application of Satellite Remote Sensing in Estimating Fine Particle Concentrations, **MISR Science Team meeting,** Pasadena, CA, December 15, 2003.

TEACHING

2021-	Emory/RSPH. EH 586: Advanced Seminar in Climate Change and Health: Research and Policy (Course instructor)
2021	Emory/RSPH. EH 590R: R-based quantitative data analysis for environmental health research (Course coordinator)
2020	Emory/RSPH. EH 586: Advanced Seminar in Climate Change and Health: Research and Policy (Course co-instructor)
	Emory/RSPH. EH 501: Introduction to Environmental Health (Guest lecture)
	Emory/RSPH. EH 510: Foundations of Exposure Science (Guest lecture)
	Emory/RSPH. EH 582: Global Climate Change: Health Impacts and Response (Guest lecture)
2019	Emory/RSPH. EH 501: Introduction to Environmental Health (Guest lecture), EH 510: Foundations of Exposure Science (Guest lecture)
2018	Emory/RSPH. EH 590R: Satellite remote sensing for health and environmental research (Course instructor)
2017 -	Emory/RSPH. EH 590R: Intro to EH for EH masters students (Guest lecture)
2015	Emory/RSPH. EH 540: Environmental Hazards I (Course instructor)
	Emory/RSPH. The Humphrey Fellowship Program (Guest lecture)
	Georgia State University, School of Public Health. PH 7155, Air Pollution in the Environment (Guest lecture)
2011-	Emory/RSPH. EH587: Introduction to Satellite Remote Sensing of the Environment and Its Applications in Public Health (Course instructor).
2013	Emory/RSPH. EH515: Air Quality in the Urban Environment: A Survey of Research methods and Recent Findings (Guest lecture)
2013-	Emory/RSPH. HLTH38-EH590: Genome, Exposome, and Health (Guest lecture)
2011-	Emory/RSPH. EH582: Global Climate Change: Health Impacts and Response (Guest lecture)
2010	Emory University, Center for Faculty Development and Excellence, the Institute for Pedagogy in the Liberal Arts Conference on Teaching Methods and Technology (Participant)
	Emory/RSPH. EH 590R: Environmental Health Journal Club (Guest lecture)
2009	Emory/RSPH. EH 590R: Environmental Health Journal Club (Guest lecture)
2008	Harvard University, School of Public Health & Cyprus International Institute, EH297, Atmospheric Environment Seminars (Guest lecturer)
2006	Harvard University, School of Public Health, ID 215, Environmental and Occupational Epidemiology (Discussion leader)
2002	Harvard University, School of Engineering and Applied Sciences, ES 168, Aquatic Chemistry (Teaching Fellow)
1996	Tsinghua University, School of Environment, Engineering Design of Domestic Wastewater Treatment Plants (Teaching Assistant).

Postdoc Fellows

In training   Yun Hang (2020 -), Dimple Pruthi (2021 -), Yuzhi Xi (2021 -)

Completed   Jennifer Stowell (2020 - 2021), Xia Meng (2016-2019), Guannan Geng (2017-2019), Xuefei Hu (2011-2017), Cindy Young (2013-2015), Youngmin Kim (2012-2014), Shenshen Li (2011-2014)

Doctoral Dissertation Committees

Active   Zhihao Jin (GDEH, RSPH, Emory), pre-candidacy faculty advisor
Wenhao Wang (GDEH, RSPH, Emory), pre-candidacy faculty advisor
Qingyang Zhu (GDEH, RSPH, Emory), dissertation advisor
Shrey Gupta (Dept of Computer Science, Emory), committee member

2021   Nancy Murray (Emory, RSPH, Dept. of Biostatistics and Bioinformatics), committee member

Dissertation: *Ambient Air Pollution Estimation Using Bayesian Hierarchical Models*

Bryan Vu (GDEH, RSPH, Emory), chair
Dissertation: Applications of Remote Sensing Data in Air Pollution Modeling and Utilization of Model-Derived Exposure Estimates in Epidemiological Studies

2020 Jianzhao Bi (GDEH, RSPH, Emory), chair
Dissertation: Assessment of High-Resolution PM2.5 Exposures and Changes in PM2.5-Cardiorespiratory Disease Associations Over Time

