

Liton Chakraborty

+1 (519) 781-3259 | litonch@yorku.ca | [liton-chakraborty](https://www.yorku.ca/liton-chakraborty) | [SagePolicyProfiles](https://sagepub.com/profile/liton-chakraborty) | [Google Scholar](https://scholar.google.com/citations?user=...) | [VOR](#) | [Adjunct Faculty & Visiting Scholar](#)

PROFESSIONAL SUMMARY:

- Policy-oriented researcher specializing in urban climate impacts, human-environment systems, and distributive climate / environmental justice within multi-level governance contexts.
- Expertise in equity-informed climate risk, social vulnerability, and urban resilience assessment aligned with EU climate adaptation and cohesion policy priorities.
- Advanced proficiency in GIS, spatial modeling, and climate-health analytics to support evidence-based regional and urban policymaking.
- Experienced educator and analyst across geography, planning, statistics, and socio-economic data methods relevant to policy evaluation and impact assessment.
- Developer of data-driven decision-support tools translating scientific research into actionable policy insights.
- Strong record of high-impact, peer-reviewed publications and interdisciplinary collaboration supporting North American, European and transatlantic policy dialogue.

RESEARCH INTERESTS:

- Urban climate impacts on populations, critical infrastructure, and the built environment within multi-level governance frameworks.
- Human-environment interactions shaping climate vulnerability and adaptive capacity in cities and metropolitan regions.
- Climate change implications for public health, community well-being, and continuity of essential services relevant to resilience and preparedness strategies.
- Climate justice, social inequality, and disproportionate exposure to climate and environmental hazards in line with community cohesion and equity objectives.
- Application of geospatial, statistical, and predictive modeling to support evidence-based urban climate risk assessment and policy design.

EDUCATION:

Oct 2021	Ph.D., Geography & Environmental Management, University of Waterloo
<i>Dissertation title:</i>	Social equity dimensions of flood risk management in Canada
<i>Field(s):</i>	Distributional Impacts of Flood Risk on Socioeconomically Disadvantaged and Marginalized Groups Distributional Environmental Justice Social Justice and Equity Implications of Climate Change Risk Social Vulnerability GIS-based Hazard & Exposure Analysis Integrated Flood Risk Assessment
Aug 2014	M.A., Economics (course-based, one year), University of Waterloo
<i>Research title:</i>	Do Budget Deficits Induce Growth in a Rapidly Developing Market-Based Economy? An Empirical Investigation in Bangladesh
<i>Field(s):</i>	Applied Macroeconomics, Macro-Econometrics
Jun 2012	MSc., Business & Economics (thesis-based, two years), Uppsala University
<i>Thesis title:</i>	Electoral Success in Swedish Municipal Councils: The Role of Occupation and Politicians' Characteristics
<i>Field(s):</i>	Public and Political Economics, Applied Micro Econometrics
Aug 2004	MSS & BSS (4-years honors), Economics, Shahjalal University of Sci. & Tech.

EMPLOYMENT:

Aug 2025 – Jul 2027	Visiting Scholar , School of Administrative Studies, Faculty of Liberal Arts & Professional Studies, York University, Toronto, ON <ul style="list-style-type: none">▪ Conduct collaborative research on climate risk, social vulnerability, and urban resilience.▪ Mentor graduate students working on climate adaptation and disaster management.▪ Support development of research projects integrating climate data, equity analysis, and policy applications.▪ Contribute to seminars, workshops, and interdisciplinary initiatives within the Faculty of Liberal Arts & Professional Studies.
May 2025 – Apr 2026	Adjunct Faculty Member , Graduate Program in Disaster & Emergency Management (DEM), Faculty of Graduate Studies, York University, Toronto, ON <ul style="list-style-type: none">▪ Collaborate with graduate students, faculty members, and researchers, and contribute to the education and mentorship of the next generation of leaders in the field of DEM.
Dec 2024 –	Policy Analyst , Strategic & Service Policy Branch, Employment and Social Development Canada, Toronto, ON <ul style="list-style-type: none">▪ Analyze socio-economic and climate vulnerabilities affecting urban populations.▪ Integrate climate hazard data and climate resilience analysis with social policy frameworks.▪ Provide equity-focused, data-driven recommendations for federal social policy.▪ Advance evidence-based policy through research and engagement with diverse stakeholders.
Oct 2024 – April 2025	Climate Change Adaptation Advisor , Nova Scotia Department of Environment and Climate Change, Halifax, NS <ul style="list-style-type: none">▪ Supported urban and community adaptation planning.▪ Assessed municipal vulnerability to climate extremes.▪ Advised evidence-based strategies for climate resilience.
Sep 2023 -	Founder & Principal Consultant , Climatic and Societal Resiliency , Kitchener, ON <ul style="list-style-type: none">▪ Lead interdisciplinary, data-driven research on climate adaptation, disaster risk reduction, socio-economic analysis and societal resilience.

