VENUE MAP

DELTA HOTELS MARRIOTT PRINCE EDWARD

CSBE | SCGAB

Charlottetown 2022

Canadian Society for Bioengineering
2022 Annual General Meeting and Technical Conference

Agricultural Sustainability and Food Security Through Precision Agriculture Technologies

July 24-27, 2022
Charlottetown, PEI, Canada

PROGRAM BOOK

Visit conference website for more information:

https://csbe-scgab.ca/charlottetown2022

LOCAL ORGANIZING COMMITTEE (LOC)

Chair/Co-chair

Aitazaz Farooque, Faculty of Sustainable Design Engineering, University of Prince Edward Island, PEI
afarooque@upei.ca

Travis Esau, Department of Engineering, Dalhousie University, NS
tesau@dal.ca

Committee Members

Khalil I. Al-Mughrabi, Government of New Brunswick

John Macquarrie, Cavendish Farms

Ahmad Al-Mallahi, Department of Engineering, Dalhousie University

Gobinda Saha, Department of Engineering, University of New Brunswick

Xander Wang, School of Climate Change and Adaptation, University of Prince Edward Island

Evan MacDonald, Croptimistic Inc.

Yulin Hu, Faculty of Sustainable Design Engineering, University of Prince Edward Island

Andrew McKenzie-Gopsil, Agriculture Agri-Food Canada

Kuljeet Grewal, Faculty of Sustainable Design Engineering, University of Prince Edward Island

Holly Barret, Government of Prince Edward Island

Carla Millar, Government of Prince Edward Island

Erin Taylor, Government of Prince Edward Island

Peter Swinkels, Doug Bragg Enterprises Ltd

Farhat Abbas, University of Doha for Science and Technology

Pelin Kınay, School of Climate Change and Adaptation, University of Prince Edward Island

Webmaster

René Morissette, Agriculture and Agri-Food Canada, Quebec City, QC
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For general information please send an email to:
meetings@csbe-scgab.ca

GENERAL OVERVIEW

Technical Sessions' Themes:

- Food and Bioprocessing
- Agricultural Engineering
- Water & Soil Management
- Waste Management
- Precision Agriculture
- Environment & Climate Change

Keynote Speakers

Professor David J. Mulla
Director of the Precision Agriculture Center, University of Minnesota, USA
"Advancing precision agriculture through scientific breakthroughs"

Professor Arnold W. Schumann
Soil & Water Science, University of Florida, USA
"Opportunities and challenges of AI in precision agriculture"

Sunday, July 24th, 2022

1:00 pm - 8:00 pm	Registration
2:00 pm - 5:00 pm	CSBE-SCGAB Council Meeting
2:00 pm - 5:00 pm	Workshop
5:00 pm - 9:00 pm	Opening Reception (Tignish Room)

Monday, July 25th, 2022

7:00 am - 8:00 am	Breakfast
8:00 am - 9:00 am	Plenary Session - Keynote Speaker
9:00 am - 12:00 pm	Technical Sessions
12:00 pm - 1:20 pm	Lunch - CSBE/SCGAB Annual General Meeting
1:40 pm - 4:40 pm	Technical Sessions

Tuesday, July 26th, 2022

7:00 am- 8:00 am	Breakfast
8:00 am- 9:00 am	Plenary Session- Keynote Speaker
9:00 am- 12:00 pm	Technical Sessions
12:00 pm- 1:20 pm	Lunch
1:40 pm- 3:00 pm	Poster Sessions
3:00 pm- 3:40 pm	Technical Sessions
4:00 pm- 4:40 pm	Technical Sessions
6:30 pm- 9:30 pm	Banquet and Award Ceremony

Wednesday, July 27th, 2022 - Technical Tour

9:00 am- 5:00 pm

The bus will leave Delta Hotel at 9:00 AM

1st Stop: HJV Equipment - Specialized Agriculture Equipment
2nd Stop: Agriculture Agri-Food Canada Research Station
3rd Stop: Wild Blueberry Processing Facility
4th Stop: Canadian Centre for Climate Change and Adaptation - UPEI
5th Stop: Greenwich Prince Edward Island National Park ~ Recreation and Beach
Bus leaves from Greenwich National Park to Delta Hotel

Lunch will be provided at the Canadian Centre for Climate Change and Adaptation in St Peters Bay.

Note: All the participants on the Technical Tour need to be Fully Vaccinated. This is required by the organizations hosting the Technical Tour. Please keep your vaccination record handy!

