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## EDUCATION

Ph.D. Environmental Engineering, Georgia Institute of Technology (2012-2016)

Minor: City and Regional Planning (GIS)

Advisor: Armistead G. Russell

Title: *Integration of Air Quality Data for Improved Estimates of PM<sub>2.5</sub> Source Impacts*

M.S. Environmental Engineering, Georgia Institute of Technology (2011)

B.S. Civil Engineering, Georgia Institute of Technology, *summa cum laude* (2010)

B.S. Mathematics, Fort Valley State University, *magna cum laude* (2008)

## PROFESSIONAL APPOINTMENTS

- 2021- Assistant Professor, Department of Civil and Environmental Engineering, University of California, Berkeley
- 2021- Adjunct Assistant Professor, Department of Chemical and Environmental Engineering, University of California, Riverside
- 2018-2021 Assistant Professor, Department of Chemical and Environmental Engineering, University of California, Riverside  
College of Engineering Center for Environmental Research and Technology, School of Medicine BREATHE Center, School of Public Policy Center for Geospatial Sciences, College of Natural and Agricultural Sciences Environmental Toxicology Program
- 2018 Visiting Scientist, Atmospheric and Oceanic Sciences, Princeton University/NOAA GFDL
- 2017-2018 Visiting Assistant Researcher, Chemical and Environmental Engineering, UC Riverside
- 2016-2017 Post-doctoral Researcher, Atmospheric Sciences Program, Physics Department, University of Nevada Reno

## PUBLICATIONS

*AQMEL Students are underlined>*

### **Submitted**

- Huang R, Li Z, **Ivey CE**, Zhai X, Shi GL, Mulholland JA, Devlin R, Russell AG. Application of an Improved Gas-constrained Source Apportionment Method Using Data Fused Fields: A Case Study in North Carolina, USA. (*Science of the Total Environment*)
- Sun X, **Ivey CE**, Baker K, Lareau N, Holmes HA. Assessing Uncertainties of Simulated Air Pollution Concentrations during Persistent Cold Air Pool Events in the Salt Lake Valley, Utah. (*Environmental Science & Technology*)
- Laughner JL, Neu JL, Schimel D, ..., **Ivey CE**, ..., et al. The 2020 COVID-19 pandemic and atmospheric composition: back to the future. (*Proceedings of the National Academy of Sciences*)

- **Ivey CE**, Gao Z, Do K, Kashfi Yeganeh A, Russell AG, Blanchard CL, and Lee S-M (2020). Impacts of the 2020 COVID-19 Shutdown Measures on Ozone Production in the Los Angeles Basin. *ChemRxiv*. Preprint. <https://doi.org/10.26434/chemrxiv.12805367.v1>

### Viewpoints

1. Goldman G, **Ivey CE**, Garcia-Menendez F, Balachandran S (2021). Beyond the Lab: Researchers May Find Purpose through Policy, Advocacy, and Public Engagement. *Environmental Science & Technology*, 55, 5, 2720–2721. <https://doi.org/10.1021/acs.est.1c00495>
2. **Ivey CE** (2020). Land use predicts pandemic disparities. *Nature*. 588(7837), 220-220. <https://doi.org/10.1038/d41586-020-03480-1>