- Provide expert research consulting for clients to support informed decision-making.
 - Develop sustainable and inclusive solutions by bridging scientific research with policy development and community engagement.
 - Serve as a subject matter expert in climate equity, environmental justice, and social vulnerability.
 - Analyze environmental hazards, climate risks, and disaster policies to advise on resilience strategies.
- Dec 2020 – Dec 2024 **Senior Policy Analyst**, Emergency Management & Programs Branch, Public Safety Canada, Ottawa, ON
- Led integrated climate risk assessments for urban flood, wildfire, and multi-hazard exposure.
 - Evaluated climate impacts on healthcare and emergency infrastructure.
 - Applied GBA+ and equity frameworks to national flood insurance and relocation program.
 - Developed national scale social vulnerability and resilience mapping tools.
- May 2021 – Dec 2025 **Researcher** (contract, part-time), [Climate Risk Research Group](#)
Faculty of Environment, University of Waterloo, Waterloo, ON
- Jan 2019 – Dec 2024 **Professor (part-time)**, Conestoga College, Kitchener, ON
- Courses Taught RSCH8120 – Policy, Standards, and Evaluation | ECON1030 – Macroeconomics | MATH 1010 – Business Mathematics | ECON1020 – Microeconomics
- Sep 2017 – Dec 2017 **Sessional Lecturer**, Lakehead University - Orillia Campus, Orillia, ON
- Courses Taught MATH0210 – [Quantitative Methods for the Social Scientist](#) | GEOG 2271 – [Quantitative Methods in Geography](#)
- Sep 2014 – Apr 2015 **Sessional Lecturer**, University of Waterloo, Waterloo, ON
- Courses Taught ECON 101 – Introduction to Microeconomics | ECON 221 – Statistics for Economists
- Sep 2013 – Dec 2020 **Graduate Teaching & Research Assistant** in Geography, Environment, and Public Service, University of Waterloo, Waterloo, ON
- Sep 2010 – Aug 2013 **Graduate Teaching & Research Assistant** in Economics & Micro Econometrics Uppsala University & University of Gothenburg, Sweden
- Jan 2007 – Aug 2010 **Senior Lecturer** (Full-time) in Economics & Statistics, School of Business, University of Liberal Arts Bangladesh, Dhaka, Bangladesh
- Feb 2005 – Dec 2006 **Lecturer** (Full-time) in Economics & Statistics, School of Business, Presidency University, Dhaka, Bangladesh
- Feb 2004 – Jan 2005 **Lecturer** (Full-time) in Economics & Business, School of Business, The University of Comilla, Dhaka, Bangladesh

PUBLICATION:

