

Curriculum Vitae  
**Yang Liu, PhD**

Department of Environmental Health  
Emory University, Rollins School of Public Health  
1518 Clifton Road NE, CNR Bldg 2031  
Atlanta, GA 30322

yang.liu@emory.edu  
Tel: (404) 7272131  
Fax: (404) 7278744

---

**EDUCATION**

- 2004 Harvard University, Graduate School of Arts and Sciences  
PhD, Environmental Sciences and Engineering (Advisor: Prof. Peter Rogers)
- 1999 University of California at Davis  
MS, Mechanical Engineering (Advisor: Prof. Ian Kennedy)
- 1997 Tsinghua University  
BS, Environmental Sciences and Engineering (Advisors: Profs. Lixin Fu and Kebin He)

**PROFESSIONAL EXPERIENCE**

**Academic Appointments**

- 2014- Associate Professor with Tenure  
Department of Environmental Health  
Emory University, Rollins School of Public Health, Atlanta, GA
- 2009-2013 Assistant Professor  
Department of Environmental Health  
Emory University, Rollins School of Public Health, Atlanta, GA
- 2007-2008 Research Associate  
Harvard University, School of Public Health, Boston, MA
- 2005-2007 Postdoctoral Research Fellow  
Harvard University, School of Public Health, Boston, MA
- 1999-2004 Graduate Research Assistant  
Harvard University, School of Engineering and Applied Sciences, Cambridge, MA
- 1998-1999 Graduate Research Assistant  
University of California, Davis, CA

**Other Professional Positions**

- 2004-2005 Associate Consultant  
ENVIRON International Corporation, Arlington, VA
- 05-07/2001 Intern  
The World Bank Group, Washington, DC
- 1997-1998 Associate consultant  
Environmental Resources Management (ERM) Group, Beijing, China

## **HONORS, FELLOWSHIPS, AND AWARDS**

- 2013- 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 Health Tracking Branch)
- 2010 Fund for Innovative Teaching (FIT), 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 First-class Outstanding Student Scholarship, Tsinghua University
- 1995
- 1997

## **RESEARCH FUNDING**

### **Principal Investigator**

- 2014-2017 NASA ROSES 2013, solicitation A.17 - Aura Science Team: Evaluate, Enhance, and Apply Aura Products in Public Health Tracking (Grant # NNX14AG01G)  
Funder: NASA  
Total Direct Costs: \$514,262  
Total Indirect Costs: \$162,921
- 2011-2014 Uncertainties in Modeling Spatially-Resolved Climate Change Health Impacts (Grant # 1R21ES020225)  
Funder: NIH  
Total Direct Costs: \$275,000  
Total Indirect Costs: \$151,250
- 2011-2016 NASA Research Opportunities in Space and Earth Sciences (ROSES) 2009, Solicitation A.32 - Air Quality Applied Sciences Team: Improving Satellite Aerosol Remote Sensing Data for Air Pollution Health Research (Grant # NNX11AI53G)  
Funder: NASA  
Total Direct Costs: \$655,410  
Total Indirect Costs: \$ 229,539

- 2009-2013 Assessing the Cumulative Climate-Related Health Risks in the Eastern U.S. (Cooperative agreement # 1 U01 EH000405)  
 Funder: CDC  
 Total Direct Costs: \$647,431  
 Total Indirect Costs: \$ 230,489
- 2009-2013 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  
 Total Direct Costs: \$393,577  
 Total Indirect Costs: \$216,456
- 2009-2014 Improving MISR's Capability of Predicting Ground Level PM<sub>2.5</sub> Concentrations with Observed Aerosol Vertical Profiles (Contract # 1363692)  
 Funder: NASA Jet Propulsion Laboratory  
 Total Direct Costs: \$163,441  
 Total Indirect Costs: \$89,890
- 2009-2010 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  
 Total Direct Costs: \$85,260  
 Total Indirect Costs: \$26,963

**Co-Investigator**

- 2013-2015 Statistical Methods for Exposure Uncertainty in Air Pollution and Health Studies (Grant # 1R21ES022795)  
 Funder: NIH  
 Total Direct Costs: \$247,932  
 Total Indirect Costs: \$196,839  
 Principal Investigator: Howard Chang (Emory University)  
 Role: Co-investigator (10% effort)
- 2012-2014 NASA Applied Remote SEnsing Training (ARSET) air quality project (Contract # 0000011758)  
 Funder: NASA via University of Maryland  
 Total Direct Costs: \$20,118  
 Total Indirect Costs: \$7,846  
 Principal Investigator: Ana Prados (University of Maryland)  
 Role: Co-investigator (8% effort)
- 2011-2016 Spatial and temporal modeling of PM<sub>2.5</sub> and infant morbidity (Grant # 1R01ES019897)  
 Funder: NIH  
 Principal Investigator: Veronica Vieira (UC Irvine)  
 Total Direct Costs of Emory contract: \$266,724  
 Role: Co-Investigator (5% effort)
- 2011-2014 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  
Total Direct Costs of Emory contract: \$39,715  
Total Indirect Costs of Emory contract: \$21,843  
Principal Investigator: Jun Wang (University of Nebraska-Lincoln)  
Role: PI of Emory subcontract (10% effort)