### Peer-Reviewed Publications

1. Sasser J, Leebaw B, **Ivey CE**, Brown B, Takeshita C, Nguyen A (2021). A call for intersectional research to address the compounding disparities related to the COVID-19 pandemic. *Journal of Exposure Science & Environmental Epidemiology* (Invited, Accepted)
2. Do K, Yu H, Velasquez J, Grell-Brisk M, Smith H, and **Ivey CE** (2021). A data-driven approach for characterizing community scale air pollution exposure disparities in inland Southern California. *Journal of Aerosol Science*, Article 105704. <https://doi.org/10.1016/j.jaerosci.2020.105704>
3. Wang Y, Liu Z, Huang L, Lu G, Gong Y, Yaluk E, Li H, Yi X, Yang L, Feng J, **Ivey CE**, and Li L (2020). Development and evaluation of a scheme system of joint prevention and control of PM2.5 pollution in the Yangtze River Delta region, China. *Journal of Cleaner Production*, 275, 122756. <https://doi.org/10.1016/j.jclepro.2020.122756>
4. Yu X, **Ivey CE**, Wong D, Gurram S, Sivaraman V, Shen HZ, Eluru N, Hasan S, Henneman LRF, Shi GL, Zhang HL, Yu HF, and Zheng JY (2020). Quantifying the Impact of Daily Mobility on Errors in Air Pollution Exposure Estimation Using Mobile Phone Location Data. *Environment International*, 141, Article 105772. <https://doi.org/10.1016/j.envint.2020.105772>
5. Hepworth KJ, **Ivey CE**, Canon C, and Holmes HA (2020). Embedding online, design-focused data visualization instruction in an upper division undergraduate atmospheric science course. *Journal of Geoscience Education*, 68 (2), 168-183. <https://doi.org/10.1080/10899995.2019.1656022>
6. Huang M, **Ivey CE**, Hu YT, Holmes HA, and Strickland MJ (2019). Associations of PM2.5 Source Concentrations with Pediatric Respiratory Disease Emergency Department Visits in the U.S. State of Georgia: A Case-crossover Study. *Environment International*, 133A, 105167. <https://doi.org/10.1016/j.envint.2019.105167>
7. **Ivey CE**, Balachandran S, Colgan S, Hu YT, and Holmes HA (2019). Investigating Fine Particulate Matter Sources in Salt Lake City during Persistent Cold Air Pool Events. *Atmospheric Environment*, 213, 568-578. <https://doi.org/10.1016/j.atmosenv.2019.06.042>
8. Yu X, Stuart AL, Liu Y, **Ivey CE**, Russell AG, Kan HD, Henneman LRF, Sarnat SE, Hasan S, Sadmani A, Yang XC, Yu HF (2019). On the accuracy and potential of Google Maps location history data to characterize individual mobility for air pollution health studies. *Environmental Pollution*, 252A, 924-930. <https://doi.org/10.1016/j.envpol.2019.05.081>

9. Henneman LRF, Choirat C, **Ivey CE**, Cummiskey K, Zigler CM (2019). Characterizing population exposure to coal emissions sources in the United States using the HyADS model. *Atmospheric Environment*, <https://doi.org/10.1016/j.atmosenv.2019.01.043>
10. Wang HT, Ding J, Xu J, Wen J, Han JH, Wang KL, Shi GL, Feng YC, **Ivey CE**, Wang YH, Nenes, A, Zhao QY, and Russell AG (2019). Aerosols in an arid environment: The role of aerosol water content, particulate acidity, precursors, and relative humidity on secondary inorganic aerosols. *Science of the Total Environment*, 646, 564-572. <https://doi.org/10.1016/j.scitotenv.2018.07.321>
11. Wen J, Shi GL, Tian YZ, Chen G, Liu JY, Huang-Fu YQ, **Ivey CE**, Feng YC (2018). Source contributions to water-soluble organic carbon and water-insoluble organic carbon in PM<sub>2.5</sub> during Spring Festival, heating and non-heating seasons. *Ecotoxicology and Environmental Safety*, 164, 172-180. <https://doi.org/10.1016/j.ecoenv.2018.08.002>
12. Bates JT, Weber RJ, Verma V, Fang T, **Ivey CE**, Liu C, Sarnat SE, Chang HH, Mulholland JA, and Russell AG. Source Impact Modeling of Spatiotemporal Trends in PM 2.5 Oxidative Potential across the Eastern United States (2018). *Atmospheric Environment*, 193, 158-167. <https://doi.org/10.1016/j.atmosenv.2018.08.055>
13. Shi GL, Liu JY, Wang HT, Tian YZ, Wen J, Shi X, Feng YC, **Ivey CE**, and Russell AG (2018). Source apportionment for fine particulate matter in a Chinese city using an improved gas-constrained method and comparison with multiple receptor models. *Environmental Pollution*, 233, 1058-1067. <https://doi.org/10.1016/j.envpol.2017.10.007>
14. Huang R, Zhai X, **Ivey CE**, Friberg MD, Hu X, Liu Y, Di Q, Schwartz J, Mulholland JA, Russell AG (2017). Air Pollutant Exposure Field Modeling Using Air Quality Model-Data Fusion Methods, and Comparison with Satellite AOD-derived Fields: Application over North Carolina, USA. *Air Qual. Atm. & Health*, <https://doi.org/10.1007/s11869-017-0511-y>
15. **Ivey CE**, Shi GL, Holmes HA, Hu YT, and Russell AG. Development of PM<sub>2.5</sub> source profiles using a hybrid chemical transport-receptor modeling approach (2017). *Env. Sci. Tech.*, <http://dx.doi.org/10.1021/acs.est.7b03781>
16. Sun X, Holmes HA, Osibanjo OO, Sun Y, **Ivey CE** (2017). Evaluation of Surface Fluxes in the WRF Model: Case Study for Farmland in Rolling Terrain. *Atmosphere*, 8 (10), 197. <https://doi.org/10.3390/atmos8100197>
17. Shi GL, Peng X, Huangfu Y, Wang W, Xu J, Tian YZ, Feng YC, **Ivey CE**, and Russell AG (2017). Quantification of source impact to PM using three-dimensional weighted factor model analysis on multi-site data. *Atm. Env.*, 160, 89-96. <https://doi.org/10.1016/j.atmosenv.2017.04.021>
18. **Ivey CE**, Holmes HA, Hu YT, Mulholland JA, and Russell AG (2016). A method for quantifying bias in modeled concentrations and source impacts for secondary particulate matter. *Front. Env. Sci. Eng.*, 10 (5), 14. <https://doi.org/10.1007/s11783-016-0866-6>  
\*\*Voted Best Paper of 2016\*\*
19. Peng X, Shi GL, Gao J, Liu JY, HuangFu YQ, Ma T, Wang HT, Zhang YC, **Ivey CE**, and Feng YC (2016). Characteristics and sensitivity analysis of multiple time-resolved emission patterns of PM<sub>2.5</sub> sources with real time data using Multilinear Engine 2. *Atm. Env.*, 139, 113-121. <https://doi.org/10.1016/j.atmosenv.2016.05.032>

