

# Amanda Giang Ph.D., P.Eng.

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## PROFESSIONAL APPOINTMENTS

**Assistant Professor** 01/2018 - present  
**Canada Research Chair (Tier 2) in Environmental Modelling for Policy** 07/2023 - present  
University of British Columbia  
Institute for Resources, Environment & Sustainability and Department of Mechanical Engineering

**Postdoctoral Associate** 09/2017-12/2017  
Massachusetts Institute of Technology, Institute for Data, Systems and Society

**Visiting Postdoctoral Fellow** 09/2017-12/2017  
John F. Kennedy School of Government, Harvard University, Program on Science, Technology and Society

## EDUCATION

**PhD, Institute for Data, Systems and Society**, Massachusetts Institute of Technology, June 2017  
**M.S., Technology and Policy**, Massachusetts Institute of Technology, 2013  
**B.A.Sc. with Honours, Engineering Science**, University of Toronto, 2011

## RESEARCH INTERESTS

Environmental Policy Analysis, Environmental Health and Justice, Science and Technology Policy, Air Quality and Climate Interactions, Systems Modelling, Mixed Methods Research

## SELECTED AWARDS AND HONOURS

Killam Faculty Research Prize (2024); Canada Research Chair (T2) in Environmental Modelling for Policy (2023-2028); *ACS Environmental Au* Rising Stars in Environmental Research (2024); Emerging Investigator Series, *Environmental Science: Processes & Impacts* (2022); UBC Sustainability Fellow (2018-2021); Best Paper Nominee, *Environmental Science: Processes and Impacts* for Giang et al. (2018), and Perlinger et al. (2018); Best Environmental Policy Paper in *Environmental Science & Technology* for Wolfe et al. (2016) and Giang et al. (2015)

## PUBLICATIONS

*underlined name indicates direct supervisee student/trainee; \* indicates committee supervision student/trainee; § indicates co-first authors*

### Peer-Reviewed Journal Articles

41. Bhandari, S., \*de Ferreyro Monticelli, D., Xie, K., Ramkairsingh, A., Maher, R., Eykelbosh, A., Henderson, S., Zimmerman, N. and **Giang A.** 2024. Odor, air quality, and well-being: understanding the urban smellscape using crowd-sourced science. *Environmental Research: Health*, In Press. <https://doi.org/10.1088/2752-5309/ad5ded>
40. Gillies, E.J., Li, M., Christensen, V., Sora, K.J., Hoover, C., Loseto, L.L., Cheung, W.C., Angot, H., **Giang, A.** 2024. Exploring drivers of historic mercury trends in beluga using an ecosystem modeling approach. *ACS Environment Au*. In Press. <https://doi.org/10.1021/acsenvironau.3c00072>
39. \*Bhatt, R., Javed, B., **Giang, A.** and Kandlikar, M. 2024. Equitable charging infrastructure for electric vehicles: access and experience. *Progress in Energy*, 6(3):p.033006. <https://doi.org/10.1088/2516-1083/ad4b8f>