- Roy, R., **Chakraborty, L.**, Haldar, S., Talukder, B., Tan, M.L., Roy, S., Bhuiyan, S., Chan, N.W. (2026). Strategies to Strengthen Institutional Capacities for Climate-Resilient Coastal Socio-Ecological Systems in Bangladesh. *Climate and Development*.
<https://doi.org/10.1080/17565529.2026.2617374>.
- Chakraborty, L.**, Taherimashhadi, H., Thistlethwaite, J., Henstra, D. (2025). A probabilistic framework for spatio-temporal social vulnerability assessment to flood hazards in Canada using Bayesian machine learning. *Journal of Geovisualization and Spatial Analysis*.
<https://doi.org/10.1007/s41651-025-00247-y>.
- Chakraborty, L.**, Spinney, J. A., Malomo, D., Thistlethwaite, J., Motlaghzadeh, K., Jahangir, M. S., Henstra, D., Andrews, S., & Pulatsu, B. (2025). Assessing the environmental justice implications of seismic risk in Ottawa-Gatineau and Montreal metropolitan areas. *International Journal of Disaster Risk Reduction*. <https://doi.org/10.1016/j.ijdr.2025.105516>
- Chakraborty, L.**, Bourke, R., Godsoe, M. (2023). Understanding Risk: A Social Vulnerability Index for Canada. *HazNet*. 18(1), Spring/Summer. <http://haznet.ca/understanding-risk-social-vulnerability-index-canada/>
- Chakraborty, L.**, Rus, H., Henstra, D., Thistlethwaite, J., Minano, A., & Scott, D. (2022). Exploring spatial heterogeneity and environmental injustices in exposure to flood hazards using geographically weighted regression. *Environmental Research*. <https://doi.org/10.1016/j.envres.2022.112982>.
- Chakraborty, L.**, Thistlethwaite, J., Scott, D., Henstra, D., Minano, A., & Rus, H. (2022). Assessing social vulnerability and identifying spatial hotspots of flood risk to inform socially just flood management policy. *Risk Analysis*. <https://doi.org/10.1111/risa.13978>.
- Chakraborty, L.**, Thistlethwaite, J., Minano, A., Henstra, D., & Scott, D. (2021). Leveraging hazard, exposure, and social vulnerability data to assess flood risk to Indigenous communities in Canada. *International Journal of Disaster Risk Science*. <https://doi.org/10.1007/s13753-021-00383-1>.
- Chakraborty, L.**, Rus, H., Henstra, D., Thistlethwaite, J., & Scott, D. (2020). A place-based socioeconomic status index: Measuring social vulnerability to flood hazards in the context of environmental justice. *International Journal of Disaster Risk Reduction*, 43, 101394.
<https://doi.org/10.1016/IJDRR.2019.101394>.
- Rajeb, M., Hossain, M.M., & **Chakraborty, L.** (2017). "Gross Value Added of Agriculture Sector in Bangladesh: An Econometric Investigation," *Terengganu International Finance and Economics Journal* (TIFEJ), 2(1): 56 – 66. <https://myjms.mohe.gov.my/index.php/tifej/article/view/1595>

