

Jason B.X. Hua

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Education

PhD in Civil and Environmental Engineering (Expected December 2025)

University of Iowa, Iowa City, IA

Advisor: Dr. Keri Hornbuckle

BSE in Civil Engineering (2021)

University of Iowa, Iowa City, IA

Honors in Civil Engineering

Research Experience

Graduate Research Assistant, University of Iowa (August 2021 – Present)

- Led the largest study of airborne PCBs and PCB emissions from materials in schools to date with a team of professors, research scientists, and undergraduates, in collaboration with the Vermont Department of Environmental Conservation (DEC).
 - Collected and extracted samples using passive air sampling, passive emission sampling, accelerated solvent extraction, and gas chromatography in tandem with mass spectrometry (GC-MS/MS).
 - Compiled, maintained, and analyzed large datasets of PCBs and school data using R, SQL, and PgAdmin.
 - Developed extraction and analytical method for non-target analysis of pollutants emitted from building materials in schools using gas chromatography-quadrupole time-of-flight mass spectrometry (GC-QTOF).
 - Major outcomes of this study include identifying key PCB sources in Vermont schools, enabling state officials and school staff to target specific materials for removal, leading to more effective remediation efforts.
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Professional Experience

Civil Engineering Intern, The City of Urbandale, Iowa (May 2018 – August 2018)

- Assisted city engineers and technicians in tasks such as construction project inspection, traffic counts, infrastructure inspection, GIS processing, and surveying.
- Utilized software such as Collector, ArcGIS, and Cartegraph for inspections, managing city utilities, and creating maps.

- Compiled FEMA Preliminary Damage Assessment Report after flash flooding damaged infrastructure.
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Publications

1. **Hua J.B.X.**, Marek R.F., Jones M.P., Erb T.D., Owen, S.C., Hornbuckle K.C. (2025) Widespread emissions of polychlorinated biphenyls from building materials in Vermont schools (Under Review)
 2. **Hua J.B.X.**, Marek R.F., Hornbuckle K.C. (2023) Polyurethane Foam Emission Samplers to Identify Sources of Airborne Polychlorinated Biphenyls (PCBs) from Glass Block Windows and Other Room Surfaces in a Vermont School *Environmental Science & Technology* <https://doi.org/10.1021/acs.est.3c05195>
 3. Bako C.M., Martinez A., Ewald J.M., **Hua J.B.X.**, Ramotowski D.J., Dong Q., Schnoor J.L., and Mattes T.E. (2022) Aerobic Bioaugmentation to Decrease Polychlorinated Biphenyl (PCB) Emissions from Contaminated Sediments to Air *Environmental Science & Technology* <https://doi.org/10.1021/acs.est.2c01043>
 4. Martinez A., **Hua J.B.X.**, Haque E., Hornbuckle K.C., Thorne P.S. (2022) Occurrence and Spatial Distribution of Individual Polychlorinated Biphenyl Congeners in Residential Soil From East Chicago, Southwest Lake Michigan *Science of the Total Environment* <https://doi.org/10.1016/j.scitotenv.2022.157705>
 5. Saktrakulkla P., Lan T., **Hua J.B.X.**, Marek R.F., Thorne P.S., and Hornbuckle K.C. (2020) Polychlorinated Biphenyls in Food *Environmental Science & Technology* <https://doi.org/10.1021/acs.est.0c03632>
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Presentations & Conferences