2010-2015 The Emory/Georgia Tech Collaborative: Multi-Scale Assessment of Health Effects of Air Pollution Mixtures Using Novel Measurements and Models (Grant # D83479901)  
Funder: USEPA  
Total Costs: \$7,999,779  
Principal Investigator: Paige Tolbert (Emory) and Ted Russell (Georgia Tech)  
Role: Co-Investigator (10% effort)

2009-2013 Effect of Air Pollution and Traffic on Birth Outcomes (Grant # R01ES016317/A07290)  
Funder: NIH  
Total Direct Costs of Emory contract: \$59,032  
Total Indirect Costs of Emory contract: \$32,467  
Principal Investigator: Kathy Belanger and Michelle Bell (Yale University)  
Role: PI of Emory subcontract (5% effort)

2010-2011 Application of Satellite Aerosol Remote Sensing Technology to Estimate the Health Impacts of Airborne Particles  
Funder: Harvard NIEHS Center for Environmental Health Pilot Program  
Total Costs: \$25,000  
Principal Investigator: Zhaoxi Wang (Harvard University)  
Role: Collaborator

2008-2009 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  
Total Costs: \$25,000  
Principal Investigator: David Christiani and Petros Koutrakis (Harvard University)  
Role: Co-investigator

2006-2009 Integrating satellite and monitoring data to retrospectively estimate monthly PM2.5 concentrations in the eastern United States  
Funder: Health Effects Institute  
Total Costs: \$300,000  
Principal Investigator: Chris Paciorek (Harvard University)  
Role: Co-Investigator (10% effort)

#### **PROPOSALS UNDER REVIEW**

BIGDATA: IA: DKA: Collaborative Research: When Big Data Meets Air Quality: Opportunities and Challenges  
Funder: NSF (NSF 14-543)  
Principal Investigator: Yifang Zhu (UCLA)  
Role: Co-Investigator

Enhancing the Environmental Health and Air Quality Decision Support in California with NASA Earth Observations and Models  
Funder: NASA (Science Mission Directorate Solicitation: NNH13ZDA001N-HEALTH)

Role: Principal Investigator

Improving Global-Scale Air Quality and Health Decision Support Systems with NASA Science

Funder: NASA (Science Mission Directorate Solicitation: NNH13ZDA001N-HEALTH)

Role: Principal Investigator

Enhancement of a Bottom-up Fire Emissions Inventory Using Earth Observations to Improve Air Quality, Land Management, and Public Health Decision Support

Funder: NASA (Science Mission Directorate Solicitation: NNH13ZDA001N-HEALTH)

Principal Investigator: Uma Shankar (UNC)

Role: Co-investigator

NASA Earth Observations Improve National Air Pollution Forecasting Capability

Funder: NASA (Science Mission Directorate Solicitation: NNH13ZDA001N-HEALTH)

Principal Investigator: Pius Lee (NOAA)

Role: Co-investigator

Enhancing SOVAT Decision Support System for Environmental Public Health Tracking of Asthma and Cardiovascular Diseases

Funder: NASA (Science Mission Directorate Solicitation: NNH13ZDA001N-HEALTH)

Principal Investigator: Mohammad Al-Hamdan (USRA/MSFC)

Role: Co-investigator

Wildfires in the Rocky Mountains Region: Current and Future Impacts on PM<sub>2.5</sub>, Health, and Policy

Funder: EPA (Funding Opportunity Number: EPA-G2014-STAR-G1)

Principal Investigator: Yang Liu

Role: Principal Investigator

Evaluate and Enhance Suomi NPP Products for Air Quality and Public Health Applications

Funder: NASA (Science Mission Directorate Solicitation: NNH13ZDA001N-SNPP)

Principal Investigator: Jun Wang (University of Nebraska - Lincoln)

Role: PI of Emory subcontract

Associating airborne particle types with adverse health outcomes using the Multi-Angle Imager for Aerosols

Funder: NASA (Announcement of Opportunity NNH12ZDA006O-EVI2)

Principal Investigator: David Diner

Role: PI of Emory subcontract

### **OVERSEAS 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: Co-Investigator

2014–2017      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: Co-Investigator

