

# CLIMATE FORUM 2025

## Program Book

August 18-20, 2025

Canadian Centre for Climate Change and Adaptation

University of Prince Edward Island

St. Peter's Bay, Prince Edward Island, Canada



UNIVERSITY  
of Prince Edward  
ISLAND

## Climate Forum 2025

is co-hosted by:



UNIVERSITY  
of Prince Edward  
ISLAND



Climate **Smart** Lab

ACTION FOR FUTURE.

Canadian Society for  
Civil Engineering



Société canadienne  
de génie civil

PEI Section

**sigma**  
academy

FOR  
CLIMATE  
CHANGE

Sponsored by:

Platinum



Bronze



**CORE CASE**  
SUSTAINABLE CORE CASES

# Agenda

## Day 1: August 18, 2025, Monday

09:00 - 09:40	<b>Opening Ceremony</b> <i>Dr. Judith (Judy) Clark, UPEI Elder in Residence, Advisor to the Dean of Faculty of Indigenous Knowledge, Education, Research, and Applied Studies</i> <i>Dr. Greg Naterer, UPEI Vice-President, Academic and Research</i> <i>Dr. Xander Wang, Professor and Director, Climate Smart Lab, Canadian Centre for Climate Change and Adaptation, UPEI</i>
09:40 - 10:20	Keynote Presentation #1: <b>Parametric Uncertainty in Earth System Modeling and Potential of Deep Learning as a Tool in Reducing Uncertainty</b> <i>Dr. Qingyun Duan, Hohai University, China</i>
10:20 - 10:50	<i>Group Photo &amp; Refreshment Break</i>
10:50 - 11:30	Keynote Presentation #2: <b>Human Dimensions, the Climate-Poverty Nexus and Smart Climate Policy</b> <i>Dr. Anthony (Tony) Charles, Saint Mary's University, Canada</i>
11:30 - 12:00	<i>Tour and demonstration of the lab-scale coastal-inland flood simulator in the Climate Smart Lab, Canadian Centre for Climate Change and Adaptation, UPEI</i>
12:00 - 13:30	<i>Lunch, Poster Viewing, &amp; Social Networking</i>
13:30 - 14:10	Keynote Presentation #3: <b>Building a Resilient Cropping System Amidst Climate Change</b> <i>Dr. Mumtaz Cheema, Memorial University - Grenfell Campus, Canada</i>
14:10 - 14:40	<i>Refreshment Break &amp; Poster Viewing</i>
14:40 - 16:00	<b>Engineered Biocarbon Materials for a Sustainable Future</b> <i>Dr. Yulin Hu, University of Prince Edward Island, Canada</i> Panel Discussion: <ul style="list-style-type: none"><li>• <b>Challenges and Opportunities for Future Climate Research</b></li><li>• <b>Pursuing a Professional Career in Climate Change</b></li></ul>

## Day 2: August 19, 2025, Tuesday

### Session 1: Climate Change Modeling & Impact Assessment

09:00 - 09:15	Presentation #1: <b>High-Resolution Seasonal Climate Prediction and Long-Term Climate Projection for Prince Edward Island</b> <i>Rana Ali Nawaz, University of Prince Edward Island, Canada</i>
09:15 - 09:30	Presentation #2: <b>To Understand Coastal Hazards in Prince Edward Island</b> <i>Tianze Pang, University of Prince Edward Island, Canada</i>
09:30 - 09:45	Presentation #3: <b>Changes in Water Requirements of Wild Blueberries in Atlantic Canada: Insights from Historical Climate Data and Future Projections</b> <i>Atif Zahoor, University of Prince Edward Island, Canada</i>
09:45 - 10:00	Presentation #4: <b>Coastal Ice and Climate Change: Projections of Sea Ice Around Prince Edward Island</b> <i>Genevieve Keefe, University of Prince Edward Island, Canada</i>
10:00 - 10:15	Presentation #5: <b>The Influence of Climate Change on Tropical Cyclone Genesis Regions in the North Atlantic</b> <i>Gleniese McKenzie, University of Prince Edward Island, Canada</i>
10:15 - 10:30	Presentation #6: <b>A Warming World, A Potential Concern: Exploring Cancer and Climate Change in the Maritimes</b> <i>Vanessa Engelke Da Silva, University of Prince Edward Island, Canada</i>
10:30 - 10:45	Presentation # 7 <b>Tracking Drought from Space: How Remote Sensing Maps Agricultural Stress Over Time</b> <i>Fatima Imtiaz, University of Prince Edward Island, Canada</i>
10:45 - 11:05	<i>Refreshment Break</i>
<b>Session 2: Flood Modeling, Groundwater, and Coastal Risk</b>	
11:05 - 11:20	Presentation #8: <b>Simulating Groundwater Systems: Toward Climate-Resilient Water Management in Prince Edward Island</b> <i>Muhammad Qasim Mehmood, University of Prince Edward Island, Canada</i>