- Hussain, T., **Chakraborty, L.**, & Kabir, M.A. (2009). "Testing Weak Form of Efficiency on Dhaka Stock Exchange: An Application of Technical Trading Rule and Random Walk Model," *North-South Business Review*, 3(1).
- Malakar, B., Khan, M.H., & **Chakraborty, L.** (2007). "The Zoo as Ecotourism Attraction - Visitor Reactions and Perceptions: The Case of Dhaka Zoo, Bangladesh," *Dhaka University Journal of Business Studies*, 28(2).
- *Policy Research Report*
- Andrey, J., Thistlethwaite, J., **Chakraborty, L.**, Jahangir, M.S., Motlaghzadeh, K., Watterodt, F., Castillo, B., Mendis-Millard, S. (2023). "[Inclusive resilience: A socio-economic vulnerability index to map flood risk for targeted communications and disaster risk reduction](#)." Waterloo, Ontario: Partners for Action, University of Waterloo.
- Andrey, J., Wright, J., Thistlethwaite, J., **Chakraborty, L.**, Jahangir, M.S., Motlaghzadeh, K., Watterodt, F., Christy, E., Mendis-Millard, S. (2023). "Data for Flood Resilience: Building Evidence for Equity-Informed Investment, Planning and Foresight." Waterloo, Ontario: Partners for Action, University of Waterloo, and The Co-operators Group Limited. https://uwaterloo.ca/partners-for-action/sites/default/files/uploads/files/p4a_funding_media_release_2022_0.pdf
- Chakraborty, L.**, Thistlethwaite, J., & Henstra, D. (2021). "Flood Vulnerability and Climate Change: Improving flood risk assessment by mapping socioeconomic vulnerability in a mid-sized Canadian city." Canadian Climate Institute, 17 pp. <https://climateinstitute.ca/publications/flood-vulnerability-and-climate-change/>
- Scott, D., Minano, A., **Chakraborty, L.**, Thistlethwaite, J., & Apajee, Y. (2020). "Flood Risk Analysis of Canadian Health and Emergency Infrastructure," Ottawa: Health Canada, 28 pp.
- *Book Chapter*
- Chowdhury, T. A.**, Das, A. B., Chakraborty, L., & Barai, M. K. (2020). NGOs for Development: Experience of Bangladesh. In Bangladesh's Economic and Social Progress (pp. 351-380). Palgrave Macmillan, Singapore. Retrieved from https://link.springer.com/chapter/10.1007/978-981-15-1683-2_12
- *Presentations, Guest Lecture & Conference Attendance*
- Chakraborty, L. (2026)**. "Using Data to Target Climate Resilience: Mapping Flood Vulnerability and Uncertainty in Southwestern Ontario". Proposal accepted for presentation at the [Toronto Climate Data Summit](#), University of Toronto (St. George Campus), February 18-20th, 2026.
- Chakraborty, L. (2026)**. Guest (public) lecture on "Who Is at Risk and How Certain Are We? Probabilistic Risk Analysis for Evidence-Based Decision-Making", School of Administrative Studies, York University, Toronto, ON, January 22, 2026 (Graduate DEM Program) & March 4, 2026 (Undergrad DEM Program).
- Chakraborty, L. (2026)**. [A New Lens on Risk and Policy Tools for a Changing Climate: Mapping Social Vulnerability to Floods with Bayesian Machine Learning](#). Proposal accepted for presentation at the [Eighteenth International Conference on Climate Change: Impacts & Responses](#), University of the Aegean Rhodes, Greece, April 20-22, 2026.
- Chakraborty, L. (2025)**. [Developing a Probabilistic Social Vulnerability Index: A Machine Learning Approach to Identifying At-Risk Communities in Canada](#). Research paper presented at SRA 2025 Annual Meeting in Washington, DC, December 7-10, 2025.
- Chakraborty, L. (2025)**. Public lecture and online webinar on "[Patterns of distributive environmental justice in Canada](#)", Royal Roads University, Victoria, Canada, October 22, 2025.
- Chakraborty, L. (2024)**. "[Spatial and temporal changes in socioeconomic vulnerability to flood hazards in Canada](#)". Research paper presented at the 2024 Society for Risk Analysis (SRA) Annual Meeting, JW Marriott Austin, Texas, December 8 - 12, 2024.
- Chakraborty, L. (2024)**. "[Assessing distributive environmental injustices and socio-spatial heterogeneity to seismic risk in the built environment of Ottawa and Montreal](#)". Research paper presented at the 3rd International Conference on Natural Hazards and Risks in a Changing World - Addressing Compound and Multi-Hazard Risk, Amsterdam, The Netherlands, June 12-13, 2024.
- Chakraborty, L. (2023-24)**. Guest lecture on "Social Issues in Disaster Management", School of Administrative Studies, York University, Toronto, ON, Winter 2023, 2024
- Chakraborty, L. (2023)**. Keynote speaker at the 7th International Conference on Environment and Disasters (ICED2023). <http://iced.ac.cn/speakerDetail/2023/en?id=16>
- Chakraborty, L.**, Thistlethwaite, J., & Henstra, D. (2023). "[Housing affordability and disproportionate flood risk exposure of economically insecure residents in Canada](#)." Research paper presented at the 2023 Society for Risk Analysis (SRA) Annual Meeting, Renaissance Washington, D.C., December 10 - 14, 2023.