## PUBLICATIONS

### Peer-Reviewed Articles (Student/postdoc authors indicated with an asterisk)

1. Wang Z, Chen L, Tao J, **Liu Y**, Hu X, Tao M. 2013. An empirical method of RH correction for satellite estimation of ground-level pm concentrations. *Atmos Environ*. In press.
2. Ma Z\*, Hu X, Huang L, Bi J, **Liu Y**. Estimating ground-level PM<sub>2.5</sub> in China using satellite remote sensing. 2014. *Environ. Sci. Technol*. dx.doi.org/10.1021/es5009399.
3. Duncan B, Prados A, Lamsal L, **Liu Y**, Streets D, Gupta P, Hilsenrath E, Kahn R, Beyersdorf A, Burton S, Fiore A, Fishman J, Henze D, Holben B, Hostetler C, Krotkov N, Lee P, Lin M, Pfister G, Pickering K, Pierce B, Yoshida Y, Ziemba L. Satellite Data for U.S. 2014. Air Quality Applications: Examples of Applications, Answers to FAQs, and Common Mistakes to Avoid. *Atmos. Env*. In press.
4. Xu Z, **Liu Y**, Ma Z, Toloo G, Hu W, Tong S. Assessment of the temperature effect on childhood diarrhea using satellite imagery. 2014. *Scientific Reports*. In press.
5. Yu C\*, Chen L, Zhang X, Girolamo LD, **Liu Y**. 2014. Effects of MODIS-retrieved Cloud Properties on PM<sub>2.5</sub> Levels in the Southeastern United States. *J Expo Sci Environ Epidemiol*. In press.
6. Xu Z, **Liu Y**, Ma Z, Toloo G, Hu W, Tong S. 2014. Impact of temperature on childhood pneumonia estimated from satellite remote sensing. *Environmental Research*. In press.
7. Kim Y\*, Kim S, **Liu Y**. 2014. Estimation of heat-related mortality attributable to climate change in six cities, South Korea. *Frontiers in Environ. Sci*. DOI: 10.3389/fenvs.2014.00003.
8. **Liu Y**. 2014. Monitoring PM<sub>2.5</sub> from Space for Health: Past, Present, and Future Directions. *EM*. Pp 6-10.
9. Li S\*, Chen L, Garay M, **Liu Y**. 2014. Comparison of GEOS-Chem aerosol optical depth with AERONET and MISR data over the contiguous United States. *J Geophys Res-Atmos*. 118:1-14.
10. Hu X\*, Waller LA, Lyapustin A, Wang Y, Al-Hamdan MZ, Crosson WL, Estes MG, Estes SM, Quattrochi DA, Puttaswamy SJ, **Liu Y**. 2014. Estimating Ground-Level PM<sub>2.5</sub> Concentrations in the Southeastern United States Using MAIAC AOD Retrievals and a Two-Stage Model. *Remote Sens Environ*. 140:220-232.
11. Chang HH, Hu X, **Liu Y**. 2013. Calibrating MODIS Aerosol Optical Depth for Predicting Daily PM<sub>2.5</sub> Concentrations via Statistical Downscaling. *J Expo Anal Environ Epidemiol*. DOI:10.1038/jes.2013.90.
12. Huang L, Zhou Y, Han Y, Hammitt J, Bi J, **Liu Y**. 2013. The Effect of the Fukushima Nuclear Accident on the Risk Perception of Residents near a Nuclear Power Plant in China. *PNAS*. DOI: 10.1073/pnas.1313825110.
13. Wu J, Zhou Y, Gao Y, Fu JS, Johnson B, Huang C, Kim Y, **Liu Y**. 2013. Estimation and Uncertainty Analysis of Impacts of Future Heat Waves on Mortality in the Eastern United States. *Environ Health Perspect*. DOI:10.1289/ehp.1306670.
14. Hu X\*, Waller LA, Lyapustin A, Wang Y, **Liu Y**. 2013. 10-Year Spatial and Temporal Trends of PM<sub>2.5</sub> Concentrations in the Southeastern U.S. Estimated Using High-Resolution Satellite Data. *Atmos Chem Phys*. In press.
15. Dhingra R, Jimenez V, Chang HH, Gambhir M, **Liu Y**, Remais JV. 2013. Spatially-explicit simulation modeling of ecological response to climate change: methodological considerations in predicting shifting population dynamics of infectious disease vectors. *ISPRS International Journal of Geo-Information*. 2:645-664.
16. Gao Y, Fu JS, Drake JB, Lamarque JF, **Liu Y**. 2013. The impact of emissions and climate change on ozone in the United States under Representative Concentration Pathways (RCPs). *Atmos Chem Phys*. 13:9607-9621.