11:20 - 11:35	Presentation #9: <b>Assessment of Climate Change Impacts on Oyster Aquaculture Production in PEI</b> <i>Emmanuel Neokye, University of Prince Edward Island, Canada</i>
11:35 - 11:50	Presentation #10: <b>Smart Farming with Artificial Intelligence: Enhancing Potato Disease Monitoring for Climate Adaptation</b> <i>Avneet Kaur, University of Prince Edward Island, Canada</i>
11:50 - 12:05	Presentation #11: <b>Mental Health Impact of Coastal Erosion</b> <i>Lucy Li, University of Prince Edward Island, Canada</i>
12:05 - 12:20	Presentation #12:  <b>Exploring the Potential of Cover Crop Mixtures to Mitigate Greenhouse Gas Emissions in Silage Corn and Faba Bean cropping systems</b> <i>Muhammad Tayyab, Memorial University, Canada</i>
12:20 - 12:35	Presentation #13:  <b>Climate at the Nest: Piping Plovers in a Changing Coastal Zone</b> <i>Ryan Guild, University of Prince Edward Island, Canada</i>
12:35 - 13:35	Lunch Break
<b>Session 3: Agriculture, Food Systems and Sustainability</b>	
13:35 - 13:50	Presentation #14:  <b>Mapping Potato Late Blight Risk Using High-Resolution Weather Data</b> <i>Christine Parsons, University of Prince Edward Island, Canada</i>
13:50 - 14:05	Presentation #15: <b>Evaluating the Denitrification-Decomposition (DNDC) Model's Performance for GHG Emissions Simulation in Potato Fields of PEI</b> <i>Kiana Kiani, University of Prince Edward Island, Canada</i>
14:05 - 14:20	Presentation #16: <b>The Effect of Climate Change on Livestock Health and Production</b> <i>Alex Anuta, University of Prince Edward Island, Canada</i>
14:20 - 14:35	Presentation #17: <b>Advanced Climate-Smart Modelling of Greenhouse Gas Emissions for Sustainable Potato Production in Atlantic Canada</b> <i>Muhammad Hassan, University of Prince Edward Island, Canada</i>
14:35 - 14:50	Presentation #18:

	<b>Assessing the Impacts of Climate Change on Food Security on Prince Edward Island</b> <i>Levannia Lildhar, University of Prince Edward Island, Canada</i>
14:50 - 15:05	Presentation #19: <b>Enhancing Climate Resilience for Societies Through Integrated Land Use Planning</b> <i>Aylar Fathnezhad, University of Prince Edward Island, Canada</i>
15:05 - 15:20	Presentation #20: <b>Land Use and Land Cover Classification Analysis Using Remote Sensing and Machine Learning</b> <i>Sana Basheer, University of Prince Edward Island, Canada</i>
15:20 - 15:40	<i>Refreshment Break</i>
<b>Session 4: Green Technologies, Materials, and Circular Bioeconomy</b>	
15:40 - 15:55	Presentation #21: <b>Toward PFAS-Free Packaging: Green Waxes and Poly (3-hydroxybutyrate-co-3-hydroxyvalerate) (PHBV) Coatings for Paper and Plastic Substrates</b> <i>Fatemeh Jahangiri, University of Guelph, Canada</i>
15:55 - 16:10	Presentation #22: <b>Greener Polymers, Cleaner Future: Tackling Climate Change with Biobased Solutions</b> <i>Ehsan Pesaranhajiabbas, University of Guelph, Canada</i>
16:10 - 16:25	Presentation #23: <b>Advanced Carbon Material for Environmental Applications</b> <i>Millad Jalilian, University of Prince Edward Island, Canada</i>
16:25 - 16:40	Presentation #24: <b>Ash Effect on Pyrolysis for Biochar Production</b> <i>Oyepeju Ruth Oyeleke, University of Prince Edward Island, Canada</i>
16:40 - 16:55	Presentation #25: <b>Biomass Valorization for the Preparation of Electrodes</b> <i>Samudrika Aththanayaka, University of Prince Edward Island, Canada</i>

### Day 3: August 20, 2025, Wednesday

#### Guided Field Visits in PEI

08:30 – 09:40	Charlottetown/CCCCA to Macinnis Pond site
09:40 – 10:20	Touring at Macinnis Pond site, led by <i>Dr. Yefang Jiang, Research Scientist, Charlottetown Research and Development Centre, Agriculture and Agri-Food Canada (AAFC)</i>
10:20 – 10:40	Macinnis Pond site to East Point Lighthouse
11:20 – 11:35	East Point Lighthouse to Basin Head Provincial Park
12:10 – 12:30	Basin Head Provincial Park to CCCCCA
12:30 – 14:00	Lunch at CCCCCA
14:00 – 14:10	CCCCCA to Greenwich National Park
14:10 – 16:00	Touring at Greenwich National Park
16:00 – 17:00	Back to Charlottetown/CCCCA