CONFERENCE PROGRAM

DAY 1- SUNDAY, JULY 24TH 2022	
1:00pm-8:00pm	**Registration** **All-day registration to the conference**
2:00pm-5:00pm	**Workshop: Net-Zero Atlantic** ***Title:*** *"Energy system modelling to analyze pathways to net-zero"* **Description:** The path to reaching net-zero emissions by 2050 in Atlantic Canada is both times- and resource-constrained. Against the backdrop of these challenges and the considerable uncertainty and complexity associated with potential solutions, we must ensure that robust data and analyses are used to support sound decision-making. In this context, energy system modeling can provide critical insights required to strategically plan for meeting climate change goals through cost-effective and timely means. In this workshop, Net Zero Atlantic will demonstrate how its open-source energy system model can be used by industry, policymakers, and other stakeholders to answer "what if" questions about the future of our region's energy system. Participants will receive a brief introduction to energy system modeling, will be instructed on how to download and run Net Zero Atlantic's open-source model, and will be engaged in a discussion around applications of energy system modeling within the research setting.
5:00pm-9:00pm	**Opening Reception (Tignish Room)**

DAY 2- MONDAY, JULY 25TH 2022 MORNING SESSIONS	
	LOCATION: Rustico Tracadie
7:00am-8:00am	**Breakfast**
8:00am-8:05am	Welcome Remarks on Behalf of Local Arrangement Committee - Dr. Aitazaz Farooque
8:05am-8:10am	Welcome Remarks from the University of Prince Edward Island - President Greg Keefe
8:10am-8:15am	Greetings from the Government of Prince Edward Island
8:15am-8:20am	Remarks from the Canadian Society for Bioengineering President – Dr. Ying Chen
8:20am-8:25am	Introduction of Keynote Speaker - Dr. Travis Esau
8:00am-9:00am	**Plenary Session Keynote Speaker** **Room: Rustico Tracadie** ***Title:*** *"Advancing precision agriculture through scientific breakthroughs"* **Professor David J. Mulla** Director of the Precision Agriculture Center, University of Minnesota, USA Dr. Mulla received a Ph.D. degree in Agronomy from Purdue University with an emphasis in soil physics (1983). From 1983 to 1995 he was Assistant to a Full Professor position in the Department of Crop and Soil Sciences at Washington State University. Since 1995 he has been Professor and Larson Chair for Soil & Water Resources in the Dept. of Soil, Water, and Climate at the University of Minnesota. Since January 2004 he has been the Director of the Precision Agriculture Center at the Univ. of Minnesota and organized the 7th and 8th International Conferences on Precision Agriculture. Dr. Mulla's research emphasizes (1) non-point source surface water pollution and TMDLs and watershed management, (2) the transport and modeling of water, solutes, trace metals, and organic chemicals in soil, surface, and groundwater, (3) impacts of biofuel and alternative crop production systems, (4) the measurement, modeling, and management of soil erosion, (5) phosphorus and nitrogen transport in soils, (6) agricultural best management practices, (7) soil, landscape and terrain modeling for precision conservation, and (9) field-scale variability for precision farming.