17. Zhou Y, Hammitt J, Fu JS, Gao Y, **Liu Y**, Levy JI. 2013. Major Factors Influencing the Control of Air Pollutants with Non-Linear Chemistry: An Application to China. *Risk Analysis*. DOI: 10.1111/risa.12106.
18. Puttaswamy SJ, Nguyen H, Braverman A, Hu X, **Liu Y**. 2013. Statistical Data Fusion of Multi-sensor AOD over the Continental United States. *Geocarto International*. DOI: 10.1080/10106049.2013.827750.
19. **Liu Y**. 2013. New Directions: Satellite driven PM<sub>2.5</sub> exposure models to support targeted particle pollution health effects research. *Atmos Environ*. 68:52-53.
20. Kim M, Zhang X, Holt J, **Liu Y**. 2013. Spatio-temporal variations in the associations between hourly PM<sub>2.5</sub> and Aerosol Optical Depth (AOD) from MODIS sensors on Terra and Aqua. *Health*. 5:8-13.
21. Hu X\*, Waller LA, Al-Hamdan MZ, Crosson WL, Estes Jr MG, Estes SM, Quattrochi DA, Sarnat JA, **Liu Y**. 2013. Estimating ground-level PM<sub>2.5</sub> concentrations in the southeastern U.S. using geographically weighted regression. *Environ Res*. 121:1-10.
22. Li S\*, Chen L, Xiong X, Tao J, Su L, Han D, **Liu Y**. 2013. Retrieval of the Haze Optical Thickness in North China Plain Using MODIS Data. *IEEE Trans Geosci Remote Sens*. 51:2528-2540.
23. Wang ZX, **Liu Y**, Hu M, Pan XC, Shi J, Chen F, He KB, Koutrakis P, Christiani DC. 2013. Acute health impacts of airborne particles estimated from satellite remote sensing. *Environ Int*. 51:150-159.
24. Streets DG, Canty T, Carmichael GR, de Foy B, Dickerson RR, Duncan BN, Edwards DP, Haynes JA, Henze DK, Houyoux MR, Jacob DJ, Krotkov NA, Lamsal LN, **Liu Y**, Lu Z, Martin RV, Pfister GG, Pinder RW, Salawitch RJ, Wecht KJ. 2013. Emissions estimation from satellite retrievals: A review of current capability. *Atmos Environ*. 77:1011-1042.
25. **Liu Y**, He K, Li S, Wang Z, Christiani D, Koutrakis P. 2012. A statistical model to evaluate the effectiveness of PM<sub>2.5</sub> emissions control during the Beijing 2008 Olympic Games. *Environ Int*. 44:100-105.
26. Qu C-S, Ma Z-W, Yang J, **Liu Y**, Bi J, Huang L. 2012. Human Exposure Pathways of Heavy Metals in a Lead-Zinc Mining Area, Jiangsu Province, China. *PLoS ONE*. 7(11):e46793.
27. Gao Y, Fu JS, Drake JB, **Liu Y**, Lamarque JF. 2012. Projected changes of extreme weather events in the eastern United States based on a high resolution climate modeling system. *Environ Res Lett*. 7:Article No. 044025.
28. Wang Y, Li LJ, **Liu Y**. 2012. Characteristics of atmospheric NO<sub>2</sub> in the Beijing-Tianjin-Hebei region and the Yangtze River Delta analyzed by satellite and ground observations (In Chinese). *Huanjing Kexue*. 33:3685-3692.
29. **Liu Y**, Wang ZF, Wang J, Ferrare RA, Newsom RK, Welton EJ. 2011. The effect of aerosol vertical profiles on satellite-estimated surface particle sulfate concentrations. *Remote Sens Environ*. 115:508-513.
30. Li L, **Liu Y**. 2011. Space-borne and ground observations of the characteristics of CO pollution in Beijing, 2000-2010. *Atmos Environ*. 45:2367-2372.
31. Lee HJ, **Liu Y**, Coull BA, Schwartz J, Koutrakis P. 2011. A novel calibration approach of MODIS AOD data to predict PM<sub>2.5</sub> concentrations. *Atmos Chem Phys*. 11:7991-8002.
32. Lin JT, Nielsen CP, Zhao Y, Lei Y, **Liu Y**, McElroy MB. 2010. Recent Changes in Particulate Air Pollution over China Observed from Space and the Ground: Effectiveness of Emission Control. *Environ Sci Technol*. 44:7771-7776.

33. Sarnat JA, Moise T, Shpund J, **Liu Y**, Pachon JE, Qasrawi R, Abdeen Z, Brenner S, Nassar K, Saleh R, Schauer JJ. 2010. Assessing the spatial and temporal variability of fine particulate matter components in Israeli, Jordanian, and Palestinian cities. *Atmos Environ.* 44:2383-2392.
34. Diner DJ, Ackerman TP, Braverman AJ, Bruegge CJ, Chopping MJ, Clothiaux EE, Davies R, Di Girolamo L, Kahn RA, Knyazikhin Y, **Liu Y**, Marchand R, Martonchik JV, Muller JP, Nolin AW, Pinty B, Verstraete MM, Wu DL, Garay MJ, Kalashnikova OV, Davis AB, Davis ES, Chipman RA, Ieee. 2010. Ten Years of MISR Observations from Terra: Looking Back, Ahead, and in Between. In: *IEEE International Symposium on Geoscience and Remote Sensing IGARSS*, 1297-1299.
35. Paciorek CJ, **Liu Y**. 2009. Limitations of Remotely Sensed Aerosol as a Spatial Proxy for Fine Particulate Matter. *Environ Health Perspect.* 117:904-909.
36. **Liu Y**, Chen D, Kahn RA, He KB. 2009. Review of the applications of Multiangle Imaging Spectroradiometer to air quality research. *Science in China Series D-Earth Sciences.* 52:132-144.
37. **Liu Y**, Kahn RA, Chaloulakou A, Koutrakis P. 2009. Analysis of the impact of the forest fires in August 2007 on air quality of Athens using multi-sensor aerosol remote sensing data, meteorology and surface observations. *Atmos Environ.* 43:3310-3318.
38. **Liu Y**, Paciorek CJ, Koutrakis P. 2009. Estimating Regional Spatial and Temporal Variability of PM<sub>2.5</sub> Concentrations Using Satellite Data, Meteorology, and Land Use Information. *Environ Health Perspect.* 117:886-892.
39. **Liu Y**, Schichtel BA, Koutrakis P. 2009. Estimating Particle Sulfate Concentrations Using MISR Retrieved Aerosol Properties. *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing.* 2:176-184.
40. Paciorek CJ, **Liu Y**, Moreno-Macias H, Kondragunta S. 2008. Spatio-temporal associations between GOES aerosol optical depth retrievals and ground-level PM<sub>2.5</sub>. *Environ Sci Technol.* 42:5800-5806.
41. **Liu Y**, Franklin M, Kahn R, Koutrakis P. 2007. Using Aerosol Optical Thickness to Predict Ground-Level PM<sub>2.5</sub> Concentrations in the St. Louis Area: a Comparison Between MISR and MODIS. *Remote Sens Environ.* 107:33-44.
42. **Liu Y**, Kahn R, Koutrakis P. 2007. Estimating PM<sub>2.5</sub> Component Concentrations and Size Distributions Using Satellite Retrieved Fractional Aerosol Optical Depth: Part I - Method Development. *J Air & Waste Manage Assoc.* 57:1351-1359.
43. **Liu Y**, Kahn R, Turquety S, Yantosca RM, Koutrakis P. 2007. Estimating PM<sub>2.5</sub> Component Concentrations and Size Distributions Using Satellite Retrieved Fractional Aerosol Optical Depth: Part II - A Case Study. *J Air & Waste Manage Assoc.* 57:1360-1369.
44. Jiang X, **Liu Y**, Yu B, Jiang M. 2007. Comparison of MISR aerosol optical thickness with AERONET measurements in Beijing metropolitan area. *Remote Sens Environ.* 107:45-53.
45. **Liu Y**, Sarnat JA, Kilaru A, Jacob DJ, Koutrakis P. 2005. Estimating ground-level PM<sub>2.5</sub> in the eastern united states using satellite remote sensing. *Environ Sci Technol.* 39:3269-3278.
46. **Liu Y**, Park RJ, Jacob DJ, Li QB, Kilaru V, Sarnat JA. 2004. Mapping annual mean ground-level PM<sub>2.5</sub> concentrations using Multiangle Imaging Spectroradiometer aerosol optical thickness over the contiguous United States. *J Geophys Res-Atmos.* 109:Art. No. D22206.