20. Redman JD, Holmes HA, Balachandran S, Maier ML, Zhai X, Ivey CE, Digby K, Mulholland JA, and Russell AG (2016). Development and Evaluation of a Daily Temporal Interpolation Model for Fine Particulate Matter Species Concentrations and Source Apportionment. *Atm. Env.* 140, 529-538. <https://doi.org/10.1016/j.atmosenv.2016.06.014>
21. Ivey CE, Holmes HA, Hu YT, Mulholland JA, and Russell AG (2015). Development of PM2.5 source impact spatial fields using a hybrid source apportionment air quality model. *Geosci. Model Dev.*, 8, 2153-2165, <https://doi.org/10.5194/gmd-8-2153-2015>
22. Hu YT, Balachandran S, Pachon J, Baek J, Ivey CE, Holmes HA, Odman MT, Mulholland JA, and Russell AG (2014). Fine Particulate Matter Source Apportionment Using a Hybrid Chemical Transport and Receptor Model Approach. *Atm. Chem. Phys.*, 14, 5415-5431. <https://doi.org/10.5194/acp-14-5415-2014>

### Conference Proceedings

1. Bates JT, Weber RJ, Abrams J, Verma V, Fang T, Ivey CE, Liu C, Klein M, Strickland MJ, Sarnat SE, Chang H, Mulholland JA, Tolbert PE, Russell AG. "Source Impacts on and Cardiorespiratory Effects of Reactive Oxygen Species Generated by Water-Soluble PM2.5 Across the Eastern United States." *International Technical Meeting on Air Pollution Modelling and its Application XXV*, Springer, Cham, 503-508, 2016.
2. Huang R, Zhai X, Ivey CE, Friberg MD, Hu XF, Liu Y, Mulholland JA, Russell AG. "Using Air Quality Model-Data Fusion Methods for Developing Air Pollutant Exposure Fields and Comparison with Satellite AOD-Derived Fields: Application over North Carolina, USA." *International Technical Meeting on Air Pollution Modeling and Its Application XXV*, Springer, pg. 207-212, 2016.
3. Yu HF, Russell AG, Mulholland JA, Ivey CE, Bates JT, Friberg MD, Huang R, Moutinho JL, Holmes HA. "Air Quality Model-Based Methods for Estimating Human Exposures: A Review and Comparison." *International Technical Meeting on Air Pollution Modeling and Its Application XXV*, Springer, pg. 495-501, 2016.
4. Ivey CE, Holmes HA, Hu YT, Mulholland JA, and Russell AG. "Application of a Hybrid Chemical Transport-Receptor Model to Develop Region-Specific Source Profiles for PM2.5 Sources and to Assess Source Impact Changes in the United States." *International Technical Meeting on Air Pollution Modeling and Its Application XXIV*, Springer, pg. 489-495, 2016.
5. Ivey CE, Holmes HA, Hu YT, Mulholland JA, and Russell AG. "Spatial and Temporal Extension of a Novel Hybrid Source Apportionment Model." *Air Pollution Modeling and Its Application XXIII*, pg. 611-615, Springer, 2014.