MONDAY, JULY 25TH 2022

DAY 2- MONDAY
MORNING TECHNICAL SESSIONS

TIME	LOCATION			
	ROOM: ASPEN **FBP 1** **Theme 1: Food and Bioprocessing 1** Session Chair: Dr. Grant Clark McGill University	**ROOM: SOURIS** **AGRENG 1** **Theme 2: Agricultural Engineering 1** Session Chair: Dr. Chandra Singh Lethbridge College	**ROOM: SUMMERSIDE** **WATSOIL 1** **Theme 3: Water & Soil Management 1** Session Chair: Asim Biswas University of Guelph	**ROOM: TIGNISH** **WASTMAN 1** **Theme 4: Waste Management 1** Session Chair: Craig MacEachern Dalhousie University
9:00am-9:20am	Estimation of Rice's Yield-Related Traits Based on Backlight Imaging **Zhiqi Wang (VIRTUAL)** *South China Agricultural University*	A Coupling Soil Model of Paddy Field Using CFD-DEM Coupling Method **Zhenyu Tang,** Hao Gong, Long Qi **(VIRTUAL)** *South China Agricultural University*	RADARSAT/RCM for Determining Crop Inventories in Coastal Guyana **Guia Marie M. Mortel,** Chandra A. Madramootoo, Vern Singhroy *McGill University*	Evaluation of Antibiotic-Resistance in Dairy Manures Using Metagenomic Tools **Daniel Flores Orozco** *University of Manitoba*
9:20am-9:40am	Automated Measurements of Rice Yield Traits on the Whole Panicle **Yuhao Zhou (VIRTUAL)** *South China Agricultural University*	An agricultural robot based on GNSS - machine vision integrated navigation **Long Qi, Dengbin Fu (VIRTUAL)** *South China Agricultural University*	Irrigation Management for Intensive Vegetable Production in Guyana **Guia Marie M. Mortel,** Chandra A. Madramootoo *McGill University*	Examining the Influence of Controllable Factors on the Performance of the Microbial Fuel Cell **Suhasini Srinivasan** *McGill University*
9:40am-10:00am	Benefits of Mechanical Method for Weed Control, Rice Growth, and Crop Yield in Paddy Fields in South China **Chuang Liu (VIRTUAL)** *South China Agricultural University*	Simulation of Tensile Behavior of Tobacco Leaf Using the Discrete Element Method (DEM) **Yuyuan Tian (VIRTUAL),** Qi Long; Feng Xiao *South China Agricultural University*	Performance of Filter Media and Aeration in Filters Used for Synthetic Manure Treatment **Paz Elizabeth Alvarez** *Université Laval*	Novel Method of Typha Latifolia Extraction by Microwave Radiation **Monika Jahan** *University of Manitoba*
10:00am-10:20am	Mild Hydrothermal Treatment of Wheat Straw to Reduce its Total Biogenic Ash **Yan Yu** *University of British Columbia*	Discrete Element Modelling of Soil Pressure Under Varying Number of Tire Passes **Kobby Acquah** *University of Manitoba*	Long-Term Trends of Phosphorous and Sediment Loads in Streams in the Great Lake Basin **Pranesh Kumar Paul** *University of Guelph*	Removal of Calcium Oxalate Plates from the Cattail Fibre Surface **Monika Jahan** *University of Manitoba*
10:20am-10:40am	**COFFEE BREAK**			

AFTER COFFEE	**ROOM: ASPEN** **FBP 2** **Theme 1: Food and Bioprocessing 2** Session Chair: Patrick Hennessy Dalhousie University	**ROOM: SOURIS** **AGRENG 2** **Theme 2: Agricultural Engineering 2** Session Chair: Mathieu Bilodeau Dalhousie University	**ROOM: SUMMERSIDE** **WATSOIL 2** **Theme 3: Water & Soil Management 2** Session Chair: Evan MacDonald University of Prince Edward Island	**ROOM: TIGNISH** **WASTMAN 2** **Theme 4: Waste Management 2** Session Chair: Dr. Michael Phillips The University of Doha for Science and Technology
