Eric J. Mei

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EDUCATION

PhD, University of Washington *2023 – present*
Atmospheric and Climate Science, Advisors: Alexander J. Turner, Gregory J. Hakim

MS, Georgia Institute of Technology *2022 – 2023*
Environmental Engineering, Advisor: Armistead (Ted) G. Russell
Thesis: Impacts of Fuel Prices and Regulations on Electricity Generation Emissions and Urban Air Quality

BS, Georgia Institute of Technology *2018 – 2022*
Environmental Engineering, *highest honors*
Minor: Earth and Atmospheric Sciences (Environmental Chemistry)

RESEARCH

Department of Atmospheric and Climate Science, University of Washington *2023 – present*
Graduate Research Assistant (PI: Alexander Turner and Gregory Hakim)
- Developing computationally efficient surrogate models (emulators) for chemistry-climate system
- Performing coupled data assimilation with trained emulators to jointly infer tropospheric composition and physical atmospheric variables

School of Civil and Environmental Engineering, Georgia Institute of Technology *2022 – 2023*
Graduate Research Assistant (PI: Armistead (Ted) Russell)
- Performed thesis research separating impact of natural gas price trends from regulations on air quality
- Sampled ambient mercury at near-road site in joint project with the University of Nevada Reno
- Modeled source contributions to $PM_{2.5}$ composition during Jan-Feb 2022 in Fairbanks, AK

School of Civil and Environmental Engineering, Georgia Institute of Technology *2022*
Research Assistant (PI: Jennifer Kaiser)
- Evaluated existing and novel ethylene oxide (EtO) measurement techniques for Georgia Environmental Protection Division
- Communicated scientific analysis to stakeholders with less technical background in a detailed report

School of Civil and Environmental Engineering, Georgia Institute of Technology *2021 – 2022*
Undergraduate Research Assistant (PI: Xing Xie)
- Identified ability of superabsorbent polymer (PSAP) beads to isolate analytical targets from wastewater
- Helped develop VirusTrack, a commercial method for the use of PSAP beads in COVID-19 surveillance
- Competed in the CEE Entrepreneurial Impact Competition and presented VirusTrack to industry panel

School of Earth and Atmospheric Sciences, Georgia Institute of Technology *2020*
Undergraduate Research Assistant (PI: Yuanzhi Tang)
- Analyzed transformation of contaminants in sewage sludge post-anaerobic digestion
- Obtained N and P concentrations of wastewater samples through spectrophotometry

PUBLICATIONS

7. **Mei, E. J.**, G. J. Hakim, M. Taniguchi-King, D. Stiller, A. J. Turner (2025). Emulating chemistry-climate dynamics with a linear inverse model. *Atmos. Chem. Phys*. doi.org/10.5194/acp-25-15033-2025

6. Gao Z., **E. J. Mei**, X. He, S. Ebelt, D. Q. Rich, A. G. Russell (2025). Accountability Assessment of Source-Specific Impacts of Regulations on Emissions and Air Quality Using Positive Matrix Factorization. *ACS ES&T*. doi.org/10.1021/acs.est.4c12511

5. Gao Z., **E. J. Mei**, X. He, P. K. Hopke, S. Ebelt, D. Q. Rich, A. G. Russell (2025). Multicity accountability and uncertainty assessment of the impacts of regulations on air quality in Atlanta, New York City, and Southern California. *Atmospheric Environment*. doi.org/10.1016/j.atmosenv.2024.120947

4. **Mei, E. J.**, Z. Gao, P. K. Hopke, S. Ebelt, D. Q. Rich, A. G. Russell (2024). Impacts of fuel prices and regulations on electricity generation emissions and urban air quality. *ACS ES&T Air*. doi.org/10.1021/acsestair.3c00034

3. **Mei, E. J.**, A. C. Moore, and J. Kaiser (2023). Suitability of new and existing ambient ethylene oxide measurement techniques for cancer inhalation risk assessment. *Environmental Pollution.* doi.org/10.1016/j.envpol.2023.122481

2. Gustin, M. S., S. M. Dunham-Cheatham, N. Allen, N. Choma, W. Johnson, S. Lopez, A. G. Russell, **E. J. Mei**, O. Magand, A. Dommergue, T. Elgiar (2023). Observations of the chemistry and concentrations of reactive Hg at locations with different ambient air chemistry. *Science of The Total Environment.* doi.org/10.1016/j.scitotenv.2023.166184

1. Chen, W., **E. J. Mei**, and X. Xie (2022). Virus stabilization with enhanced porous superabsorbent polymer (PSAP) beads for diagnostics and surveillance. *ACS ES&T Water.* doi.org/10.1021/acsest water.2c00239

TALKS

2025 Georgia Institute of Technology seminar in Environmental Engineering (invited), "Emulating Chemistry-Climate Dynamics with a Linear Inverse Model."

2025 British Antarctic Survey (invited), "Characteristics of drivers of paleo-methane variability on multidecadal to centennial timescales."

2025 ICECAP Meeting, "Emulating Paleo Chemistry-Climate Dynamics with a Linear Inverse Model."

2024 AGU Fall Meeting, "Discerning Connections between Lifetimes, Modes, Memory, and Timescales in Coupled Chemistry-Climate Models." **Received OSPA (Outstanding Student Presentation Award).**

2023 AQ ATL23 Symposium, "Impacts of Fuel Prices and Regulations on Electricity Generation Emissions and Urban Air Quality." **Awarded Best Talk.**

POSTERS

2024 PCC Summer Institute, "Lifetimes and feedbacks in the coupled chemistry-climate system."

2024 CS4Env Symposium, "Development of a linear inverse model to emulate chemistry-climate dynamics."

SCHOLARSHIPS, FELLOWSHIPS, and AWARDS

DOD National Defense Science and Engineering Graduate (NDSEG) Fellowship	*2025 – present*
ARCS Foundation Fellowship at University of Washington	*2023 – present*
Georgia Power Fellowship at Georgia Institute of Technology	*2022*
Environmental Engineering and Science Foundation Master's Degree Scholarship	*2022*
Brown & Caldwell LGBTQIA+ Scholarship	*2022*
Georgia Engineering Foundation ACEC Scholarship	*2022*
ADP Henry Taub National Merit Scholarship	*2018 – 2022*
Zell Miller Scholarship	*2018 – 2022*

TEACHING

Department of Atmospheric and Climate Science, University of Washington *2025*
Teaching Assistant – Climate and Climate Change
- Designed and led weekly 1-hour discussion activity sessions

Tutoring and Academic Support, Georgia Institute of Technology *2019 – 2020*
Peer-Led Undergraduate Study Session Leader – Physics 1
- Coordinated with professor to lead study sessions for over 400 students twice a week
- Trained in guiding and facilitating learning for students via CRLA Level II certification

College of Sciences, Georgia Institute of Technology *2019*
Undergraduate Teaching Assistant – Physics 1
- Managed and taught the weekly 3-hour lab activities and exercises of three laboratory sections
- Graded weekly laboratory quizzes and reviewed concepts in succinct sessions

MENTORING

Isabella Showman (University of Washington), *2025 – present*, mentored in research

Coco Lipe (University of Washington), *2024 – present*, mentored in research

Max Taniguchi-King (UC Berkeley), *2024* mentored in research, co-author on paper, presented a poster at AGU24, now a data analyst at Data Science and Environment at Berkeley

PROFESSIONAL MEMBERSHIPS

American Geophysical Union