### AWARDS

\*Principal Investigator, §Advisee, †Technical Lead (Tenure-Track Total to Ivey: **\$1,934,006**)

#### University of California, Riverside

2021-2024 "STAR (Early Career): A Community-Aligned Action Plan for Effective Communication of Wildland Fire Smoke Exposure Risks,"  
Environmental Protection Agency, **\$550,000\***

- 2021-2024 “CDS&E: Harnessing Graphical Processing Units (GPUs) to Accelerate the Computational Efficiency of Air Quality Modeling Systems for Four-Dimensional Air Pollution Predictions”  
National Science Foundation, **\$456,464\***
- 2021-2022 “Center for Air, Climate, and Energy Solutions (CACES)”  
Environmental Protection Agency, Director: Allen Robinson (Carnegie Mellon U), **\$10M (\$5,000 to Ivey)**
- 2021-2026 “R01: A multicity study of wintertime inversions and acute cardiorespiratory health events in the western U.S.”  
National Institutes of Health NIEHS, PI: Heather Holmes (U Utah), **\$3M (\$385,752 to Ivey)**
- 2020 “Being Human: Interdisciplinary Mini-Lab”  
Center for Ideas and Society, PI: Jade Sasser, **\$2,500 (\$500 to Ivey)**
- 2020-2021 “Hyperlocal Monitoring of Traffic-Related Air Pollution to Assess Near-Term Impacts of Sustainable Transportation Interventions”  
National Center for Sustainable Transportation, **\$100,553\***
- 2020 “Changes in Traffic Patterns and Localized Air Quality in Southern CA”  
University of California Institute of Transportation Studies, PI: Shams Tanvir (CE-CERT), **\$79,000 (\$10,000 to Ivey)**
- 2020-2021 “Exploring the effects of the expanding of the hemp industry on air quality in the Central Valley, CA”  
Undergraduate Education Mini-Grant, PI: Jasmin Velasquez (Chemical Engineering) §, **\$300**
- 2020-2022 “Toward Air Quality and Climate Resilience in West San Bernardino”  
California Air Resources Board, PI: Alma Marquez (Center for Community Action and Environmental Justice), **\$300,000 (\$225,000 to Ivey)†**
- 2019-2020 “Combined Empirical/Chemical Transport Air Quality Modeling and ‘Big Data’ Analysis of Meteorological and Emissions Impacts on Air Quality in the South Coast Air Basin”  
South Coast Air Quality Management District (P2019-08), **\$188,000\***
- 2019-2021 Regents Faculty Fellowship, UCR Academic Senate, **\$2,000\***
- 2019-2020 Omnibus Research and Travel Award, UCR Academic Senate, **\$1,800\***
- 2018-19 “Characterization of Air Quality Disparities in Inland Southern California”  
Sloan Foundation/Social Science Research Council Seed Funding Grant, **\$9,500\***
- 2017-18 Provost’s Diversity in Engineering Fellowship, **\$200,000\* (Pre-Tenure Track)**

**University of Nevada Reno**

- 2017 Postdoctoral Awards for Professional Development, **\$500\***

2016-17 Nevada Space Grant Consortium Research Infrastructure Award, PI: Prof. Heather A. Holmes (UNR), **\$20,000**