10:40am-11:00am	Plasma Activated Water Disinfection of Kale and Spinach **Sellam Perinban** *McGill University*	Development and Evaluation of a Pilot-Scale Electro-Nanospray System for Improving Air Quality in Pig Barns **Roger Esteban Bolo,** Myra Martel, Brooke Thompson, Lifeng Zhang, Bernardo Predicala, Huiqing Guo *University of Saskatchewan*	Leveraging Precision Agriculture Technology for Crop Suitability Decisions **Asim Biswas,** Daniel Saurette, Tegbaru Bellete Gobezie *University of Guelph*	Phosphorus Load Factor for Buffalo Breeding in Quebec **Stephane Godbout,** Joahnn Palacios *Research and Development Institute for the Agri-Environment*
11:00am-11:20am	Simulation of Canola Seed Emergence Dynamics Under Different Soil Compaction Levels Using the Discrete Element Method **Hao Gong** *South China Agricultural University*	Coupled Cfd-Dem Simulation of Seed Flow in Horizontal-Vertical Tube Transition **Leno Jose Guzman Quinonez,** Ying Chen, Hubert Landry *University of Manitoba*	Soil, Water, and Topography Maps as a Management Tool to Improve Profitability and Sustainability Within the Potato Industry **Evan Mcdonald,** Aaitazaz Farooque *University of Prince Edward Island*	Synthetic Nitrogen Replacement in Hydroponics: Insect Waste-Based Organic Liquid Fertilizer for Basil Production, A Case Study **Vincent Desaulniers Brousseau**, David Leroux, Simone Martel, Peter Tikasz, Mohamed Debbagh, Thomas *McGill University*
11:20am-11:40am	Design and development of 'Diet DQ Tracker': A smartphone application for dietary assessment **Subeg Singh Mahal,** Christopher Kucha, Michael O. Ngadi *McGill University*	Using a Greenhouse Energy Model to Examine Potential for Maintaining Year-Round Growing Conditions In Off-Grid Greenhouses Across Canada **Alex Jacob Nauta,** William David Lubitz, Syeda Tasnim *University of Guelph*	Optimization of Parameters for Washing Operations in Livestock Buildings **Erika Yukari Nakanishi,** Joahnn H. Palacios-Rios, Stéphane Godbout, Sébastien Fournel *Research and Development Institute for the Agri-Environment*	Production of Hydrogen-Rich Gas from Biomass Gasification with In-Process Co2 Capture With Eggshell **Shakirudeen A. Salaudeen,** Bishnu Acharya, Aitazaz A. Farooque, Animesh Dutta *University of Prince Edward Island*
11:40am-12:00am	Strategies For Employing Whole-Cell Filamentous Fungal Biocatalysts in the Oxidation of 5-Hydroxymethylfurfural (Hmf) **Derek Thomas Troiano,** Valerie Orsat, Marie-Josee Dumont, Felicity Meyer *McGill University*	Performance Assessment of Modified Air-Filtered Trailer in Controlling Risk of Airborne Virus Infection During Livestock Transportation **Micah Jennilyn Alarcon Sapaden,** Alvin C. Alvarado, Bernardo Z. Predicala *Prairie Swine Centre, Inc.*	Building and Evaluating a Plant-Controlled Atmometer for Real-Time Irrigation Scheduling **Mujibur Rahman,** Ramanathan Sri Ranjan *University of Manitoba*	Extraction of Chitin from American Lobster Shells Optimized via Response Surface Methodology **Michael Kozma,** Bishnu Acharya, Rabin Bissessur *University of Prince Edward Island*
12:00pm-1:20pm	**LUNCH - CSBE/SCGAB ANNUAL GENERAL MEETING**			