47. Liu Y, Sarnat JA, Coull BA, Koutrakis P, Jacob DJ. 2004. Validation of multiangle imaging spectroradiometer (MISR) aerosol optical thickness measurements using aerosol robotic network (AERONET) observations over the contiguous United States. *J Geophys Res-Atmos.* 109:Art. No. D06205.
48. He D, Hao J, Fu L, Zhou Z, Liu Y, Wang Z. 1999. Pollution Assessment in Urban Street Canyons of Macao Using OSPM Model (In Chinese). *ACTA Scientiae Circumstantiae.* 19:256-261.
49. He K, Fu L, Hao J, Liu Y, Yang Z. 1996. Research on Motor Vehicle Exhaust Cleaning in China (In Chinese). *Advances in Environmental Science.* 4:62-69.
50. He K, Hao J, Fu L, Li M, Liu Y. 1996. The Status and Trend of Vehicle Pollution in China (In Chinese). *Huanjing Kexue.* 17:80-83.

#### Peer-reviewed Research Report

1. C. Pariorek and Liu Y, Assessment and Statistical Modeling of the Relationship between Remotely-Sensed Aerosol Optical Depth and PM2.5 in the Eastern United States. Research Report 167. Health Effects Institute, Boston, MA. May 2012.

#### Book Chapters

1. Contributing author to Chapter 6: Data Discovery, Access and Retrieval. *ISPRS Book series: Environmental tracking for public health surveillance.* S. Morain and A. Budge (eds). 2013 Taylor & Francis Group, London, ISBN 978-0-415-58471-5.
2. Contributing author to Chapter 3: Human Health and Climate Change in the Southeast USA. *The National Climate Assessment Regional Technical Input Series: Climate of the Southeast United States.* K. Ingram, K. Dow, L. Carter, and J. Anderson (eds.). Island Press, Washington, DC, ISBN 978-1-61091-439-0.

#### Manuscripts Under Review (Student/postdoc authors indicated with an asterisk)

1. Hodges M, Belle J, Carlton E, Liang S, Li H, Luo W, Freeman M, Liu Y, Gao Y, Hess J, Remais J. 2014. Quantification of the impact of climate change on water-, sanitation-, and hygiene attributable infectious diseases in China. *Nature Climate Change.* Submitted.
2. Hu X\*, Waller L, Lyapustin A, Wang Y, Liu Y. Improving Satellite-Driven PM2.5 Models with MODIS Fire Counts in the Southeastern U.S. 2014. *J Geophys Res-Atmos.* Submitted.
3. Li S\*, Kahn R, Chin M, Garay M, Chen L, Liu Y. Improving MISR retrieved aerosol microphysical properties using GOCART Data. 2014. *Atmos. Chem. Phys.* Submitted.
4. Snider G, Weagle C, Martin R, van Donkelaar A, Conrad K, Zwicker M, Akoshile C, Artaxo P, Anh N, Brook J, Dong J, Greenwald R, He K, Holben B, Kahn R, Koren I, Lagrosas N, Lestari P, Ma Z, Martins V, Quel E, Rudich Y, Salam A, Tripathi S, Yu C, Zhang Q, Zhang Y, Brauer M, Cohen A, Gibson M, Liu Y. 2014. SPARTAN: A Global Network to Evaluate and Enhance Satellite-Based Estimates of Ground-level Aerosol for Global Health Applications. *Atmospheric Measurement Techniques.* Submitted.
5. Moon T, Wang Y, Liu Y, Yu B. 2013. Evaluation of a MISR-based high-resolution aerosol retrieval method using DISCOVER-AQ mission data. *J Geophys Res-Atmos.* Submitted.
6. Lorenz A, Dhingra R, Chang HH, Bisanzio D, Liu Y, Remais JV. 2014. Intermodel comparison of the landscape determinants of vector-borne disease: implications for epidemiological and entomological risk modeling. *PlosOne.* Submitted.