1. Hua, J.B.X.; Marek, R.F.; Jones, M.P.; Erb, T.D.; Owen, S.C.; Hornbuckle, K.C. “PCBs in school air: Widespread emissions of airborne PCBs from building materials in 99 schoolrooms in Vermont” Society of Environmental Toxicology and Chemistry, Fort Worth, Texas, United States, October 2024 (poster)
2. Hua, J.B.X.; Marek, R.F.; Jones, M.P.; Erb, T.D.; Hornbuckle, K.C. “PCBs in school air: Widespread emissions of airborne PCBs from building materials in 99 schoolrooms in Vermont” American Chemical Society Fall 2024, Denver, Colorado, United States, August 2024 (talk)
3. Hua, J.B.X.; Marek, R.F.; Hornbuckle, K.C. “Polyurethane Foam Emission Samplers to Identify Sources of Airborne Polychlorinated Biphenyls from Glass-Block Windows and Other Room Surfaces in a Vermont School” Superfund Research Program Annual Meeting, Albuquerque, New Mexico, United States, December 2023 (poster)
4. Hua, J.B.X.; Marek, R.F.; Hornbuckle, K.C. “Polyurethane Foam Emission Samplers to Identify Sources of Airborne Polychlorinated Biphenyls from Glass-Block Windows and

Other Room Surfaces in a Vermont School” Society of Environmental Toxicology and Chemistry, Louisville, Kentucky, United States, November 2023 (poster)

5. Hua, J.B.X.; Marek, R.F.; Hornbuckle, K.C. “Direct Measurement of Emissions and Their Impact on Airborne Concentrations of Polychlorinated Biphenyls (PBCs) in a Vermont School” College of Engineering Research Open House, Iowa City, Iowa, United States, April 2023 (poster)
6. Hua, J.B.X.; Marek, R.F.; Hornbuckle, K.C. “Emissions of polychlorinated biphenyls (PCBs) from carpet, tile, painted brick walls, and glass blocks in a school room” American Chemical Society Spring 2023, Indianapolis, Indiana, United States, March 2023 (talk)
7. Hua, J.B.X.; Marek, R.F.; Hornbuckle, K.C. “Data-driven strategies for airborne polychlorinated biphenyl remediation decision making in schools” Superfund Research Program Annual Meeting, Raleigh, North Carolina, United States, December 2022 (poster)
8. Hua, J.B.X.; Marek, R.F.; Hornbuckle, K.C. “Congener-specific vs. Aroclor analysis of polychlorinated biphenyls (PCBs) in school air” Society of Environmental Toxicology and Chemistry, Pittsburgh, Pennsylvania, United States, November 2022 (poster)
9. Hua, J.B.X.; Marek, R.F.; Hornbuckle, K.C. “Polychlorinated biphenyls in building material and school air” American Chemical Society Midwest Regional Meeting, Iowa City, Iowa, United States, October 2022 (talk)
10. Hua, J.B.X.; Hornbuckle, K.C. ”Polychlorinated biphenyl data analysis of Burlington High School, Vermont” College of Engineering Research Open House, Iowa City, Iowa, United States, April 2022 (poster)
11. Hua, J.B.X.; Martinez, A.; Saktrakulkla, P.; Haque, E.; Thorne, P.S.; Hornbuckle, K.C. “Occurrence and spatial distribution of polychlorinated biphenyls in urban soils from East Chicago, Indiana” College of Engineering Research Open House, Iowa City, Iowa, United States, November 2020 (talk)

Technical Skills

- **Software:** Microsoft Office, R Studio, QGIS, PgAdmin, MassHunter Qualitative Analysis, Visual Studio
- **Programming:** R, SQL, MATLAB, HTML, CSS
- **Lab Techniques:** PCB extraction, GC-MS/MS, GC-QTOF

Awards & Fellowships

- C. Ellen Gonter Environmental Chemistry Award, American Chemical Society Division of Environmental Chemistry (2025)

- Ballard and Seashore Dissertation Fellowship, University of Iowa (2025)
 - Center for Global and Regional Environmental Research Graduate Student Travel Award (2024)
 - Iowa Superfund Research Program Travel Award (2023)
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Certifications

- LEED Green Associate – Passed March 2025
 - FEMA Emergency Management Institute IS-00700.b – Passed May 2021
 - FEMA Emergency Management Institute IS-00100.c – Passed March 2021
 - Fundamentals of Engineering (FE) Exam, State of Iowa – Passed January 2021
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References

Available upon request.