MONDAY, JULY 25TH 2022

DAY 2-MONDAY
AFTERNOON TECHNICAL SESSIONS

TIME	LOCATION			
	ROOM: ASPEN **FBP 3** **Theme 1: Food and Bioprocessing 3** Session Chair: Dr. Ying Chen University of Manitoba	**ROOM: SOURIS** **AGRENG 3** **Theme 2: Agricultural Engineering 3** Session Chair: Dr. Gurpreet Singh Dalhousie University	**ROOM: SUMMERSIDE** **WATSOIL 3** **Theme 3: Water & Soil Management 3** Session Chair: Dr. Xander Wang University of Prince Edward Island	**ROOM: TIGNISH** **WASTMAN 3** **Theme 4: Waste Management 3** Session Chair: Hassan Afzaal University of Prince Edward Island
1:40pm-2:00pm	Evaluation of Aeration Strategy for On-Farm Stored Grain in Southern Australian Conditions Using Cfd-Based Control System **Shubham Subrot Panigrahi,** Chandra B. Singh, John Fielke *Lethbridge College*	Development of Web-Based Smart Agriculture Application for Real-Time Crop Water Requirements **Essayas Kassa,** Hassan Afzaal, Xander Wang, Aitazaz Farooque *University of Prince Edward Island*	Using Causal Loop Diagrams To Facilitate Participatory Water Resources Management **Jan Franklin Adamowski** *McGill University*	A Review of Biomass & Waste Biomass Fibers - Structures, Extraction Methods, and Surface Modifications **Md. Shadhin**, Mashiur Rahman, Ying Chen, Wen Zhong, Danny Mann, Mashiur Rahman *University of Manitoba*
2:00pm-2:20pm	Carbon Dioxide Movement Monitoring in a Commercial Grain Bin **Senthilkumar Thiruppathi,** K. Dhalsamant, C.B. Singh *Lethbridge College*	How Much Temperature Difference Could Adults of Cryptolestes Ferrugineus Detect in Wheat? **Anukiruthika Thangarasu,** Digvir S. Jayas, Fuji Jian *University of Manitoba*	Phytoremediation of Sulfamethoxazole and Ciprofloxacin In Wastewater **Kenton Connor McCorquodale-Bauer**, Nazim Cicek *University of Manitoba*	Innovative Aerobic Treatment of Pig Slurry Combining Venturi-Based Aeration and Horizontal Bioreactor **Stephane Godbout,** Patrick Brassard *Research and Development Institute for the Agri-Environment*
2:20pm-2:40pm	Development of A Green Process for Eggshell Decontamination Via Electro-Nanospraying Techniques **Shiva Aminian,** Myra Martel, Brooke Thompson, Lifeng Zhang, Shelley Kirychuk, Karen Schwean-Lardner *University of Saskatchewan*	Acoustic and Hyperspectral Imaging Sensing for Nondestructive Insect Infestation Detection in Apples **Akinbode Adedeji,** Nader Ekramirad, Alfadhl khaled, Chad Parrish, Kevin Donohue, Raul Villanueva *University of Kentucky*	Effect Of Tio2-Coated Materials on Disinfection Efficiency for Ensuring Water Quality of Outdoor Watering Troughs in Cow-Calf Farms **Heidi Dayana Pascagaza Rubio**, Sébastien Fournel, Stéphane Godbout, Joahnn Palacios *Université Laval*	Two-Stage Pyrolysis of Low-Density Polyethylene Waste **Laura Daniela Mila Saavedra**, Stéphane Godbout, Simon Barnabé, Joahnn Palacios *Université du Québec a Trois-Rivieres et IRDA*
2:40pm-3:00pm	Molecular Dynamic Simulations of Temperature and Pressure Processing in Atlantic Cod Major Allergen Parvalbumin Gad M 1 **Xin Dong**, Vijaya Raghavan *McGill University*	Influence of Flow Microbial Fuel Cell on Methane Emission From Hydroponic Cultivation of Rice Plant **Shuo Wang**, Yvan Gariepy, Ademola Adekunle, Vijaya Raghavan *McGill University*	Improving Winter Soil Temperature and Erodibility Simulation Within the Swat Model **Jaskaran Dhiman,** Ramesh Rudra, Prasad Daggupati, Shiv Prasher, Pradeep Goel *University of Guelph*	Municipal Solid Waste Management Through Life Cycle Assessment to Mitigate Climate Change **Azad Ibn Ashraf,** Eugene Mohareb, Maria Vahdati *The University of Doha for Science and Technology*
3:00pm-3:20pm	Physico-Chemical Analysis And Sensory Studies of Cicer Arietinum-Based Beverage **Neha Sherma**, Valérie Orsat *McGill University*		Relationship Between Spatiotemporal Variability of Soil Moisture with Silage Corn Growth Cultivated on Podzols In Boreal Climate Salman Salman, Lakshman Galagedara *Memorial University of NL*	Extraction and Characterization of Cellulose Fibrils From Papermill Sludge Using Microwave-Assisted Pretreatment Coupled With Ultrasonic Acid Hydrolysis **Keerthana Ketheeswaran**, Lakshman Galagedara *Memorial University of NL*
3:20pm-3:40pm	**COFFEE BREAK**			