38. Sora, K.J., Wabnitz, C., Steiner, N.S., Sumaila, U.R., Hoover, C., Niemi, A., Loseto, L.L., Li, M., **Giang, A.**, Gillies, E., Reygondeau, G., Cheung, W.W.L. 2024. Historical climate drivers and species' ecological niche in the Beaufort Sea food web. *ICES Journal of Marine Science*, In Press. <https://doi.org/10.1093/icesjms/fsae062>
37. Ewing, C., Bertoldi, R., Boyd, D.R. and **Giang, A.** 2024. Patterns of air pollution enforcement in Canada: misalignment of priorities and outcomes. *Elementa: Science of the Anthropocene*, 12(1):p.00062. <https://doi.org/10.1525/elementa.2023.00062>
36. **Giang, A.**, Edwards, M.R., Fletcher, S.M., Gardner-Frolick, R., Gryba, R., Mathias, J.-D., Venier-Cambrom, C., Anderies, J.M., Berglund, E., Carley, S., Erickson, J.S.; Grubert, E. Hadjimichael, A., Hill, J., Mayfield, E., Nock, D., Pikok, K.K.; Saari, R.K., Samudio Lezcano, M., Siddiqi, A., Skerker, J.B., Tessum, C.W., 2024. Equity and modeling in sustainability science: Examples and opportunities throughout the process. *Proceedings of the National Academy of Sciences*, 121(13), p.e2215688121. <https://doi.org/10.1073/pnas.2215688121>
35. Steel, D., Phillips, C., **Giang, A.** and Mintz-Woo, K., 2024. A forward-looking approach to climate change and the risk of societal collapse. *Futures*, p.103361. <https://doi.org/10.1016/j.futures.2024.103361>
34. Rodgers, T.F.M., Spraakman, S., Wang, Y., Johannessen, C., Scholes, R.C. and **Giang, A.**, 2024. Bioretention Design Modifications Increase the Simulated Capture of Hydrophobic and Hydrophilic Trace Organic Compounds. *Environmental Science & Technology*, 58(12):pp. 5500-5511. <https://doi.org/10.1021/acs.est.3c10375>
33. Javed, B., Kandlikar, M. and **Giang, A.**, 2024. Variability in costs of electrifying passenger cars in Canada. *Environmental Research: Infrastructure and Sustainability*, 4(1), p.015008. <https://doi.org/10.1088/2634-4505/ad253e>
32. \*Jain, S., Gardner-Frolick, R., Martinussen, N., Jackson, D., **Giang, A.** and Zimmerman, N. Identification of Neighborhood Hotspots via the Cumulative Hazard Index: Results from a Community-Partnered Low-cost Sensor Deployment. *Geohealth*, 8(2):e2023GH000935. <https://doi.org/10.1029/2023GH000935>
31. Selin, N.E., **Giang, A.** and Clark, W.C. Progress and Opportunities for Modeling Dynamic Systems for Sustainable Development. *Proceedings of the National Academy of Sciences*, 120(40):e2216656120. <https://doi.org/10.1073/pnas.2216656120>
30. Rodgers, T.F.M.<sup>§</sup>, Wang, Y.<sup>§</sup>, Humes, C., Jeronimo, M., Johannessen, C., Spraakman, S., **Giang, A.** and Scholes, R.C. 2023. Bioretention cells provide a tenfold reduction in 6PPD-quinone mass loadings to receiving waters: Evidence from a field experiment and modeling. *Environmental Science & Technology Letters*, 10(7), pp. 582-588. <https://doi.org/10.1021/acs.estlett.3c00203>
29. Laskar, I.I. and **Giang, A.** 2023. Policy approaches to mitigate in-use methane emissions from natural gas use as a marine fuel. *Environmental Research: Infrastructure and Sustainability*, 3:025005. <https://doi.org/10.1088/2634-4505/accf33>
28. Elder, S., Wittman, H., and **Giang, A.** 2023. Building sustainability research competencies through scaffolded pathways for undergraduate research experience. *Elementa: Science of the Anthropocene*, 11:1. <https://doi.org/10.1525/elementa.2022.00091>
27. Chakraborty, M., **Giang, A.** and Zimmerman, N. 2023. Performance evaluation of portable dual-spot micro-aethalometers for source identification of Black Carbon aerosols: Application to wildfire smoke and traffic emissions in the Pacific Northwest. *Atmospheric Measurement Techniques*, 16:2333-2352. <https://doi.org/10.5194/amt-16-2333-2023>
26. Rodgers, T.F.M., **Giang, A.**, Diamond, M., Gillies, E. and Saini, A., 2023. Emissions and Fate of Organophosphate Esters in Outdoor Urban Environments. *Nature Communications*, 14:1175. <https://doi.org/10.1038/s41467-023-36455-7>
25. \*Bhatt, R., **Giang, A.** and Kandlikar, M., 2023. Incentivizing alternatives to agricultural waste burning in Northern India: trust, awareness, and access as barriers to adoption. *Environment Systems and Decisions*, 43(3), pp.358-370. <https://doi.org/10.1007/s10669-022-09892-w>

