



Canada is at a critical inflection point in how it governs its most vital resource: freshwater. Climate change is accelerating extreme weather events, digital infrastructure is driving unprecedented withdrawals and new threats, and geopolitics are reshaping demands on shared waters. Yet Canada's governance and policy frameworks were not designed to confront these converging pressures.

Michelle Jadormeo is a Master of Public Policy and Administration (MPPA) student at Toronto Metropolitan University. She holds an Honours BA in Political Science from the University of Toronto with strong foundations in Canadian politics and international relations.

Her Master's research project focuses on the emerging issue of water demands related to artificial intelligence (AI) and data centre infrastructure. With an increasing number of data centres emerging across Canada, the Great Lakes region, and in urban centres near water, Michelle's research focuses on the policy challenges that AI and these data centres present in areas that already face increasing demands on water and water infrastructure. At stake is far more than an engineering and technology challenge, it is a profoundly political and socio-economic challenge.

Michelle's Masters research project focuses on policy gaps related to AI data centres and water use. While water use and permitting are a provincial responsibility, it is clear that data centres are emerging as a new category of water users, but it is not clear how much water these facilities use and if these uses require new policies or policy innovations. Through comparative policy analysis, she will examine policy gaps and regulatory blind spots in Canada's oversight of these large-scale water use technologies and users. For example, there is some emerging research on how these centres can benefit from policies that allow for water re-use, and some jurisdictions in the world are exploring floating and submerging these facilities which introduces other important policy concerns.

Michelle is honoured to be named one of the 2025–26 Geoffrey F. Bruce Fellows in Canadian Freshwater Policy. Her Bruce Fellowship funding will allow her to focus on her conviction that Canadian freshwater policy cannot remain reactive in face of global, geopolitical and rapid technological change. Through this fellowship, she is also participating in the Bruce Fellowship-Canada Water Agency mentorship program to learn how to advance evidence-based, principled, and forward-looking freshwater governance. She hopes her research will allow her to make a significant policy contribution on this important topic and pursue a career as a future water policy leader on completion of her studies

Beyond her Master's research, Michelle is currently working as a Research Assistant for faculty members in the Department of Politics and Public Administration and supports undergraduate learning as an Academic Assistant for the course *Power and Influence in Canadian Politics*. She also serves as the program council representative for TMU's MPPA program and volunteers with Journey Home Hospice, providing compassionate care to people experiencing homelessness. At heart, Michelle is driven by a clear purpose: to reimagine Canada's approach to water governance in ways that are forward-thinking, equitable, and rooted in respect for Indigenous water rights.



Across Canada, new water technologies are emerging to manage freshwater in more innovative and sustainable ways. Canada's next generation is researching the feasibility of these new technologies and the policy changes required to support their use and implementation. Many of these smart technologies focus on the potential to capture and reuse water.

Dima Balaa is a PhD candidate in the Environmental Applied Science and Management program at Toronto Metropolitan University (TMU). Her research focuses on the intersection of water quality, treatment systems, public health, and water policy. She holds a Master's degree from TMU, where she examined public risk perceptions and policy challenges of microplastics and nanoplastics in drinking water. She recently published this research which included policy considerations and recommendations on these emerging contaminants in the journal, *Environmental Research:Health*.

Currently, Dima is a lead researcher with the interdisciplinary Credit Valley Conservation (CVC) Smart Blue Roof project in Mississauga, Ontario. Blue roofs are an emerging innovative green infrastructure designed to temporarily store stormwater on rooftops to mitigate urban flooding, improve water flow management, provide evaporative cooling, reduce energy and electricity costs, and enable rainwater harvesting and water reuse. Her work investigates water quality in standing water on blue roof systems related to Ontario's water policies, standards and building codes. This technology could be very beneficial across a wide range of public and private sector applications. However, Canada and Ontario's current water policies include barriers to using this technology.

Under existing laws and policies, the National Building Code of Canada, National Plumbing Code, and the Ontario Building Code (*O. Reg. 332/12*) mandate all roofs to fully drain within a day of a rain event. While this ensures structural safety and basic water quality management, data from the CVC blue roof project indicate that this requirement limits the full benefits of advanced blue roof systems, particularly during frequent and intense rainfall events. Dima's research integrates a focus on the feasibility and environmental benefits of blue roof technologies with microbial and physicochemical public health and safety data. Her research also evaluates how policy and regulatory limitations affect stormwater management performance, energy efficiency, and safe water reuse. These policy and regulatory aspects of her research will be advanced significantly through her Bruce Fellowship.

As a Bruce Fellow, Dima will engage with policymakers, water managers, and industry partners to translate her findings into actionable policy recommendations, including evidence-based guidelines for controlled water retention and water reuse from rooftops. Her work aims to generate recommendations related to national and provincial policies and building codes to strengthen water governance, advance climate-resilient technology and urban infrastructure, promote public health and safety, and contribute to important policy innovation related to water retention and reuse. She is also participating in the Bruce Fellowship-Canada Water Agency mentorship program to gain additional insights related to the policy impact of her research and her future career path.