## Keynote Speakers



### **Dr. Qingyun Duan**

Editor-in-Chief, Reviews of Geophysics  
Fellow of the American Geophysical Union  
Fellow of the American Meteorological Society  
Chair Professor, National Key Laboratory of Water Hazard  
Protection, College of Hydrology & Water Resources  
**Hohai University**

Qingyun Duan, who received his Ph.D. in hydrology from the University of Arizona in 1991, is currently a Chair Professor in the College of Hydrology & Water Resources at Hohai University in China. His research interests include hydrometeorological modeling, uncertainty quantification, ensemble forecasting and climate change impact on hydrology and water resources. He has published over 230 peer-reviewed articles and edited 4 books in hydrology and water resources.

Dr. Duan served as the co-leader of the Model Parameter Estimation Experiment (MOPEX) and is/was a member of the scientific steering committees of the Global Energy and Water Exchanges (GEWEX) Project, the Hydrological Ensemble Prediction Experiment (HEPEX) and World Climate Research Program Academy. He is the President of Hydrological Science Section of Asia Oceania Geosciences Society, and is the current Editor-in-Chief for Reviews of Geophysics.

He was also the Editor-in-Chief of the Springer major reference book "Handbook of Hydrometeorological Ensemble Forecasting". Dr. Duan is a Fellow of American Geophysical Union and American Meteorological Society.





### **Dr. Anthony (Tony) Charles**

Fellow of the Royal Society of Canada

Director, School of the Environment

Professor, Sobey School of Business & Department of Environmental Science

Santamarian Chair in Environment and Sustainability

Director, Community Conservation Research Network

**Saint Mary's University**

Dr. Anthony (Tony) Charles is Santamarian Chair in Environment and Sustainability, and a full professor in Environmental Science and the Sobey School of Business, at Saint Mary's University in Halifax, Canada. His interdisciplinary research focuses on policy and socioeconomics, notably on environment, natural resources, and sustainability, with particular interests in oceans, coasts, fisheries, biodiversity and climate change adaptation.

Dr. Charles is Director of the Community Conservation Research Network, a global initiative which explores how local communities, around the world, are crucial in addressing global climate and environmental challenges. He is also lead author of the report "Addressing the Climate Change and Poverty Nexus" produced by the Food and Agriculture Organization of the United Nations, exploring how climate responses must take into account poverty and food insecurity.

Dr. Charles holds a Pew Fellowship in Marine Conservation and a Gulf of Maine Visionary Award. He has authored well over one hundred publications, including several books, most recently "Sustainable Fishery Systems"; "Governing the Coastal Commons" and "Communities, Conservation and Livelihoods".



### **Dr. Mumtaz Cheema**

Fellow of the Canadian Society of Agronomy (CSA)  
Associate Vice President – Research & Graduate Studies  
Professor, School of Science and the Environment  
**Memorial University – Grenfell Campus**

Dr. Mumtaz Cheema is the Associate Vice President of Research and Graduate Studies and a Professor at the School of Science and the Environment, Grenfell Campus, Memorial University of Newfoundland, Canada. His research focuses on developing sustainable, resilient cropping systems through innovative management practices to enhance carbon sequestration and GHG mitigation in boreal climates. Currently, he is co-developing best management practices (BMPs) with farmers and industry partners to improve soil health and reduce emissions. His recent work includes synthesizing carbon nanofertilizers from fish waste, promoting a zero-waste policy to combat climate change.

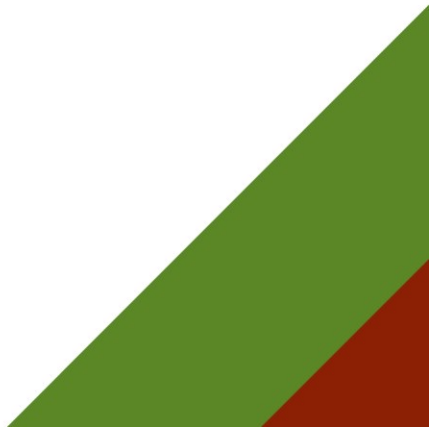
Dr. Cheema has secured over \$25 million in research funding from Tri-Council, Mitacs, Agriculture and Agri-Food Canada, and other agencies. He has published over 158 peer-reviewed papers, delivered 100+ presentations, and mentored over 70 graduate students and postdoctoral fellows.

He played a key role in establishing the MSc and PhD programs in Boreal Ecosystems and Agricultural Sciences at Grenfell Campus and has actively engaged with farmers, industry, and Indigenous communities to translate research into real-world applications.

Dr. Cheema has served as President of the Canadian Society of Agronomy (2021-22) and is a Fellow of the CSA, reflecting his leadership and contributions to the field.



Notes:



# CLIMATE FORUM 2025

<https://sigma.academy/climate2025>



UNIVERSITY  
of Prince Edward  
ISLAND