DAY 2-MONDAY
AFTERNOON TECHNICAL SESSIONS

	ROOM: ASPEN FBP 4 **Theme 1: Food and Bioprocessing 4** Session Chair: Dr. Kenny Corscadden Lethbridge College	ROOM: SOURIS AGRENG 4 **Theme 2: Agricultural Engineering 4** Session Chair: Dr. Kuljeet Grewal University of Prince Edward Island	ROOM: SUMMERSIDE WATSOIL 4 **Theme 3: Water & Soil Management 4** Session Chair: Dr. Andew MacKenzie Agriculture Agri-Food Canada	ROOM: TIGNISH WASTMAN 4 **Theme 4: Waste Management 4** Session Chair: Dr. Yulin Hu University of Prince Edward Island
AFTER COFFEE				
3:40pm-4:00pm	Optimization of Atmospheric Cold Plasma Treatment Conditions for Bactericidal Effect of Escherichia Coli in Wheat Flour with Response Surface Methodology **Jeongmin Lee,** Seul-Ki Park, Oon-Doo Baik, Darren Korber *University of Saskatchewan*	High Speed Sorting of Aflatoxin B1 Contamination in Whole Almonds Using Multispectral Imaging **Chandra B Singh,** Brajesh Kumar Panda *Lethbridge College*	Autonomous Mapping of Shallow Depth Soil Biological Characteristics **John Lan,** Viacheslav Adamchuk, Pierce Dias-Carlson, Shamus McGuire *McGill University*	Determining the Recyclability of Alkali on Typha Biomass Properties Using A Python Computer Programming Language **Mashiur Rahman,** Hrishekesh Banik *University of Manitoba*
4:00pm-4:20pm	Prediction of Protein Content in Chickpea Flour Using Near-Infrared (Nir) Hyperspectral Imaging **Dhritiman Saha,** T. Senthilkumar, C.B. Singh, Annamalai Manickavasagan *University of Guelph*	A Data Envelopment Analysis Model for Process Performance Evaluation of Pea Protein Fractionation **Farzin Eslami,** Peter Adewale, Michael Ngadi *McGill University*	Characterization of Vegetable Wash Water and Conception of Optimized Washing Chains for Reducing Environmental Pollution **Camille Cosnard-Gaudreau,** Joahnn Palacios *Research and Development Institute for the Agri-Environment (IRDA)*	Development of Hydrophobic Paper-Sheet for Potential Food Packaging Applications **Suranjoy Singh Singam,** Loong-Tak Lim, Manickavasagan Annamalai *University of Guelph*
4:20pm-4:40pm	Greening and Glycoalkaloids In Potato Tubers: Potential Solutions **Kshanaprava Dhalsamant,** C. B. Singh *Lethbridge College*	Real-time hazard detection in highly variable agricultural environments **Megan Govers**, Andrew Hamilton-Wright, Marwan Hassan, Michele L. Oliver *University of Guelph*	Light Pollution Study with a Focus on Ontario Greenhouse Light Emittance **Benjamin Snow**, William Lubitz, Syeda Tasnim, Thomas Graham *University of Guelph*	Comparison of Air Contaminants Emissions from Two Pig Slurry Spreading Methods in a Controlled Environment **Vincent Desbiens,** Patrick Brassard, Mahsa Maghdadi, Valérie Létourneau *IRDA*
4:40PM-5:00pm	Combined Effects of Biochar, Hydrogel, and Lime Application on Nutrient Leaching and Green Pepper Plant Growth **Joba Purkaystha,** Shiv Prasher, Muhammad T. Afzal *McGill University*	Aeration-Enhanced Compost Hotbeds for Heat Recovery and Heat Storage **Yongjiang Wang,** Grant Clark, Michael Yongha Boh *McGill University*	Delineating Management Zones for Site-Specific Fertilizer Application in Potato Fields **Muhammad Jehanzeb Masud Cheema,** Muhammad Naveed Tahir *PMAS-Arid Agriculture University*	Life Cycle Assessment of Land-Applied Municipal Wastewater Biosolids in Canada **Elissa Saliba**, Anne-Marie Boulay, Grant O. Clark *McGill University*

TUESDAY, JULY 26TH 2022
DAY 3- TUESDAY
MORNING SESSIONS

7:00am-8:00am	**Breakfast**
8:00am-9:00am	**Plenary Session Keynote Speaker** **Room: Rustico Tracadie** ***Title:*** *"Opportunities and challenges of AI in precision agriculture"* Professor Arnold W. Schumann Soil & Water Science, University of Florida, USA. Professor Schumann's research focus is site-specific soil and water management for improving the profitability of Florida citrus and protecting the environment. Professor Schumann aims to develop improvements in citrus nutrition and irrigation using precision agriculture, especially better N and water use efficiency for incorporation in Best Management Practices. He believes that it is important to identify the causes and effective remedies for in-field soil variability which can cause spatial yield variability and low profitability per acre.