Jiawen Liao (GDEH, RSPH, Emory), committee member
Dissertation: Advanced Exposure Assessment of Air Pollution and its Effects on Maternal and Child Health in Low-income Settings

2019 Jennifer Stowell (GDEH, RSPH, Emory), chair
Dissertation: Multiple Approaches to Understanding the Intersection of Climate Change, Air Quality & Public Health

Ian Buller (GDEH, RSPH, Emory), committee member
Dissertation: On estimating the spatial distribution of Yersinia pestis in the United States using a wide-ranging sentinel species and spatial statistics with sampling considerations

Keyong Huang (Fuwai Hospital, Chinese Academy of Medical Sciences, China), co-chair with Prof. Dongfeng Gu
Dissertation: Predicting high-resolution PM2.5 concentrations using satellite remote sensing and associations of long-term exposure to ambient PM2.5 with incident hypertension and stroke among Chinese adults

Qiannan She (East China Normal University, China), co-chair with Prof. Min Liu
Dissertation: Studying the Spatiotemporal Patterns of Air Quality as well as Heavy Air Pollution and Their Influencing Factors in the Yangtze River Delta from Multiple Sources of Information

2018 Jessica Bell (GDEH, RSPH, Emory), chair
Dissertation: Advanced gap-filling techniques in satellite-based PM2.5 exposure models and their applications in air pollution epidemiology

Qingyang Xiao (GDEH, RSPH, Emory), chair
Dissertation: The development and application of advanced PM2.5 exposure models driven by satellite data

Heather Strosnider (GDEH, RSPH, Emory), co-chair with Prof. Matthew Strickland
Dissertation: Addressing gaps in the age-specific evidence used for United States air pollution policy

Mariel Friberg (Dept. of Civil and Environmental Engineering, Georgia Tech), committee member
Dissertation: Using Ground-based Observations and Satellite Retrievals to Constrain Urban-to-Regional-Scale Air Quality Chemical Transport Modeling

2017 Fengchao Liang (Health Science Center, Peking University), committee member
Dissertation: A Regional Evaluation on the Spatiotemporal Prediction Models of Ambient PM2.5 and the Effects on Population Mortality

2016 Brooke Alhanti (Dept. of Biostatistics and Bioinformatics, RSPH, Emory), committee member
Dissertation: Methods for Estimating the Effect of Air Pollution on Asthma under a Changing Climate

2015 Zongwei Ma (School of Environment, Nanjing University, China), co-chair with Prof. Jun Bi
Dissertation: Study on Spatiotemporal Distributions of PM2.5 in China Using Satellite Remote Sensing

Xia Meng (School of Public Health, Fudan University, China), committee member
Dissertation: A study of developing air pollution exposure assessment models based on the land use regression model and remote sensing data

2014	Chao Yu (Chinese Academy of Sciences, China), co-chair with Prof. Liangfu Chen
	Dissertation: The application of satellite remote sensing in particulate matter study
2012	Jason Vargo (School of Design, Georgia Tech), committee member
	Dissertation: Planning for the New Urban Climate: Interactions of Local Environmental Planning and Regional Extreme Heat

Master's Thesis Committees at Emory

Year	
2022	Stephanie Kay (EH), faculty advisor; Lauren Sullivan (EH), faculty advisor
2021	Thora Middleton (EH), faculty advisor; Qiulun Li (EH), faculty advisor; Muwu Xu (EPI), committee member
2020	Linlin Du (EH), chair; Stefano Rosillo (EH), faculty advisor; Wenhao Wang (EH), chair; Ashley Keese (EH), faculty advisor
2019	Jiachen Zhang (EH), faculty advisor;
2018	Katie Lynch (EH), field advisor; Bryan Vu (EH), chair
2017	Lois Chang (EH), chair
2016	Grete Wilt (EH), chair; Shuang Wang (EH), chair; Erin Finestone (EH), field advisor; Jennifer Shriber (EH), field advisor
2015	Liansai Dong (EH), chair; Marie Russell (EH), chair; Jennifer Stowell (EH), chair
2014	Qingyang Xiao (EH), chair; Kaytna Thaker (EH), chair
2013	Xueying Zhang (EPI), field advisor; Elizabeth Ervin (EH), chair; Christina Wu (EH), chair
	Takahiro Goto (EH), chair
2012	Rahul Gondalia (EH), chair; Deanna Kristine Tollefson (EH), chair