24. Ramachandran, A., Abdi, K., **Giang, A.**, Gladwin, D. and Ellis, N., 2022. Transdisciplinary and interdisciplinary programmes for collaborative graduate research training. *Educational Review*, 76(4):pp.996-1013. <https://doi.org/10.1080/00131911.2022.2134312>
23. Li, M., Gillies, E.J., Briner, R., Hoover, C.A., Sora, K.J., Loseto, L.L., Walters, W.J., Cheung, W. and **Giang, A.**, 2022. Investigating the dynamics of methylmercury bioaccumulation in the Beaufort Sea Shelf food web: a modeling perspective. *Environmental Science: Processes and Impacts*, 24(7):pp.1010-1025. <https://doi.org/10.1039/D2EM00108J>
22. Barnard-Chumik, H., Cappe, N. and **Giang, A.**, 2022. Knowledge Hierarchy and Mechanisms of Power in Environmental Impact Assessment: Insights from the Muskrat Falls Hydroelectric Project. *The Canadian Geographer/Le Géographe canadien*, 66(3):pp.462-484. <https://doi.org/10.1111/cag.12758>
21. **Giang, A.**<sup>§</sup>, Boyd, D.R.<sup>§</sup>, Ono, A.J. and McIlroy-Young, B., 2022. Exposure, access, and inequities: Central themes, emerging trends, and key gaps in Canadian environmental justice literature from 2006 to 2017. *The Canadian Geographer/Le Géographe canadien*. 66(3):pp.434-449. <https://doi.org/10.1111/cag.12754>
20. \*de Ferreyro Monticelli, D., Bhandari, S., Eykelbosh, A., Henderson, S.B., **Giang, A.** and Zimmerman N., 2022. Cannabis Cultivation Facilities: A Review of Their Air Quality Impacts from the Occupational to Community Scale. *Environmental Science & Technology*, 56(5):pp. 2880-2896. <https://doi.org/10.1021/acs.est.1c06372>
19. Gardner-Frolick, R., Boyd, D.R. and **Giang, A.**, 2022. Selecting Data Analytic and Modeling Methods to Support Air Pollution and Environmental Justice Investigations: A Critical Review and Guidance Framework. *Environmental Science & Technology*, 56(5):pp. 2843-2860. <https://doi.org/10.1021/acs.est.1c01739>
18. \*Rossa-Roccor, V., **Giang, A.**, Kershaw P., 2021. Framing climate change as a human health issue – enough to tip the scale in climate policy? *The Lancet Planetary Health*, 5(8):e553-e559. [https://doi.org/10.1016/S2542-5196\(21\)00113-3](https://doi.org/10.1016/S2542-5196(21)00113-3)
17. Edwards, M.R., **Giang, A.**, Macey, G.P., Magaivi, Z., Nicholas, D., Ackley, B., Schulman, A., 2021. Repair Failures Call for New Policies to Tackle Leaky Natural Gas Distribution Systems. *Environmental Science & Technology*. 55(10), pp. 6561-6570. <https://doi.org/10.1021/acs.est.0c07531>
16. \*Vazquez, M., McIlroy-Young, B., Steel, D., **Giang, A.** and Öberg, G., 2021. Exploring Scientists' Values by Analyzing How They Frame Nature and Uncertainty. *Risk Analysis*. 41(11):pp.2094-2111. <https://doi.org/10.1111/risa.13701>
15. **Giang, A.** and Castellani, K., 2020. Cumulative air pollution indicators highlight unique patterns of injustice in urban Canada. *Environmental Research Letters*, 15(12):p.124063. <https://doi.org/10.1088/1748-9326/abcac5>
14. Mulvaney, K.M., Selin, N.E., **Giang, A.**, Muntean, M., Li, C.T., Zhang, D., Angot, H., Thackray, C.P. and Karplus, V.J., 2020. Mercury Benefits of Climate Policy in China: Addressing the Paris Agreement and the Minamata Convention Simultaneously. *Environmental Science & Technology*, 54(3):pp.1326-1335. <https://doi.org/10.1021/acs.est.9b06741>
13. Angot, H., Hoffman, N., **Giang, A.**, Thackray, C.P., Hendricks, A.N., Urban, N.R. and Selin, N.E., 2018. Global and local impacts of delayed mercury mitigation efforts. *Environmental Science & Technology*, 52(22):pp.12968-12977. <https://doi.org/10.1021/acs.est.8b04542>
12. **Giang, A.**, Song, S., Muntean, M., Janssens-Maenhout, G., Harvey, A., Berg, E. and Selin, N.E., 2018. Understanding factors influencing the detection of mercury policies in modelled Laurentian Great Lakes wet deposition. *Environmental Science: Processes & Impacts*, 20(10):pp.1373-1389. <https://doi.org/10.1039/C8EM00268A>
11. Muntean, M., Janssens-Maenhout, G., Song, S., **Giang, A.**, Selin, N.E., Zhong, H., Zhao, Y., Olivier, J.G., Guizzardi, D., Crippa, M. and Schaaf, E., 2018. Evaluating EDGARv4. tox2 speciated mercury emissions ex-post scenarios and their impacts on modelled global and regional wet deposition patterns. *Atmospheric Environment*, 184:pp.56-68. <https://doi.org/10.1016/j.atmosenv.2018.04.017>