- Jahangir, M.S., Motlaghzadeh, K., **Chakraborty, L.**, Mendis-Millard, S. (2023). A novel probabilistic machine-learning approach for identifying flood risk hotspots. Research paper presented at the Canadian Water Resource Association (CWRA) 2023 National Conference, Halifax, Nova Scotia, June 18-21, 2023.
- Chakraborty, L.** (2023). "Socio-geographic and health inequalities of Indigenous Peoples to COVID-19 across health regions in Canada." Research paper presented at the Annual Canadian Sociological Association (CSA-SCS) Conference, Federation of Humanities and Social Sciences Congress, York University, Toronto, Ontario, May 29 – June 2, 2023.
- Chakraborty, L.** (2023). "Spatio-temporal changes in social vulnerability and socioeconomic variability in Canada." Invited speaker at the [International Conference on Climate Risk, Vulnerability and Resilience Building](#), UNESCO Headquarters, Paris, France, April 19, 2023 – April 21, 2023.
- Chakraborty, L.** (2022). "[Assessing Exposure of Healthcare Facilities and Emergency Management Critical Infrastructure to Flooding Across Canada](#)." Research paper presented at the SRA 2022 Annual Meeting, Tampa, Florida. December 4-8.
- Chakraborty, L.** (2022). "[Focus on the Census Data Linkages](#)." Academic Panel Member on Virtual Workshop Session 4, 2022 CRDCN National Fall Data Forum, Oct 19, 2022.
- Chakraborty, L.** (2022). "Atlantic Canada Flood Mapping Conference." Workshop proposal accepted for Day 2 workshop sessions and presented on "Canada-wide equity considerations in flood mapping and community-engaged flood risk communication," organized by Natural Resources Canada and CLIMAtlantic, Halifax, Oct 5-6, 2022.
- Chakraborty, L.** (2022). "Spatial concentration of socioeconomic inequality and GBA+ factors in public policy development." Policy research paper presented on the 2022 GIS-day program at the University of Manitoba, (Virtual) Mar 2, 2022.
- Chakraborty, L.** (2021). "Using geographically weighted regression to assess environmental injustice in the distribution of flood risk across Canada." Research paper presented at the 8th International Conference on Water and Flood Management (ICWFM), (Virtual) March 29-31.
- Chakraborty, L.** (2020). "[National-scale flood risk assessment: Adjoining 100-year flood hazard exposure and social vulnerability maps at the census tract level across Canada](#)." Paper presented at the SRA 2020 Annual Meeting (Virtual), December 13-17.
- Chakraborty, L.** (2020). "National-scale flood risk assessment: GIS-based flood hazards exposure and vulnerability mapping at the census tract level across Canada." Research paper presented at the Half-day '[Mapping from Home](#)' virtual mini-conference, Canadian Cartographic Association, Jun 10.
- Chakraborty, L.**, Minano, A., Scott, D., Thistlethwaite, J., & Henstra, D. (2019). "Assessing Social Vulnerability to Flood Hazards in Canada's Three Largest Census Metropolitan Areas." Research paper presented at the 42nd Applied Geography Conference 2019, Charlotte, NC, USA, October 23-25.
- Chakraborty, L.**, Scott, D., Thistlethwaite, J., Henstra, D., & Rus, H. (2019). "Constructing an area-based socioeconomic status index in the context of environmental justice assessment across Canada: A Principal Components Analysis Approach." Paper presented at the [SRA 2019 Annual Meeting](#), Arlington, VA, USA, December 8-12.
- Chakraborty, L.** (2018). "Analyzing social inequalities in flood risk exposure through assessing environmental justice implications for flood risk management, and valuing preferences for flood vulnerability reduction measures in Canada using a discrete choice experiment." The Ph.D. thesis presented at the CAGONT 2018 conference, University of Toronto, ON, October 19-20.
- Chakraborty, L.** (2016). "Integrated community-based disaster risk reduction approach to flood risk management: A good practice project in Ayutthaya, Thailand." Research paper presented at the Canadian Association of Geographers of Ontario Conference (CAGONT), Waterloo, ON, October 28–29.
- Uddin, G.S. & **Chakraborty, L.** (2009). "International Trade, Financial Development and Economic Growth Nexus in Bangladesh: Empirical Evidence from Time Series Approach." Research paper presented at the International Finance Conference, IIMC, Joka, Kolkata (Calcutta), India, December 3-5.
- Hussain, T., **Chakraborty, L.**, & Kabir, M.A. (2008). "Is Dhaka Stock Exchange Efficient? An application of Technical Trading Rule." Research paper presented at the International Conference on Recent Developments in Statistical Sciences (ICSS), BCFCC, Dhaka, Bangladesh, December 26–27.

ONGOING RESEARCH PROJECTS:

Exploring Distributional Environmental or Climate Injustices, GBA Plus, and Intersectional Social Determinants of Wildfire Vulnerabilities in Canada: Advancing Social Protection Policies for Racialized, Remote, and Indigenous Communities (with Mahmood Fayazi; Coleen Charles; Emdad

Haque; Jeffrey Sun, Ranjan Datta; Michelle Vandevord; Sean Holman; Geo Takach) – Tri-Agency Grant application submitted as a co-PI for the NFRF-Exploration competition, 2025-27.