Undergraduate Honors Thesis Committees at Emory

2022	Haoran Cheng, College of Arts and Science, Committee member

Visiting PhD Students and Scholars

2019-2021	Kuo Zhang, Tsinghua University, China
2018-2019	Lin Wang, Institute of Urban Environment, Chinese Academy of Sciences, China
	Tian Qiu, National Center for Environmental Health, Chinese CDC, China
2017-2018	Keyong Huang, Chinese Academy of Medical Sciences and Peking Union Medical College, China
	Qiannan She, East China Normal University, China
2015-2016	Fengchao Liang, Peking University Health Science Center, China
2014-2015	Xia Meng, Fudan University, School of Public Health, China
2011-2013	Zongwei Ma, Nanjing University, School of Environment, China
2011-2013	Chao Yu, Institute of Remote Sensing and Digital Earth (RADI), Chinese Academy of Sciences
2009-2010	Zifeng Wang, Institute of Remote Sensing and Digital Earth (RADI), Chinese Academy of Sciences

SERVICE

Service to Emory University
Committee Participation

2019-2020	SPH Appointments, Promotion and Tenure (APT) Committee (member)
2019-2020	earch Committee for the Chair of the Department of Biostatistics and Bioinformatics (member)
2018-2020	SPH Computation and Data Science Advisory Group (member)
2018-	SPH Research Advisory Committee (member)
2015-2018	Iniversity Senate Committee on the Environment (member)
2013-2018	SPH Committee on Community and Diversity (member)
2010-2012	SPH IT Advisory Committee (member)
2009-2018	SPH Shepard Award Committee for Best Master's Thesis (member; chair, 2014)

Miscellaneous Talks

1. **Liu Y**. Air Quality Monitoring From Space: Local to Global. RSPH Public Health Grand Rounds. April 20, 2012.

Service to Profession

Editorial Board

2019-	Associate editor, *Remote Sensing*
2018-	Associate editor, *Frontiers in Environmental Informatics*
2016-	Associate editor / Editorial board member, *Journal of Exposure Science And Environmental Epidemiology*
2013-	Associate editor, *Frontiers in Environmental Health*
2016-2017	Guest editor, *Remote Sensing,* special issue on Remote Sensing of Atmospheric Pollution
2014-2015	Guest editor, *Advances in Meteorology*, special issue on Atmospheric Compositions: Satellite Observation and Applications on Air Quality and Climate Study

Expert Panel

2018-2021	Member, Science Community Committee, A-CCP Mission Pre-formulation Study, NASA Earth Science Division
2014-	Global Burden of Disease Expert, Ambient Particulate Matter Pollution
2013-2016	Scientific Steering Group member, WHO Department of Public Health and Environment, Global Platform on Air Quality and Health Project

Conference Organization

2022	Reviewer, The AGU GeoHealth Elevator Pitch Competition
2022	Abstract reviewer, The ISES 2022 annual meeting, September 25-30, 2022, Lisbon, Portugal.
2022	Session 3 co-chair and Session 4 panelist, HEI's Virtual Workshop on Health Applications for Satellite-Derived Air Quality: Opportunities and Potential Pitfalls. April 20 – May 18, 2022**.**
2020	Co-convener, GH003 - Current Methods and Challenges to Characterize the Impacts of Climate Change on Human Health (eLightning session). AGU Fall Meeting 2020 (online).
2019	Co-chair, Session 6. New Directions for Satellite Data: Applications in Health, Air Quality, Environmental Management, and Public Outreach. The 10th Conference on Environment and Health. American Meteorological Society 99th annual meeting. Jan 6 – 10, Phoenix, AZ.
2018	Co-chair, Session A077-I. New Directions for Open-Source Air Quality Data: Applications in Health, Air Quality, Environmental Management, and Public Outreach I. The AGU Fall meeting, December 10 – 14, Washington, DC.
2017	Co-chair, Session A110. Multi-sensor, Model, and Measurement Synergy: Regional-to-Global Aerosol Change Detection, and Observed Changes" and A21G. Multi-sensor, Model, and Measurement Synergy: Regional-to-Global Aerosol Change Detection, and Observed Changes II Posters". The AGU Fall meeting, December 11 – 15, New Orleans, Louisiana.
2017	Member, Technical Organizing Committee, ISES Annual Meeting, October 1-19, RTP, NC.
2013	Co-chair. Symposium Remote sensing approaches to estimate air pollution exposure for disease burden and epidemiology. The Conference of ISEE, ISES and ISIAQ, August 19 -24, Basel, Switzerland
2011	Co-chair. Symposium The applications of satellite remote sensing in air pollution exposure sciences and environmental health research and practice. The ISES 2011 annual meeting, October 23-27, 2011, Baltimore, MD.
	Co-host. Pre-conference workshop Applications of Satellite Remote Sensing in Air Pollution Exposure Science. The ISES 2011 annual meeting, October 23-27, 2011, Baltimore, MD.