10. Perlinger, J.A., Urban, N.R., **Giang, A.**, Selin, N.E., Hendricks, A.N., Zhang, H., Kumar, A., Wu, S., Gagnon, V.S., Gorman, H.S. and Norman, E.S., 2018. Responses of deposition and bioaccumulation in the Great Lakes region to policy and other large-scale drivers of mercury emissions. *Environmental Science: Processes & Impacts*, 20(1):pp.195-209. <https://doi.org/10.1039/C7EM00547D>
9. Kwon, S.Y., Selin, N.E., **Giang, A.**, Karplus, V.J. and Zhang, D., 2018. Present and future mercury concentrations in Chinese rice: insights from modeling. *Global Biogeochemical Cycles*, 32(3):pp.437-462. <https://doi.org/10.1002/2017GB005824>
8. Stokes, L.C., **Giang, A.** and Selin, N.E., 2016. Splitting the south: China and India's divergence in international environmental negotiations. *Global Environmental Politics*, 16(4):pp.12-31. [https://doi.org/10.1162/GLEP\\_a\\_00378](https://doi.org/10.1162/GLEP_a_00378)
7. Wolfe, P.J., **Giang, A.**, Ashok, A., Selin, N.E. and Barrett, S.R., 2016. Costs of IQ loss from leaded aviation gasoline emissions. *Environmental Science & Technology*, 50(17):pp.9026-9033. <https://doi.org/10.1021/acs.est.6b02910>
6. Song, S., Selin, N.E., Gratz, L.E., Ambrose, J.L., Jaffe, D.A., Shah, V., Jaeglé, L., **Giang, A.**, Yuan, B., Kaser, L. and Apel, E.C., 2016. Constraints from observations and modeling on atmosphere-surface exchange of mercury in eastern North America. *Elementa: Science of the Anthropocene*, 4:pp. 000100. <https://doi.org/10.12952/journal.elementa.000100>
5. **Giang, A.** and Selin, N.E., 2016. Benefits of mercury controls for the United States. *Proceedings of the National Academy of Sciences*, 113(2):pp.286-291. <https://doi.org/10.1073/pnas.1514395113>
4. **Giang, A.**, Stokes, L.C., Streets, D.G., Corbitt, E.S. and Selin, N.E., 2015. Impacts of the Minamata Convention on mercury emissions and global deposition from coal-fired power generation in Asia. *Environmental Science & Technology*, 49(9):pp.5326-5335. <https://doi.org/10.1021/acs.est.5b00074>
3. Weiss-Penzias, P., Amos, H.M., Selin, N.E., Gustin, M.S., Jaffe, D.A., Obrist, D., Sheu, G.R. and **Giang, A.**, 2015. Use of a global model to understand speciated atmospheric mercury observations at five high-elevation sites. *Atmospheric Chemistry and Physics*, 15:pp.1161-1173. <https://doi.org/10.5194/acp-15-1161-2015>
2. Csiszar, S.A., Daggupaty, S.M., Verkoeyen, S., **Giang, A.** and Diamond, M.L., 2013. SO-MUM: a coupled atmospheric transport and multimedia model used to predict intraurban-scale PCB and PBDE emissions and fate. *Environmental Science & Technology*, 47(1):pp.436-445. <https://doi.org/10.1021/es3033023>
1. Robson, M., Melymuk, L., Csiszar, S.A., **Giang, A.**, Diamond, M.L. and Helm, P.A., 2010. Continuing sources of PCBs: the significance of building sealants. *Environment International*, 36(6):pp.506-513. <https://doi.org/10.1016/j.envint.2010.03.009>