### **Georgia Institute of Technology**

2014-16 EPA STAR Graduate Research Fellowship, FP-91761401-0, **\$84,000\***

2014 AWMA Air Quality Research and Study Award, **\$1,500\***

2013-16 Alfred P. Sloan Minority Ph.D. Fellowship, **\$40,000\***

### **HONORS**

2017 Johnson & Johnson WiSTEM2D: Limited submission nomination for Technology, UC Riverside

2017 Best Paper 2016, *Frontiers of Environmental Science and Engineering*

### **PRESENTATIONS**

*\*Moved to online format; †cancelled due to COVID-19*

#### **Invited Presentations**

1. TBD. Science Visitor and Colloquium Program (SVCP), Earth Science Seminar, Jet Population Laboratory, Fall 2021.\*
2. TBD. Earth and Environmental Engineering Seminar, Columbia University, September 2021.\*
3. “Are we getting it right? A conversation on air pollution exposure assessment and implications for eliminating disparities.” Civil, Architectural, and Environmental Engineering Seminar, Drexel University, May 2021.\*
4. “Are we getting it right? A conversation on air pollution exposure assessment and implications for eliminating disparities.” Civil and Infrastructure Engineering Seminar, George Mason University, April 2021.\*
5. “Indoor Particulate Matter of Outdoor Origin and the Disparities in Sources and Exposures Across Communities.” National Academies Workshop on Indoor Exposure to Fine PM and Practical Mitigation Approaches, April 2021.\*
6. “Session 2 Anchor Talk: Equity, Access, and Community Engagement.” NSF Predictive Intelligence for Pandemic Prevention (PIPP) “Human” Workshop, March 2021.\*
7. “Toward a better understanding of recent emissions and meteorological impacts on air quality in the South Coast Air Basin.” CARTEEH Webinar: COVID-19 Impacts on Transportation, Air Quality, and Health, December 2020.\*
8. “How are various sectors impacting air pollution during COVID-19, and what are the implications for future mitigation, with a special focus on implications for underserved communities?” AEESP Converging COVID-19, environment, health, and equity, November 2020.\*
9. “How COVID-19 has impacted transportation, air quality, and environmental justice in Southern California?” UCLA Arrowhead Symposium, October 2020.\*

10. "Chemical Transport Models and Their Limitations for Environmental Justice Analyses." Environmental Engineering Seminar Series, UC Berkeley, October 2020.\*
11. "Applications of deterministic models, geospatial methods, and machine learning to address multiscale air quality challenges." Frontiers in Atmospheric Chemistry Seminar Series, MIT, October 2020.\* (Online Attendance: 324)
12. "Multiscale Impacts of Poor Air Quality: Case Studies of Regional, Local, and Community Air Pollution Sources and Exposures." Lamont-Doherty Earth Observatory Colloquium, Columbia University, New York, NY, October 2019.
13. "20/20 Vision for Sustainability in Riverside." Riverside Green Summit, Riverside, CA, October 2019.
14. "Applications of an Air Quality Model Sensitivity Tool for Source Characterization and Environmental Justice Analyses." Environmental Engineering Seminar Series, University of California Irvine, Irvine, CA, April 2019.
15. "Data Assimilation Methods for Improved PM<sub>2.5</sub> Source Impacts: A Case Study for Salt Lake City." AeroCenter Seminar Series, NASA Goddard Space Flight Center, Greenbelt, MD, August 2017.
16. "Novel Methods for Source Apportionment in the United States." Seminar, Department of Chemical and Environmental Engineering, Shanghai University, Shanghai China, June 2017.
17. "Novel Data Assimilation Approaches for PM<sub>2.5</sub> Source Apportionment and Applications to Current Air Quality Challenges." Faculty Candidate Seminar, Department of Chemical and Environmental Engineering, UC Riverside, March 2017.
18. "Integration of Air Quality Data for Improved Estimates of PM<sub>2.5</sub> Source Impacts." Faculty Candidate Seminar, Department of Chemical and Environmental Engineering, UC Riverside, May 2016.

### **Departmental Presentations**

1. "Why care about air? The importance of clean air initiatives for a long and healthy life." UCR Aging Institute, February 2021.\*
2. "Wearable air monitoring to assess personal exposure and environmental justice." Clean Air Day Webinar, CE-CERT, October 2020.\*
3. "Air Quality Modeling and Its Applications for Public Health Studies," Bioengineering Graduate Seminar\*, University of California, Riverside, CA, April 2020.
4. "Data Science and Environmental Systems: Applications of Deterministic Models, Optimization, and Machine Learning to Address Multi-scale Air Quality Challenges." Data Science Center Seminar, University of California Riverside, Riverside, CA, November 2019.
5. "Personal PM<sub>2.5</sub> Exposure in the Inland Empire." 2<sup>nd</sup> Annual BREATHE Workshop, School of Medicine, University of California, Riverside, May 2019.
6. "Dynamic Mobility Management Systems Workshop: Air Quality Measurements and Modeling." DyMMS Workshop, Center for Environmental Research and Technology, Riverside, CA, April 2019

7. "A Hybrid Method to Estimate Source Impacts on Fine Particulate Matter for Health Studies." Fall Colloquium Series, Department of Physics, University of Nevada Reno, Reno, NV, September 2016.
8. "PM<sub>2.5</sub> Source Apportionment using Hybrid and Geospatial Techniques." Spring Seminar Series, Environmental Engineering, Georgia Tech, Atlanta, GA January 2013.