7. Kim Y\*, Zhou Y, Gao Y, Fu JS, Johnson B, Huang C, Liu Y. 2014. Spatially-Resolved Estimation of Ozone and PM<sub>2.5</sub>-related Mortality Attributable to Climate Change in the Continental U.S. and Their Uncertainties. *Climatic Change*. Submitted.

## **PRESENTATIONS**

### **Invited Presentations**

1. Liu Y, Satellite-Predicted High-Resolution PM<sub>2.5</sub> Maps in the Southeastern United States. USEPA Work-In-Progress Webinar for the Clean Air Research Centers. May 14, 2014.
2. 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.
3. 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.
4. 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.
5. Liu Y. Enhancing EPHT with Satellite-Driven PM<sub>2.5</sub> Exposure Modeling and Epidemiology. **URISA's Fourth GIS in Public Health Conference**, Miami, FL, June 17 - 20, 2013.
6. 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.
7. 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.
8. Liu Y. Estimating PM Population Exposure from Satellite Data, **Environmental Forum, Nanjing University, School of Environment**, China, December 22, 2011.
9. 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.
10. Liu Y, Hu X, and Waller L. Estimating Ground Level PM<sub>2.5</sub> Concentrations in Atlanta Metro Area Using Spatial Statistical Models, **Goldschmidt2011**, Prague, Czech Republic, August 14-19, 2011.
11. Liu Y. Estimating PM Exposure with Satellite Remote Sensing. **HEI's 2011 Annual Conference**, Boston, MA, May 2, 2011.
12. Liu Y. Modeling the Spatial Patterns of PM<sub>2.5</sub> in Georgia With Satellite Remote Sensing and Meteorological Information. **The 91<sup>st</sup> Annual Meeting of the American Meteorological Society**, Seattle, WA, January 25, 2011.
13. Liu Y and Wang Z. Effects of Aerosol Vertical Profiles on Estimating Particle SO<sub>4</sub> Concentrations with MISR AOD. **MISR Science Team Meeting**, Pasadena, CA, December 11, and **American Geophysical Union Fall Meeting**, San Francisco, CA, December 16, 2009.

14. **Liu Y**, Applications of Satellite Remote Sensing Data in Air Pollution and Public Health Research. **Tsinghua University, Department of Environmental Sciences and Engineering**, October 15, and **Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences**, Beijing, China, October 18, 2009.
15. **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.
16. **Liu Y**. Estimating PM<sub>2.5</sub> Component Concentrations Using MISR Aerosol Microphysical Properties. **MISR Science Team Meeting**, Pasadena, CA, December 11, 2008.
17. **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.
18. **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.
19. **Liu Y** and Koutrakis P. Estimating the Spatial Distribution of PM<sub>2.5</sub> 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.
20. **Liu Y** and Koutrakis P. Estimating Long-Term PM<sub>2.5</sub> 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.
21. **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.
22. Paciorek CJ and **Liu Y**. Integrating Satellite and Monitoring Data to Retrospectively Estimate Monthly PM<sub>2.5</sub> Concentrations in the Eastern U.S., **Health Effects Institute's Annual Conference**, Chicago, IL. April 15, 2007.
23. **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.
24. **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.
25. **Liu Y**. Estimating PM<sub>2.5</sub> Concentrations by Combining MISR AOT with GEOS-CHEM Aerosol Simulations, **24<sup>th</sup> Annual AAAR Conference**, Austin, TX, October 17, 2005.

**Presentations in Professional Meetings (Student/postdoc authors indicated with an asterisk)**

1. Li S\*, Chin M, Garay M, Chen L, Liu Y. Improving MISR-retrieved aerosol properties using GOCART. **American Geophysical Union Fall Meeting**, San Francisco, CA, December 9-13, 2013.
2. 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. **American Geophysical Union Fall Meeting**, San Francisco, CA, December 9-13, 2013.
3. 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.

4. 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.
5. **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.
6. **Liu Y**, Li S, Szykman J, Schichtel B. Satellite-Observed Trend in PM2.5 Sulfate Levels in the U.S. and its Surrounding Areas. **American Geophysical Union Fall Meeting**, San Francisco, CA, December 2, 2012.
7. 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.
8. Hu X\*, and **Liu Y.** Estimating Ground-Level PM2.5 Concentrations in the Southeastern U.S. using MAIAC AOD Retrievals, **American Geophysical Union Fall Meeting**, San Francisco, CA, December 4, 2011.
9. Li S\*, Chen L, and **Liu Y.** Retrieval of the Haze Optical Thickness in North China Plain using MODIS data, **American Geophysical Union Fall Meeting**, San Francisco, CA, December 4, 2011.
10. **Liu Y**, Greenwald R, Sarnat J, Szykman J, Russell T. Intensive Synchronized PM Ground Sampling During the DISCOVER-AQ Campaign, **American Geophysical Union Fall Meeting** (poster), San Francisco, CA, December 4, 2011.
11. 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).
12. **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 **American Geophysical Union Fall Meeting** (poster), San Francisco, CA, December 15, 2010.
13. Hu X\*, Waller L, **Liu Y.** Estimating Ground Level PM2.5 Concentrations in Atlanta Metro Area Using Geographically Weighted Regression, **American Geophysical Union Fall Meeting**, San Francisco, CA, December 15, 2010. (poster)
14. 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 International Society of Exposure Science & International Society for Environmental Epidemiology**, Seoul, Korea, August 31, 2010.
15. 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.
16. 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.
17. **Liu Y.** Enhancing Environmental Public Health Tracking With Satellite-driven Particle Exposure Modeling And Epidemiology, **American Meteorological Society Annual Meeting**, Atlanta, GA, January 19, 2010.
18. **Liu Y.** Estimating Particle Sulfate Concentrations Using MISR Aerosol Properties, **National Environmental Public Health Conference**, Atlanta, GA, October 26, 2009.