### Book Chapters

1. Gorman, H.S., Gagnon, V.S., **Giang, A.**, Perlinger, J.A. and Urban, N.R., 2019. Policy, science and transdisciplinary research: when will it be safe to eat as much fish as desired?. In *A Research Agenda for Environmental Management*. ed. Halvorsen KE, Schelly C, Handler R, Knowlton JL. Edward Elgar Publishing: 93-106.

### Selected Other Publications

4. Boyd, D., Chan, K., **Giang, A.**, Ramankutty, N. "A healthy environment is a universal human right, and Canada needs to step up." *The Globe and Mail*, Opinion, August 15, 2022.
3. **Giang, A.**, Zimmerman, N., Kirchen, P., Rysanek, A. How do we educate mechanical engineers to address the climate crisis? *Canadian Society for Mechanical Engineers Bulletin*, Spring 2022, pp.13-14.
2. Eykelbosh, A, Maher, R., \*de Ferreyro Monticelli, D., Ramkairsingh, A., Henderson, S., **Giang, A.**, Zimmerman, N., 2021. Elucidating the community health impacts of odours using citizen science and mobile monitoring. *Environmental Health Review: The Journal of the Canadian Institute of Public Health Inspectors*. 64(2), pp.24-27.

1. Selin, N.E. and **Giang A.** “Are tighter EPA controls on mercury pollution worth it?” The Conversation. February 9, 2016.

### **SELECTED CURRENT RESEARCH FUNDING**

*Total grant funding as PI/Co-PI ≈ \$4.4M (CAD); Total grant funding including Co-I ≈ \$11.4M (CAD)*

**Environment and Climate Change Canada Climate Action and Awareness Fund, 2023-2027.** *Urban freight system emissions: improved characterization for mitigation planning, \$2,583,660, Co-PI [w/ P. Kirchen (Co-PI), and 5 other Co-Is]*

**Environment and Climate Change Canada Grants and Contribution, 2023-2026.** *Development of methods to represent ambient levels and cumulative impacts of air pollutant mixtures, \$140,000, PI.*

**Natural Sciences and Engineering Research Council Alliance Missions Grant, 2023-2025.** *Community-based alternative urban transportation decarbonization pathways and co-benefits for climate resilience, air quality, health, and equity, \$979,000, Co-I [w/ V. Hosseini (PI) and 3 other Co-Is]*

**Mitacs Accelerate and Clear Seas Centre for Responsible Marine Shipping, 2022-2025.** *Pathways to Zero Impacts Shipping, \$285,000, PI [w/ T. Satterfield (Co-I)]*