TUESDAY, JULY 26TH 2022

DAY 3- TUESDAY
MORNING TECHNICAL SESSIONS

TIME	LOCATION			
	ROOM: ASPEN **FBP 5** **Theme 1: Food and Bioprocessing 5** Session Chair: Dr. Khalil Al-Mughrabi Government of New Brunswick	**ROOM: SOURIS** **AGRENG 5** **Theme 2: Agricultural Engineering 5** Session Chair: Dr. Gobinda Saha University of New Brunswick	**ROOM: SUMMERSIDE** **PAC 1** **Theme 5: Precision Agriculture 1** Session Chair: Peter Swinkels Doug Bragg Enterprises	**ROOM: TIGNISH** **ECC 1** **Theme 6: Environment & Climate Change 1** Session Chair: Dr. Pelin Kinay University of Prince Edward Island
9:00am-9:20am	X-Ray Microtomography and Multifractal Analysis of Internal Pore Structures of Fried Coated Food Product **Md. Hafizur Rahman Bhuiyan,** Michael O. Ngadi *McGill University*	Characterization of Flour Particles Using Synchrotron X-Ray Microtomography–A Review **Chitra Sivakumar,** Catherine Rui Jin Findlay, Jitendra Paliwal University of Manitoba	In-Field Scanning of the Spectrum Potato Plant Leaves for a Less Destructive Technique to Estimate Nutrients **Reem Abukmeil,** Ahmad Al-Mallahi *Dalhousie University*	Comparing the Ecological Sustainability Performance of Smallholder Farming Systems: A Case Study in Rural Panama **Roberto Forte**, Osborne Grant Clark *McGill University*
9:20am-9:40am	Detection of Deoxynivalenol (Don) in Fusarium Infected Corn Grains Using Near-Infrared Hyperspectral Imaging **Rathna Priya Thangaraj Sundaramurthy**, Dhritiman Saha, T Senthilkumar, Chandra B Singh, Manickavasagan Annamalai *University of Guelph*	Hydrothermal Response of Wood Pellets to Internal Heat Generation Due to Hygroscopic Wetting **Jun Sian Lee**, Shahab Sokhansanj, Hamid Rezaei, Jim Lim University of British Columbia	Influence of Pore-Water Electrical Conductivity on Responses of Electromagnetic Induction and Ground-Penetrating Radar **Sashini Pathirana**, Lakshman Galagedara, Christina Smeaton, Sébastien Lambot, Adrian Unc Memorial University	Climate Change Impact Assessment on Potatoes in Pei Using a Cropping Simulation Model **Toyin Omoriyeba Adekanmbi**, Xander Wang *University of Prince Edward Island*
9:40am-10:00am	The Future(S) of Our Food System: Integrating Framework Analysis and Scenario Design for Optimal Future Food System Analysis **Prince Agyemang**, Ebenezer Kwofie, Fabrice Abunde *McGill University*	Developing a Two-Pass and a Single-Pass AI-Driven System for Monitoring Real-Time Changes in Visual Attributes During Fluidized Bed Drying **Anthony Chukwuemeka Iheonye,** Vijaya Raghavan, Frank Ferrie, Valérie Orsat, Yvan Gariepy *McGill University*	Rgb to Normalized Difference Vegetation Index Translation Using Conditional Generative Adversarial Networks **Aitazaz A. Farooque,** Hassan Afzaal, Evan MacDonald, Farhat Abbas, Travis Esau *University of Prince Edward Island*	Effects of Weather on Temperatures of Floor, Roof, Sidewalls, and Headspace of a Corrugated Steel Bin Filled With 12.5% Moisture Content Wheat, Stored for 26 Months in Winnipeg, Canada **Vimala S K Bharathi,** Fuji Jian, Digvir S Jayas *University of Manitoba*
10:00am-10:20am	Sustainable Apple Circularity: A Life Cycle Assessment of Dried Apple Processing **Raphael Aidoo,** Ebenezer Miezah Kwofie, Jeyam Subbiah, Greg Thoma *McGill University*	Application of Nanotechnology for Mitigation of Deoxynivalenol (DON) Contamination in Wheat Grains **Alvin Alvarado**, Analyn Asok, Don Vic Obaob, Maria Rosario Mosqueda *University of Saskatchewan*	Current Status of Mechanization for Precision Agriculture in India **Manjeet Singh,** Aseem Verma, Tarandeep Singh, Jugminder Kaur, Parmar Raghuvir *Punjab Agricultural University*	Greenhouse Gas and Ammonium Emissions from Egg Production Systems in Southern Quebec **Andrea Katherin Carranza Diaz**, A. Dalila Larios M., Stéphane Godbout *Université Laval*
10:20am-10:40am	**COFFEE BREAK**			
AFTER COFFEE	**ROOM: ASPEN** **FBP 6** **Theme 1: Food and Bioprocessing 6** Session Chair: Dr. Danny Mann University of Manitoba	**ROOM: SOURIS** **AGRENG 6** **Theme 2: Agricultural Engineering 6** Session Chair: Dr. Amit Kumar University of Alberta	**ROOM: SUMMERSIDE** **PAC 2** **Theme 5: Precision Agriculture 2** Session Chair: Dr. Aitazaz Farooque, University of Prince Edward Island	**ROOM: TIGNISH** **ECC 2** **Theme 6: Environment & Climate Change 2** Session Chair: Rimsha Khan University of Prince Edward Island
10:40am-11:00am	Glyphosate Residue Detection in Selected Pulses Using FTIR Spectroscopy **Sindhu Sindhu**, Sonu Sharma, Manickavasagan Annamalai *University of Guelph*	Enhanced Disinfection Measures to Control Growth of Pathogens in Antibiotic-Free Pig Production **Marjorette H Baguindoc**, Alvin C. Alvarado, Bernardo Z. Predicala, Darren R. Korber *Prairie Swine Centre*	Performance Comparison Between Pulse Width Modulation and Electrical Stop Valves in Site-Specific Application of Pesticides **Humphrey Maambo,** Ahmad Al-mallahi *Dalhousie University*	Noise Emissions from Ontario Grain Dryers **William David Lubitz, Kyle** Teeter, Ethan Parker, James Dyck *University of Guelph*
11:00am-11:20am	Distillers Solubles (DS) From Ontario Corn Ethanol Industries as a Novel Bioresource of Anti-DPP4 Peptides **Sonu Sharma,** Ranjan Pradhan, Annamalai Manickavasagan, Mahendra *University of Guelph*	An Assessment of Crop Residue Availability, Costs, Energy Input, and Emissions for a Medium Capacity Agri-Pelletization Plant **Ryan Jacobson, Shahab Sokhansanj,** Omid Gholami, Shahab Sokhansanj *University of British Columbia*	Transmission and Reception Modules to Obtain Georeferenced Data Using Global Navigation Satellite System Over Controller Area Network for Precision Farming Applications **Mozammel Bin Motalab,** Ahmad Al-mallahi *Dalhousie University*	Climate Change Impacts on Rainfed Agriculture and Mitigation Strategies for Sustainable Agricultural Management – A Case Study of Prince Edward Island, Canada **Ahmad Zeeshan Bhatti**, Aitazaz Ahsan Farooque *University of Prince Edward Island*