Peer Review Activities for Funding Agencies

2022	Ad hoc reviewer for NIH IRAP study section. March 7 – 8.
2021	Ad hoc reviewer for NASA ROSES 2020 A.23: Atmospheric Composition Campaign Data Analysis and Modeling (NNH20ZDA001N-ACCDAM)
2017	Ad hoc reviewer for NIH P01 proposals responding to RFA-ES-16-009: Centers for Oceans and Human Health 3: Impacts of Climate Change on Oceans and Great Lakes (COHH3)
2017	Ad hoc reviewer for the Health Effects Institute
2015	Ad hoc reviewer for the U.S. EPA RFA EPA-G2014-STAR-K1: Air Pollution Monitoring for Communities
2014	Ad hoc reviewer for the Health Effects Institute, and the National Science Foundation (AGS - GEO/ATM - Atmospheric Chemistry)

2014, 2015	Ad hoc reviewer for Environmental and Health Fund, Israel
2013	Ad hoc reviewer for the Special Emphasis Panel for NIH R21 proposals responding to "PAR-10-235: Climate Change and Health"
2012	Ad hoc reviewer for NIH R01 proposals responding to RFA-ES-11-013: the Centers for Oceans and Human Health, and the Oceans, Great Lakes, and Human Health
2010	Ad hoc reviewer for NASA Applied Science Program (ROSES 2010), the Canadian Natural Sciences and Engineering Research Council (NSERC) and the Canadian Institutes of Health Research (CIHR)

Peer Review Activities for Journals

Ad hoc reviewer for Aerosol and Air Quality Research; Air Quality, Atmosphere and Health; Atmospheric Chemistry and Physics; Atmospheric Environment; Atmospheric Pollution Research; Atmospheric Research; Atmospheric Science Letters; Egyptian Journal of Remote Sensing and Space Sciences; Environment International; Environmental Health; Environmental Health Perspectives; Environmental Research; Environmental Research Letters; Environmental Science and Technology; Epidemiology; Frontiers of Medicine; Geophysical Research Letters; International Journal of Health and Geographics; International Journal of Environmental Research and Public Health; IEEE Transactions on Geoscience and Remote Sensing; Journal of Aerosol Science; Journal of Geophysical Research – Atmosphere; Journal of Applied Meteorology & Climatology; Journal of Applied Remote Sensing; Journal of Environmental Management; Journal of the Air & Waste Management Association; Pediatric Research, Remote Sensing; Nature Geoscience; Nature Human Behavior; Remote Sensing of Environment; Science; Science Bulletin; Science of the Total Environment; Scientific Reports.

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS AND SOCIETIES

2020 -	American Association for the Advancement of Science (AAAS), member
2012 – 2014	NASA Applied Remote SEnsing Training (*ARSET*), instructor
2008 –	International Society of Exposure Science (ISES), member
2004 –	American Geophysical Union (AGU), member
2010 – 2011	American Meteorological Society (AMS), member
2005 – 2006	American Association for Aerosol Research (AAAR), member
2007	NASA DEVELOP student team, Science Advisor
2007 – 2013	Earth & Sky, National Public Radio, Global Science Advisor