### **INVITED LECTURES AND PRESENTATIONS**

Weston Roundtable Lecture, Center for Sustainability and the Global Environment, University of Wisconsin Madison (April 2024); Air-Health Webinar Series, Health Canada (virtual, March 2024); Green College Seminar Series, University of British Columbia (February 2024); UC Berkeley, Air Pollution and Models for Environmental Justice Workshop (virtual, December 2023); UK-BC/Canada Green Shipping Conference, British Consulate-General Vancouver (May 2023); American Chemical Society Spring Conference (virtual, March 2023); Frontiers in Atmospheric Chemistry Seminar Series, MIT, UC Davis, University of Toronto, University of Michigan, Wageningen University, Colorado State University (virtual, September 2022); Energy and Environment Keynote, Canadian Society for Mechanical Engineers Annual Congress (June 2022); Air Quality Research Division Seminar, Environment and Climate Change Canada (virtual, June 2022); Canadian Association of Aerosol Researchers Seminar (virtual, June 2022); American Geophysical Union Fall Meeting (virtual, December 2021); Clean Air Strategic Alliance Webinar Series: Approaches and Solutions for Canadian Ambient Air Quality Standards Achievement in Alberta (virtual, October 2021); Energy-Water-Environment-Sustainability Seminar, University of Illinois at Urbana-Champaign, Department of Civil & Environmental Engineering (virtual, March 2021); Environmental Systems Engineering Seminar, University of British Columbia, Department of Civil Engineering (virtual, November 2020); Inter-Agency Air Quality Meeting (February 2020); BC Lung Association Annual Air Quality & Health Workshop (February 2020); Departmental Colloquium, University of British Columbia, Department of Geography (January 2020); American Geophysical Union Fall Meeting (December 2019); Mercury Australia Symposium, Australian National University (November 2019); Institute for Operations Research and the Management Sciences Annual Meeting (October 2019); University of Victoria, Department of Civil Engineering (April 2019); Canadian Electricity Association Sustainable Electricity Steering Committee (March 2018); Women & Minority Visiting Lecture, Michigan Technological University, Department of Civil and Environmental Engineering (October 2017); University of Toronto, Southern Ontario Centre for Atmospheric Aerosol Research (November 2016); Climate and Health Seminar, Columbia University, Mailman School of Public Health (October 2016).

### **RESEARCH SUPERVISION**

#### **PhD Students, n=8**

*Shuoqi Ren, Resources, Environment & Sustainability (2023-present)*

*Jasmine Sharifi, Mechanical Engineering (2023-present) [co-supervised with N. Zimmerman]*

*Rei Bertoldi, Resources, Environment & Sustainability (2022-present)*

*Manvi Bhalla, Resources, Environment & Sustainability (2022-present) [co-supervised with L. Harris]*

*Rivkah Gardner-Frolick, Mechanical Engineering (2019-2024)*

*Imranul Laskar*, Resources, Environment & Sustainability (2019-present), now Project Engineer, Environment and Climate Change Canada

*Bassam Javed*, Resources, Environment & Sustainability (2018-present) [co-supervised with M. Kandlikar], now Program Engineer, Environment and Climate Change Canada

*Mrimoy Chakraborty*, Mechanical Engineering (2018-present) [co-supervised w/ N. Zimmerman]

#### **MSc, MAsc, MA Students, n=6**

*Zixuan Liu*, Resources, Environment & Sustainability (2023-present)

*Shuoqi Ren*, Resources, Environment & Sustainability (2021-2023), now PhD Student at UBC

*Emma Gillies*, Resources, Environment & Sustainability (2020-2022), now Biologist, Fisheries and Oceans Canada

*Erika Luna-Perez*, Resources, Environment & Sustainability (2019-2021) [co-supervised with N. Ramankutty], now Policy Analyst, International Institute of Sustainable Development, Economic Law and Policy Program

*Claire Ewing*, Resources, Environment, & Sustainability (2019-2021) [co-supervised with D. Boyd], now Senior Policy and Planning Analyst with Metro Vancouver in the Air Quality and Climate Action Services Department

*Hannah Barnard-Chumik*, Resources, Environment & Sustainability (2018-2020), now Medical Student, Queen's University

#### **Postdoctoral Fellows, n=5**

*Simone Philpot*, Resources, Environment & Sustainability (2022-present)