19. **Liu Y**, Schichtel B, Koutrakis P, Estimating SO<sub>4</sub> Concentrations Using MISR Retrieved Aerosol Properties, **GEOS-Chem User Meeting**, Cambridge, MA, April 8, 2009.
20. **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.
21. **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.
22. **Liu Y**, Paciorek P, Estimating PM<sub>2.5</sub> Exposure Using Satellite Remote Sensing, Meteorology, and Land Use Information, **ISEA / ISEE Joint Annual Conference**, Pasadena, CA, October 16, 2008.
23. Paciorek C, **Liu Y**, Macias H, Kondragunta S. Spatio-Temporal Associations of MISR and GOES AOD with Ground-Level PM<sub>2.5</sub> Concentrations in Eastern US, **American Geophysical Union Fall Meeting**, San Francisco, CA, December 12, 2007.
24. **Liu Y**, Kahn R, Turquety S, Yantosca R, Koutrakis P. A Novel Method to Estimate PM<sub>2.5</sub> Constituent Concentrations and Size Distributions Using Satellite Retrieved Fractional AOD, **Health Effects Institute's Annual Conference**, Chicago, IL, April 15, 2007.
25. **Liu Y**. A Fractional AOD Approach to Derive PM<sub>2.5</sub> Information Using MISR Data Coupled with GEOS-CHEM Aerosol Simulation Results, **the 3<sup>rd</sup> GEOS-Chem User Meeting**, Cambridge, MA, April 11, 2007.
26. **Liu Y**, Kahn R, Turquety S, Yantosca R, Koutrakis P. Estimating PM<sub>2.5</sub> Speciation and Size Distributions Using MISR Retrieved Aerosol Microphysical Properties, **MISR user science symposium**, Pasadena, CA, December 6, 2006.
27. 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.
28. **Liu Y**, Franklin M, Kahn R, Koutrakis P. Comparing the Capability of MISR and MODIS AOD in Estimating Ground-Level PM<sub>2.5</sub> 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.
29. **Liu Y**. Improving Ambient Fine Particle Pollution Monitoring with MISR Aerosol Product, the **MISR Science Team meeting**, Pasadena, CA, December 7, 2004.
30. **Liu Y**. The Application of Satellite Remote Sensing in Estimating Fine Particle Concentrations, **MISR Science Team meeting**, Pasadena, CA, December 15, 2003.

## **TEACHING**

- |           |  |
|-----------|--|
| 2011-2014 | Emory University, Rollins School of Public Health. EH587: Introduction to Satellite Remote Sensing of the Environment and Its Applications in Public Health (Course instructor). |
| 2013      | Emory University, Rollins School of Public Health. EH515: Air Quality in the Urban Environment: A Survey of Research methods and Recent Findings (Guest lecture)                 |
| 2013-2014 | Emory University, Rollins School of Public Health. HLTH38-EH590: Genome, Exposome, and Health (Guest lecture)  |

- 2011-2013 Emory University, Rollins School of Public Health. EH582: Global Climate Change: Health Impacts and Response (Guest lecture)
- 2010 The Institute for Pedagogy in the Liberal Arts Conference on Teaching Methods and Technology, Emory University, Center for Faculty Development and Excellence (Participant)
- 2009 EH 590R: Environmental Health Journal Club, Emory University, Rollins School of Public Health  
2010 (Guest lecture)
- 2008 EH297, Atmospheric Environment Seminars, Harvard University, School of Public Health & Cyprus International Institute (Guest lecturer)
- 2006 ID 215, Environmental and Occupational Epidemiology, Harvard University, School of Public Health (Discussion leader)
- 2002 ES 168, Aquatic Chemistry, Harvard University, School of Engineering and Applied Sciences (Teaching Fellow)
- 1996 Engineering Design of Domestic Wastewater Treatment Plants, Tsinghua University (Teaching Assistant).