## CONFERENCE ACTIVITIES

<sup>a</sup>UCR graduate student presenter; <sup>b</sup>UCR undergraduate student presenter; <sup>\*</sup>Moved to online format or <sup>§</sup>cancelled due to COVID-19

### Relevant Conference Presentations

1. "Pandemic-Induced Changes in Traffic Patterns and Localized Air Quality in Inland Southern California." Oral Presentation at 38<sup>th</sup> Meeting of the American Association for Aerosol Research, October 2020.<sup>a\*</sup>
2. "Application of Machine Learning for Future Air Quality Predictions in Southern California." Poster Presentation at 38<sup>th</sup> Meeting of the American Association for Aerosol Research, October 2020.<sup>a\*</sup>
3. "Exploring the Effects of Hemp Industry Expansion on Ozone and SOA Formation in Central Valley, CA." Oral Presentation at 38<sup>th</sup> Meeting of the American Association for Aerosol Research, October 2020.<sup>b\*§</sup>
4. "High-Temporal Resolution Personal Exposure Pilot Study in Inland Southern California." Poster Presentation at the Air Sensors International Conference<sup>§</sup>, Pasadena, CA, May 2020.<sup>§</sup>
5. "CMAQ-Enhanced Estimates of Personal Exposure to Diesel Particulates." Poster Presentation at the Community Modeling and Analysis System Meeting, Chapel Hill, NC, October 2019.
6. "Low-Cost Sensing to Assess Personal Exposure in a Heavily Burdened Air Basin." Poster Presentation at 37<sup>th</sup> Meeting of the American Association for Aerosol Research, October 2020.<sup>a</sup>
7. "Quantifying how Mobility Impact Air Pollution Exposure Estimation Using a Large Cell Phone Location Dataset." Oral Presentation at ISES-ISIAQ 2019, Kaunas, Lithuania, August 2019.
8. "Microenvironmental PM<sub>2.5</sub> Exposure in a Mixed Land-Use and Heavily Burdened Air Basin." Poster Presentation at ISES-ISIAQ 2019, Kaunas, Lithuania, August 2019.
9. "Wildfire smoke exposure modeling: investigating CMAQ-modeled aerosol concentrations using a satellite-based wildfire emissions inventory." Oral Presentation (Given by H. Holmes) at 98th American Meteorological Society Annual Meeting, Austin, TX, January 2018.
10. "Data Assimilation to Improve CMAQ Model Estimates of Particulate Matter Pollution during Wintertime Persistent Cold Air Pool Events in Salt Lake City, Utah." Poster Presentation at American Geophysical Union Annual Meeting, New Orleans, LA, December 2017.
11. "Regional Air Quality Modeling of Wildfires for Health Assessments over the Continental United States." Oral Presentation at the Community Modeling and Analysis System Meeting, Chapel Hill, NC, October 2017.



12. "What have we learned? A review of novel data assimilation techniques for source apportionment." Poster Presentation at the Community Modeling and Analysis System Meeting, Chapel Hill, NC, October 2017.
13. "Regional Air Quality Modeling of Wildfires for Health Assessments over the Continental United States." Oral Presentation at the American Association for Aerosol Research Meeting, Raleigh, NC, October 2017.
14. "Investigating Chemical and Physical Atmospheric Properties of Wintertime Persistent Cold Air Pool Events in Salt Lake City for Air Quality Assessments." Oral Presentation at the American Association for Aerosol Research Meeting, Raleigh, NC, October 2017.
15. "Investigating PM<sub>2.5</sub> Sources in Salt Lake City during Persistent Cold Air Pool Events." Poster Presentation (Given by H. Holmes) at the 4<sup>th</sup> International Conference on Atmospheric Sciences and Application to Air Quality, Strasbourg, France, May 2017.
16. "Development of improved wildfire smoke exposure estimates for health studies in the western U.S." Poster Presentation at the American Geophysical Union Annual Meeting, San Francisco, CA, December 2016.
17. "Investigating PM<sub>2.5</sub> Sources in Salt Lake City during Persistent Cold Air Pool Events." Oral Presentation at Far West Section Meeting of the American Physical Society, Davis, CA, October 2016.
18. "Data Assimilation for Improved Exposure Modeling of Source Impacts on PM<sub>2.5</sub> for Continental United States." Oral Presentation (Given by T. Russell) at the International Society of Exposure Science (ISES) 2016 Annual Meeting in Utrecht, NL, October 2016.
19. "Python for 4-D Visualization of Air Quality Data." Oral Presentation at the 95<sup>th</sup> American Meteorological Society Annual Meeting. Phoenix, Arizona, January 2015.