Social Vulnerability and Flood Risk Assessment for On-reserve Indigenous Communities in Canada: Using Bayesian Machine Learning Approach (with Hirsu Taherimashhadi, Jason Thistlethwaite, and Daniel Henstra) - writing manuscript for publication, Climate Risk Research Group: University of Waterloo, 2026-2027.

Neighbourhood housing affordability and flood risk in Canadian urban regions and metropolitan areas (with Jason Thistlethwaite and Daniel Henstra) - writing manuscript for publication, Climate Risk Research Group: University of Waterloo, 2026-2027.

Urban Geographies of Climate Justice: Mapping Multi-Hazard Exposure and Inequality Across Canada's Cities. York University. 2026-28.

TEACHING:

- Experienced in teaching climate change, urban environmental issues, spatial analysis, GIS, statistics, and environment–society interactions.
- Delivered courses online, hybrid, and in-person formats across undergraduate and graduate programs.
- Integrated climate modeling, urban hazard mapping, environmental justice, and climate–health topics into course design and lectures.

University of Waterloo – Faculty of Environment (2015–2021)

- GEOG 207: Climate Change Fundamentals (urban climate impacts emphasis)
- GEOG 318: Spatial Analysis (GIS and climate risk mapping)
- GEOG 203: Environment and Development in a Global Perspective
- GEOG 202: Geography of the Global Economy
- GEOG 101: Human Geographies: People, Space, and Change
- ENVS 278: Applied Statistics for Environmental Research
- PLAN 320: Economic Analyses for Regional Planning
- GEOG 181: Designing Effective Maps
- GEOG 281: Introduction to Geographic Information Systems

University of Waterloo – Master of Public Service (2018–2019)

- PS 625: Economics and Public Policy I
- PS 624: Economic Research Methods & Data Analysis

University of Waterloo – Department of Economics (2013–2015)

- ECON 201: Microeconomic Theory for Business and Policy
- ECON 221: Statistics for Economists
- ECON 101: Introduction to Microeconomics
- ECON 351: Labour Economics

Lakehead University – Faculty of Environment (2017)

- MATH 0210 (FAO/FAB): Quantitative Methods for the Social Scientist
- GEOG 2271: Quantitative Methods in Geography

Conestoga College – School of Business & Interdisciplinary Studies (2019–2024)

- POLS 8090: Public Policy
- RSCH 8120: Policy, Standards, and Evaluation
- ECON 1030: Macroeconomics
- ECON 1020: Microeconomics
- MATH 1010: Business Mathematics

AWARDS, RECOGNITION & SCHOLARSHIPS:

2026	Emerging Scholar Award , 18th International Conference on Climate Change: Impacts & Responses, University of the Aegean, Rhodes, Greece, 20-22 April 2026, Common Ground Research Networks, CGScholar 2026.
2025	Society for Risk Analysis (SRA) Annual Meeting Travel and Merit Award
2024	Society for Risk Analysis (SRA) Annual Meeting International Travel Award
2023	UNESCO Headquarters 2023 International Conference Travel Award as an invited panel speaker
2022	“Creativity and Innovation Award” – received a formal departmental recognition award from “Public Safety Canada” for significant contribution to the “Canada-Wide Flood Hazard Model project.”
2020	Graduate Research Studentship (GRS) Under the University Research Chair in Climate and Society, Dr. Daniel Scott, Funded by Health Canada

2020	Adaptation Canada 2020 Conference Travel Award
2020	Canadian Association of Geographers (CAG) Annual Conference Travel Award
2019	Society for Risk Analysis (SRA) Graduate Student Travel Award
2018	CRDCN Emerging Scholars Grant Award
2015 – 2019	Faculty of Environment Dean's Scholarship for Doctoral Studies, University of Waterloo
2013 – 2014	Economics Graduate Scholarship, University of Waterloo
2012 – 2013	SIDA Scholarship for Doctoral Studies, University of Gothenburg
2001	Economics Graduate Scholarship, Shahjalal University of Science & Technology

RESEARCH IMPACT (PRESS RELEASE, NEWS & MEDIA COVERAGE):