**Doctoral Dissertation Committee**

- Active Qingyang Xiao (Emory, EH): dissertation committee chair
- Active Heather Strosnider (Emory, EH): Short-term Associations between Pediatric Asthma and Ambient Air Pollutants, dissertation committee member
- Active Chao Yu (Institute of Remote Sensing and Digital Earth (RADI), Chinese Academy of Sciences), dissertation committee member
- Active Zongwei Ma (Nanjing University, China), dissertation committee member
- 2012 Jason Vargo (Georgia Tech), dissertation committee member

**Master's Thesis Committee**

- 2015 Jennifer Stowell (EH), TBD (Chair)
- 2015 Liansai Dong (EH), TBD (Chair)
- 2015 Kelsey McDavid (EH), TBD (faculty advisor)
- 2015 Clarissa Delgado (EH), TBD (faculty advisor)
- 2015 Steven Sclar (GEH), TBD (faculty advisor)
- 2015 Mihaela Dan (EH), TBD (faculty advisor)
- 2014 Qingyang Xiao (EH): Impact of winter heating on the air quality in China (Chair)
- 2014 Kaytna Thaker (EH): TBD (faculty advisor)
- 2013 Xueying Zhang (EPI): Applied Satellite Remote Sensing in Time-series Study of Associations between PM<sub>2.5</sub> and Pediatric Asthma/Wheeze Emergency Department Visits in Metropolitan Atlanta (field advisor)
- 2013 Elizabeth Ervin (EH): Examining human behavioral characteristics that increase risk for Hantavirus Pulmonary Syndrome in the United States (Chair)

- 2013 Christina Wu (EH): A Systematic Review & Meta-Analysis on Night-Shift Work with Breast Cancer (Chair)
- 2013 Takahiro Goto (EH): QSAR modeling using a set of intermediate-duration oral NOELs (Chair)
- 2012 Rahul Bhailal Gondalia (EH): Remote Sensing Vegetation Reclamation on Surface Mines in Appalachia: A Case Study on Hobet Mine in West Virginia (Chair)
- 2012 Deanna Kristine Tollefson (EH): Assessing Performance of Community-Directed Treatment with Ivermectin between Onchocerciasis Control and Elimination Programs in Uganda (Chair)

### **Visiting Students**

- 2014 Xia Meng, Fudan University, School of Public Health, China
- 2009 Zifeng Wang, Institute of Remote Sensing and Digital Earth (RADI), Chinese Academy of Sciences

### **SERVICE**

#### **Service to Emory University**

##### **Committee Participation**

- 2014 RSPH Shepard Award Committee (Chair)
- 2013 RSPH Committee on Community and Diversity (member)
- 2011-2012 RSPH IT Advisory Committee (member)
- 2009-2010, 2013 RSPH Shepard Award Committee (member)

#### **Miscellaneous Talks within Emory University**

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

#### **Service to Profession**

##### **Editorial Board**

- 2013- Associate editor, *Frontiers in Environmental Science*
- 2014- Guest editor, *Advances in Meteorology*, special issue on Atmospheric Compositions: Satellite Observation and Applications on Air Quality and Climate Study

##### **Expert Panel**

- 2014- Global Burden of Disease 2013 Expert, Ambient Particulate Matter Pollution
- 2013- Scientific Steering Group member, WHO Department of Public Health and Environment, Global Platform on Air Quality and Health Project

#### **Peer Review Activities for Funding Agencies**

- 2014 Ad hoc reviewer for the National Science Foundation (AGS - GEO/ATM - Atmospheric Chemistry)
- 2014 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 call for proposals on "the Centers for Oceans and Human Health, and the Oceans, Great Lakes, and Human Health" (RFA-ES-11-013)
- 2010 Ad hoc reviewer for NASA Applied Science Program (ROSES 2010 )
- 2010 Ad hoc reviewer for The Canadian Natural Sciences and Engineering Research Council (NSERC) and the Canadian Institutes of Health Research (CIHR)

**Peer Review Activities: Manuscripts and Conferences**

- 2004- Ad hoc reviewer for *Aerosol and Air Quality Research; Air Quality, Atmosphere and Health; Atmospheric Environment; Atmospheric Pollution Research; Atmospheric Research; Atmospheric Science Letters; Environmental Health; Environmental Health Perspectives; Epidemiology; Frontiers of Medicine; Geophysical Research Letters; International Journal of Health and Geographics; International Journal of Environmental Research and Public Health; 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; Remote Sensing; Remote Sensing of Environment; Science of the Total Environment.*
- 2013 Co-chair of symposium " Remote sensing approaches to estimate air pollution exposure for disease burden and epidemiology" in the Conference of ISEE, ISES and ISIAQ, August 19 -24, Basel, Switzerland
- 2011 Co-chair of symposium "the applications of satellite remote sensing in air pollution exposure sciences and environmental health research and practice" in the ISES 2011 annual meeting, October 23-27, 2011, Baltimore, MD
- 2011 Co-host of pre-conference workshop "*Applications of Satellite Remote Sensing in Air Pollution Exposure Science*" in the ISES 2011 annual meeting, October 23-27, 2011, Baltimore, MD

**MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS AND SOCIETIES**

- 2014 – NASA Aura satellite, science team member  
present
- 2012 – 2014 NASA Applied Remote SEnsing Training (ARSET) team member
- 2011 – NASA Air Quality Applied Science Team member  
present
- 2008 – NASA Terra satellite, MISR science team member  
present
- 2008 – International Society of Exposure Science (ISES)  
present
- 2004 – American Geophysical Union (AGU)  
present
- 2010 – 2011 American Meteorological Society (AMS)



2005 – 2006 American Association for Aerosol Research (AAAR)  
2007 Science Advisor to NASA DEVELOP student team  
2007 – Global Science Advisor for Earth & Sky, National Public Radio  
present