### **Conference Service**

2020	Primary Convener, GeoHealth, American Geophysical Union Annual Meeting*
2020	Convener, Atmospheric Sciences, American Geophysical Union Annual Meeting*
2020	Session Chair, Health-Related Aerosols, 38 <sup>th</sup> Meeting of the American Association for Aerosol Research*
2019	Primary Convener, GeoHealth, American Geophysical Union Annual Meeting, San Francisco, CA
2019	Convener, Atmospheric Sciences, American Geophysical Union Annual Meeting, San Francisco, CA
2018	Session Chair, Source Apportionment III: International Aerosol Conference, St. Louis, MO
2018	Poster Judge: International Aerosol Conference, St. Louis, MO
2018	Panelist: Student Conference of American the American Meteorological Society
2018	Poster Judge: Student Conference of American the American Meteorological Society
2013	Poster Judge: SERMACS Undergraduate Poster Competition, Atlanta, GA

## TEACHING

### University of California, Berkeley

#### Ph.D. Students

2021- Yi Ji, Civil and Environmental Engineering

#### Course Instruction

Air Pollution Modeling (graduate) Spr 21

### University of California, Riverside

#### Ph.D. Students

2018- Khanh Do, Chemical and Environmental Engineering

#### Master's Students

2020 Andrew Lvovsky, Computer Science

#### Undergraduate Students

Current Alexander Nguyen, Chemical Engineering

2021 Sebastien Banales, Chemical Engineering  
Karrengton Fountain, Environmental Engineering  
Yi Ji, Environmental Engineering  
Jasmin Velasquez, Chemical Engineering  
Ruoming Xu, Chemical Engineering

2019 Anthony Arteaga, Chemical Engineering  
Aaron Garcia, Aerospace Engineering  
Cole Lawless, Chemical Engineering  
Jannatin Nisha, Chemical Engineering  
Ali Raza, Chemical Engineering  
Saray Rodriguez, Business Information Systems  
Hector Soto, Electrical Engineering  
Priscilla Villegas, Chemistry  
David Wilson, Electrical Engineering

#### Course Instruction (\*online due to COVID-19)

Chemical Engineering Thermodynamics	Win 20, Fall 18
Chemical Process Analysis A	Fall 20*, Fall 19
Fate and Transport of Environmental Contaminants	Win 21*
Graduate Special Topics: Low-Cost Sensors & Proposal Writing	Fall 19
Graduate Special Topics: Professional Development & Research Skills	Spr 19
Introduction to Chemical and Environmental Engineering (Rotational Lecture)	Win 21*, Fall 19, Win 19
Technology of Air Pollution Control	Spr 21*, Spr 20*, Spr 19

#### Course Development

Air Quality Modeling (graduate course) Fall 21

**Shanghai University, Shanghai, China**

Undergraduate Course: International Short Course Week: Air Quality and Health      Sum 2017

**University of Nevada Reno, Reno, NV**

Undergraduate Course: Computational Skills for Big Data      Spr 2017

**Georgia Institute of Technology, Atlanta, GA**

Models-3 Workshop      2015

Graduate Course: Environmental Modeling (Guest Lecture)      2015

Kriging Workshop      2012

Special Topics in Air Pollution (Guest Lecture)      2011

**Other Institutions**

DeKalb County High School Science Workshops for Instructors (Environmental Science), Arabia Mountain High School, GA      2013

A+ Learning Lab, Tucker, GA      2012

**SERVICE****Professional Service**

2021      Reviewer: NASA Earth Science Division

2020-2023      Representation and Equity Committee, American Association for Aerosol Research

2019-      CMAQ Aerosol Committee, Community Multiscale Analysis System

2019      Reviewer: EPA STAR Program

2018      Reviewer: NSF Chemical, Bioengineering, Environmental and Transport Systems (CBET)

2014-Present      Reviewer: *Atmosphere, Atmospheric Environment, Atmospheric Pollution Research, ES&T, ES&T Letters, Environments, IEEE Access, Geoscientific Model Development, International Journal of Environmental Research and Public Health, Journal of Geoscience Education, Journal of the Air and Waste Management Association, Nature Communications, Science Advances, Scientific Reports, Sustainability*