- Members of marginalized groups are at disproportionate risk in earthquakes, study finds. [McGill News / Science Magazine](#) (May 14, 2025).
- Vulnerable populations in B.C. more at risk to flooding: study. [Kelowna Capital News](#), [Terrace Standard](#), [Vancouver Island Free Daily](#) (Aug 29, 2022).
- Indigenous people at greater risk of flooding caused by climate change: study, [APT National News](#) (Aug 26, 2022).
- Low-income residents, visible minorities disproportionately affected by flooding risks in Canada: study, [CTV News](#), [abc17NEWS](#) (Aug 22, 2022).
- Vulnerable communities face a higher risk of socioeconomic injustice due to flood hazards, [Waterloo News](#), [PreventionWeb \(UNDRR\)](#), [phys.org](#), [Smart Water Magazine](#), [Municipal Information Network](#), [NationTalk](#), and [SkyNews](#) (Aug 22, 2022).
- Exploring spatial heterogeneity and environmental injustices in exposure to flood hazards using geographically weighted regression, [Water Institute Research](#), Issue 13, WaterResearch Spotlight May 3, 2022).
- Des inondations aux conséquences plus désastreuses pour les Autochtones (Floods with more disastrous consequences for Aboriginal people), [CBC ICI.Radio-Canada.Ca](#) (January 14, 2022).
- New study shows B.C. Indigenous communities vulnerable to climate change risks, [Kamloops News](#) (Jan 11, 2022).
- Net Zero: Indigenous communities more vulnerable to flooding, [iPolitics](#) (Jan 7, 2022).
- Indigenous communities face a higher risk of socioeconomic vulnerability due to flooding, [Waterloo News](#), [PreventionWeb \(UNDRR\)](#), [Science Magazine](#), [Smart Water Magazine](#) (Jan 6, 2022).
- Indigenous communities at higher risk of climate change-induced flooding, study shows, [CTV News](#) (Jan 6, 2022).
- Social inequities put Indigenous communities at greater flood risk, study finds, [National Observer](#) (Dec 24, 2021).
- Study identifies Indigenous communities that are hotspots for flooding risk, [Toronto Star](#) (Dec 30, 2021).
- Socioeconomic Vulnerability and Flood Risk in the Current Era of Climate Change, [Canadian Coastal Resilience Forum](#), Researcher Spotlight Series (Nov 30, 2021).

OTHER SCHOLARLY ACTIVITIES:

- **Peer Reviewer**
 - *Applied Geography, Climate Risk Management, Environmental Science & Policy*
 - *Environmental Research Letters, Environmental Science & Technology*
 - *International Journal of Disaster Risk Reduction, Natural Hazards, Scientific Reports*
- Clarivate Peer Review Record: <https://www.webofscience.com/wos/author/record/AAO-3050-2020>
ORCID Peer Review Record: <https://orcid.org/0000-0002-1241-9584>

OTHER PROFESSIONAL EXPERIENCE:

Jul 2009 – Aug 2009	Trainer , Data analytical techniques on Intermediate MS Excel <i>A custom-made Excel Training for GEMCON group Employees, Dhaka, Bangladesh</i>
Jun 2005 – Dec 2006	Proctor (in charge) , Presidency University, Dhaka, Bangladesh

PROFESSIONAL DEVELOPMENT TRAINING/CERTIFICATES ATTENDED (Selected):

April 2026	Sustainability and Climate Risk (SCR®) Certificate Candidate, April 18-26, 2026
May 2025	SPSD/M Black Box Training (English) , Statistics Canada, April 25 - May 2, 2025
Aug 2023	SCS 1860 - Foundations of Project Management , School of Continuing Studies, University of Toronto, May 24 - Aug 16, 2023
Sep 2022	<i>Equity, Diversity & Inclusion for Disaster & Emergency Management: A speaker series</i> Organized by CIFAL at York University, Bi-weekly sessions, Sept 21-Nov 30, 2022
Sep 2022	<i>The First Nations Principles of OCAP® Workshop</i>

Feb 2022	Organized by First Nations Information Governance Centre (FNIGC), Sept 26-27, 2022 <i>Disaster Ethics (mini-online course)</i> Instructed by Professor David Etkin, Faculty of Liberal Arts & Professional Studies at York University
Jan 2020	<i>Active Learning Strategies</i> Teaching and Learning Centre, Conestoga College Professional Development Workshop
Dec 2018	<i>Creating a Positive Learning Environment</i> Teaching and Learning Centre, Conestoga College Professional Development Workshop
Oct 2011	<i>Copenhagen Economics Talent Day'11</i> Copenhagen Economics, Sankt Annæ Plads 13 / DK-1250 Copenhagen, Denmark
Jul 2008	<i>Research Methods for Business and Social Sciences</i> Conducted by Dr. Syed Saad Andaleeb, Professor and Chair of Marketing, Penn State Erie, USA; organized by ULAB, Dhaka, Bangladesh