*Tim F.M. Rodgers*, Resources, Environment & Sustainability (2021-2023), now Postdoctoral Fellow at Department of Civil Engineering, UBC

*Sahil Bhandari*, Mechanical Engineering (2021-2023), now Atkinson Postdoctoral Science Fellow, Environmental Defense Fund

*Sara Elder*, Resources, Environment & Sustainability (2019-2021) [co-supervised with H. Wittman], now Policy Advisor, International Institute for Sustainable Development, Standards Workstream and Adjunct Professor, UBC

*Mi-Ling Li*, Resources, Environment & Sustainability (2019), now Assistant Professor, University of Delaware

#### **Undergraduate Students, n=18**

Nika Martinussen (2023-2024; 2021-2022); Joaquín Gutiérrez-Díaz (2023-2024); Ivan Orozco (2023); Carl Chen (2022-2023); Kana Kawanishi (2022-2023); Karen Xie (2021-2022); Suzzanne Nyce (2021); Rochelle Maher (2020-2021); Sophie Thornton (2020); Ashton Kerr (2020); Joy Du (2020); Zeneca Kubota (2020); Rebecca Barron (2020); Gabby Doebeli (2019-2020); Natalie Cappe (2019-2020); Chrysen Park (2019); Erika Luna (2018); Carlina Kim (2018-2019)

#### **Research Assistants, n=6**

Hugo Dignoes (2023); Roshni Kumari (2023-2024) [co-supervised with C. Sielmann]; Aishwarya Ramachandran (2021-2022) [co-supervised with N. Ellis]; Bronwyn McIlroy-Young (2019-2020); Kaitlin Castellani (2018-2019); Avery Holliday (2019)

## TEACHING

### Instructor

RES 520/PPGA 584, *Policy Responses to Climate Change*, UBC, W2021 T2, W2023 T1  
Resources, Environment & Sustainability and Public Policy and Global Affairs, Graduate Lecture

CEEN 525, *Energy Policy*, UBC, W2019 T1, W2020 T1, W2021 T1, W2022 T1  
Clean Energy Engineering Master's Program; Graduate Lecture

ENVR 410, *Energy, Environment and Society*, UBC, W2018 T2, W2019 T2, W2020 T2, W2021 T2, W2022 T2, W2023 T1  
Environmental Sciences; Undergraduate Lecture

## PROFESSIONAL ACTIVITIES

### Committees

*Strathcona Area Air Quality Study Steering Committee, Member* (November 2020 – Present)  
Community-based air quality study led by the Strathcona Residents' Association and the Vancouver Fraser Port Authority on potential impacts from port operation and expansions on local air quality.

*Equity Working Group Co-Lead, MultiSector Dynamics Community of Practice* (2024 - Present)

### Editorial

Special Feature Guest Co-Editor: Modeling Dynamic Systems for Sustainable Development, *Proceedings for the National Academy of Sciences* (2021–2024)

Virtual Special Feature on Environmental Justice Guest Co-Editor, *Environmental Science & Technology* (2023)

Early Career Editorial Advisory Board Member for *Environmental Science & Technology*, American Chemical Society (2021-Present)

Editorial Board Member for *Environmental Research Communications*, Institute of Physics (2019-Present)

### Ad hoc Reviewer

Journals: Science of the Total Environment; Nature Communications; Journal of Cleaner Production; Atmospheric Chemistry & Physics; Critical Reviews in Environmental Science & Technology; Environmental Pollution; Environmental Science & Technology; Atmospheric Environment; Nature Sustainability; Journal of Environmental Engineering; Journal of Environmental Management; Journal of Great Lakes Research; Geophysical Research Letters; Energy Research & Social Science; Cities; Environmental Science & Technology Letters; Proceedings of the National Academy of Sciences; One Earth; Nature Machine Intelligence; Sustainability Analytics and Modeling; Progress in Energy