**Departmental Service**

2020-      Member, Space and Planning Committee, Center for Environmental Research and Technology, UC Riverside

2019-      Chair, Marketing and Outreach, UC Riverside (*CEE Newsletter Fall 2020, CEE Twitter, CEE Virtual Open House Fall 2020*)

2019      Organizer: Girls in Engineering, Math, and Science (GEMS) Conference, Center for Environmental Research and Technology, UC Riverside

2019      Producer, CEE Department Promotional Video, UC Riverside

2018-2019      ABET/Undergraduate Committee Member, UC Riverside

2016-17      Nevada Bound, University of Nevada Reno

2016      Recruiter: ASUN Majors and Research Fair, University of Nevada Reno

### University Service

2020-2023	At Large Member, Bourns College of Engineering Executive Committee, UC Riverside
2019-	Committee on Sustainability, UC Riverside
2019	Bourns College of Engineering Strategic Planning, Culture/Experience Committee–Faculty, UC Riverside
2015	Reviewer: President’s Undergraduate Research Award, Georgia Tech
2014-15	Recruiter: Georgia Tech Center for Engineering and Education Diversity
2014	Volunteer: Hands on Future Tech, Georgia Tech

### Community Service

2020	Guest: Policy Chats Podcast, School of Public Policy, Host: Maddie Bunting
2020	Panelist: Online Screening of “Unbreathable: The Flight for Healthy Air,” American Lung Association
2018	Lobbyist: Clean Cars Fly-In, Union of Concerned Scientists, Washington, D.C.
2018	Guest Speaker: Science Champions Monthly Webinar, Union of Concerned Scientists

### PRESS

<https://www.iveylab.com/> for links

2021/06	<b>C&amp;EN Magazine:</b> A local look at air pollution highlights inequalities within cities
2021/04	<b>New York Times:</b> People of color breathe more hazardous Air. The sources are everywhere.
2021/04	<b>Spectrum News:</b> How some SoCal cities work to curtail the environmental impact of COVID-19
2021/01	<b>Grist:</b> Garden of Hope: In the shadow of Amazon, resistance takes root in San Bernardino
2020/12	<b>UCR News:</b> Poorest Inland Empire communities have highest fine particulate matter exposure
2020/09	<b>LA Times:</b> How climate change is fueling record-breaking California wildfires, heat and smog
2020/09	<b>LA Times:</b> Los Angeles suffers worst smog in almost 30 years
2020/09	CE-CERT Faculty Dr. Cesunica Ivey Featured as part of Community Panel on Unhealthy Air
2020/06	<b>National Geographic:</b> As oil prices crash, tankers idled off California–spewing pollution for weeks
2020/05	<b>National Public Radio:</b> Traffic Is Way Down Because of Lockdown, But Air Pollution?
2020/04	<b>CapRadio:</b> The ‘Unprecedented Natural Experiment.’ Stay-At-Home Order Reduces Air Pollution, Offers Clues in Climate Change Fight
2020/04	<b>The Hill:</b> This map shows how much vehicle travel has dropped due to coronavirus
2020/04	<b>Fox News:</b> How coronavirus is impacting pollution across the globe
2020/04	<b>LAist:</b> Vehicle Emissions Have Dropped (Duh), But The Effect On SoCal’s Air Is Complicated
2020/03	<b>UCR News</b> article on the effects of COVID-19 shutdowns on Southern California air quality
2018/05	Public Testimony to EPA Scientific Advisory Board on Glider Vehicles. <a href="https://yosemite.epa.gov/sab/sabproduct.nsf/a84bfee16cc358ad85256ccd006b0b4b/7d239353bcecf85b852582600058b716!OpenDocument&amp;Date=2018-05-31">https://yosemite.epa.gov/sab/sabproduct.nsf/a84bfee16cc358ad85256ccd006b0b4b/7d239353bcecf85b852582600058b716!OpenDocument&amp;Date=2018-05-31</a>

2018/03      Blog Entry via Union of Concerned Scientists: “No Shortcuts for Dirty Diesel”  
<https://blog.ucsusa.org/science-blogger/no-shortcuts-for-dirty-diesel-engines>

### **PROFESSIONAL MEMBERSHIPS**

2019-Present      Association of Environmental Engineering and Science Professors  
2013-Present      American Association for Aerosol Research  
2014-Present      American Geophysical Union  
2014-2018        American Meteorological Society