EXTRACURRICULAR ACTIVITIES:

Jan 2008 – Aug 2010	Faculty Advisor , ULAB Business Club, Dhaka, Bangladesh
Jun 2009	Coordinator and advisor , Budget Analysis Workshop 2009-10 Organized by ULAB Business Club and Jagoree, held in ULAB Auditorium, Dhaka, Bangladesh
Jan 2006 – Dec 2006	Faculty Advisor , Presidency University Cultural Club, Dhaka, Bangladesh
Aug 2003	Cultural Secretary, Graduation Completion Fest, SUST, Sylhet, Bangladesh
2001 – 2002	General Secretary, Theatre SUST, Bangladesh

OTHER INFORMATION:

<i>Citizenship</i>	Canadian
<i>Affiliations</i>	Member, Canadian Sociological Association (CSA) Member, Society for Risk Analysis (SRA) Member, Canadian Water Resource Association (CWRA) Member, Canadian Association of Geographers (CAG)

LANGUAGE:

English (Advanced) | French (Beginners) | Bengali (Native)

RESEARCH PROGRAM DEVELOPMENT

My current and future research program focuses on developing urban climate risk models that integrate physical hazard data (flood, wildfire, storm, heat, air quality, seismic risk) with socio-economic and health vulnerability indicators. I aim to expand work in:

- Urban heat, health risk, and climate vulnerability modeling
- Climate impacts on critical infrastructure, community wellbeing, and service accessibility
- Geospatial, statistical, and Predictive modeling for multi-hazard urban systems
- Community-engaged climate adaptation and resilience planning

These directions build on my national and international collaborations and position my program for Canada's Tri-Agency and international funding opportunities.

SUMMARY OF QUALIFICATIONS

- Over 16 years of interdisciplinary experience in climate research, higher education, and policy-relevant analysis supporting evidence-based decision-making.
- Specialized expertise in urban climate impacts, environmental justice, and climate–health interactions within complex socio-economic systems.
- Strong peer-reviewed publication record in climate risk, social vulnerability, and spatial modeling with demonstrated policy relevance.
- Proven capacity to lead independent research and contribute to collaborative, externally funded climate initiatives in multi-institutional environments.
- Advanced technical proficiency in geospatial analysis, climate hazard modeling, Bayesian machine learning, and statistical programming (R, Python, Stata, SPSS).
- Extensive teaching and capacity-building experience across climate change, GIS, spatial analysis, quantitative methods, and environment-society studies.
- Highly effective communicator with a demonstrated ability to translate complex climate evidence into policy-relevant insights for decision-makers and public audiences.

KEY SKILLS & TECHNICAL EXPERTISE:

Climate & Environmental Research

- Urban climate impacts, climate adaptation, and climate–health interactions aligned with resilience and preparedness priorities.
- Multi-hazard risk assessment, exposure analysis, and hazard mapping to support climate adaptation and disaster risk reduction.
- Integration of hydroclimatic data, hazard models, and urban heat metrics for urban-scale policy analysis.

Quantitative & Spatial Methods

- Advanced GIS and spatial analytics (ArcGIS, QGIS, GeoDa, MGWR) for regional and urban policy assessment.
- Multivariate statistical modeling, Bayesian machine learning, and predictive analytics for uncertainty-aware decision support.
- Management and analysis of large-scale datasets, including national census microdata and climate risk layers.

Interdisciplinary Policy & Equity Analysis

- Application of environmental justice frameworks and equity-based analysis consistent with community cohesion and inclusion objectives.
- Community-focused and place-based vulnerability assessments to inform locally tailored adaptation strategies.
- Climate adaptation policy analysis and development of evidence-based policy recommendations.

Research Communication & Collaboration

- Clear and effective communication of complex findings to policy, academic, and stakeholder audiences.
- Experience in intergovernmental, cross-sectoral, and international collaborations, including policy-facing research environments.
- Project leadership, research supervision, stakeholder engagement, and collaborative knowledge production.