Grants: US National Oceanographic and Atmospheric Administration Atmospheric Chemistry, Carbon Cycle, and Climate Program; Social Sciences and Humanities Research Council (SSHRC), New Frontiers in Research Program (External Reviewer); Natural Sciences and Engineering Research Council Discovery Grant Program (External Reviewer); NSERC Discovery Horizons (External Reviewer), US National Science Foundation Atmospheric Chemistry Program

### Conference Organization

*Equity in MSD Research Working Group Facilitator*, Multi-Sector Dynamics Workshop 2023, Davis, CA, USA, October 6-8, 2023

*Co-organizer, Understanding and Reducing Urban Freight Emissions Workshop*, Vancouver, BC, February 22, 2023

*Session Chair - Addressing Equity Challenges in the Renewable Energy Transition*, Association for Public Policy Analysis and Management Fall Research Conference, Washington, D.C., November 17, 2022.

*Session Convener and Chair - Bridging systems modeling advances across socio-ecological domains, American Geophysical Union Fall Meeting, December 2020 (online), December 2021 (online), December 2022 (hybrid), December 2023 (hybrid)*

*Co-organizer - Environmental Justice Knowledge Exchange and Workshop, Vancouver, BC, April 24-25, 2019*

*Oral Session Co-Chair – Integration of Chemical Transport and Dispersion Models to Improve Spatiotemporal Air Pollution  
Joint Annual Meeting of the International Society of Exposure Science and the International Society for Environmental Epidemiology, Ottawa, ON, August 28, 2018*

*Co-facilitator and organizer – Charrette to Codesign Tools for Public Education on Ann Arbor’s Dioxane Plume, University of Michigan Sustainability Gases Galaxy Conference, Ann Arbor, MI, June 9, 2018.*

*Local Organizing Committee Member – Community Engagement Committee, 13th International Conference on Mercury as a Global Pollutant, Providence, RI, July 16-21, 2017*

## **UBC Service**

UBCO President’s Research Chair Adjudication Committee (2024); School for Population and Public Health, Assistant Professor in Global Health Search Committee, Member (2023-2024); UBC Centre for Climate Justice Student Engagement Working Group Member (2022-Present); UBC Climate Emergency Fund Advisory Committee, Member (2021); UBC Climate Emergency Teaching & Learning Working Group, Member (2020); Spring Graduate Awards Committee, Science and Health, Member, Faculty of Graduate and Postdoctoral Studies, UBC (2020); Faculty of Science Inclusion, Diversity, Equity Advisory Committee (2020); Faculty of Science Curriculum Committee, Member (2018); IRES Decolonization, Equity, Diversity and Inclusion Committee Chair (2023-Present); ENVR Curriculum Internal Advisory Group, IRES Representative (2023-Present); IRES Admissions Committee, Member (2022); IRES Director Search Committee, Member (2021); IRES Graduate Awards Committee, Member (2018, 2021); IRES Communications Committee, Member (2018-2021); IRES Merit & PSA Committee, Member (2020-2023); MECH General Faculty Search Committee Member (2020-2021); MECH EDI Committee, Member (2019-Present); MECH Merit & PSA Committee, Member (2019)

## **SELECTED OUTREACH AND COMMUNITY ENGAGEMENT**

**Research for the Front Lines, What Matters in Our Valley, Expert Reviewer** (2024) Supporting submissions of comments to BC Environmental Assessment Office, on Texas coal mine project.

**Expert Witness in Mathur et al. v. Her Majesty in Right of Ontario** (retained by Ecojustice Canada from August 2019 to 2022) Youth-led climate litigation regarding the Cap and Trade Cancellation Act.

**Selected Media Interviews:** The Narwhal, “A portrait of pollution around Canada’s busiest port,” May, 2024; CBC, “Vulnerable groups need more support with poor Toronto air quality, say climate experts,” June 2023

**Selected Public Lectures:** Let’s talk about air pollution and dementia, Alzheimer’s Society of Canada, Dementia Talks! Canada Series, October 2023

## **PROFESSIONAL MEMBERSHIPS**

Engineers & Geoscientists British Columbia  
International Society for Exposure Science  
American Geophysical Union  
American Chemical Society