DAY 3- TUESDAY
MORNING TECHNICAL SESSIONS

11:20am-11:40am	Evaluation of Physicochemical Properties and Bioactive Components of Sour Cherry Cultivars Grown in Ontario **Prabhjot Kaur**, Jayasankar Subramanian, Ashutosh Singh *University of Guelph*	Deep Learning-Based Tree Detection and Classification for Forest Monitoring **Bruno Brandoli**, Wesley Goncalves, Jose Rodrigues-Jr, Travis Esau *Dalhousie University*	Performance and Cost Benefit of Optical Spot Spraying Technologies in Conventional, Dryland Farming in Western Canada **Ike Edogu** *Olds College*	Hydrothermal Gasification of Fuel Pellet Obtained from Co-Pelletization of Canola Hull, Oat Hull and Barley Straw: Parametric Effects of Temperature, Residence Time and Feed To Water Ratio **Tumpa Rani Sarker**, Venkatesh Meda, Ajay Kumar Dalai *University of Saskatchewan*
11:40am-12:00pm	Heating Characteristics During Radiofrequency Heating of Homogeneous Solid in Rectangular Tubular Type Applicator With a Parallel Plate Configuration **Moirangthem, Tolen Tombung**, Dayo Oke, Oon Doo Baik *University of Saskatchewan*	Effect of Contact Material on the Chargeability of Pulses Particles In a Vortex Flow Tribocharger **Jingsi Yang,** Zhang, Li Feng; Meda, Venkatesh; Nickerson, Michael; Das, Divyapratim *University of Saskatchewan*	Detection of Potato Plant Leaves Anomalies on Field Images Using Deep Learning **Imran Hassan,** Ahmad Al-mallahi *Dalhousie University*	Development of a Mechanized Strawberry Trimmer for Indoor Raised Bed Strawberry Production **Connor Mullins,** Travis Esau *Dalhousie University*
12:00pm-1:20pm	**LUNCH** **Award Gala for Recipients for 2020 and 2021**			

TUESDAY, JULY 26TH 2022
DAY 3- TUESDAY
AFTERNOON TECHNICAL SESSIONS

TIME	LOCATION			
1:40pm-3:00pm	**POSTER SESSIONS (MAIN HALL)**			
	ROOM: ASPEN **FBP 7** **Theme 1: Food and Bioprocessing 7** Session Chair: Dr. Stephane Godbout Research and Development Institute for Agri-Environment	**ROOM: SOURIS** **AGRENG 7** **Theme 2: Agricultural Engineering 7** Session Chair: Dr. Ike Edeogu Olds College	**ROOM: SUMMERSIDE** **PAC 3** **Theme 5: Precision Agriculture 3** Session Chair: Alexis Ruiz González University of Laval	**ROOM: TIGNISH** **ECC 3** **Theme 6: Environment & Climate Change 3** Session Chair: Dr. Shoaib Saleem PMAS Arid Agriculture University
3:00pm-3:20pm	Classification of Almonds Defects Using Machine Vision and Support Vector Machine **Hiren Sanathara,** Chandra B Singh, Sang-Heon Lee, Wilmer Ariza Ramirez *Lethbridge College*	Predictive Model Development for Techno-Functional Properties of Protein Isolates: A Machine Learning Approach **Derrick Kpakpo Allotey**, Raphael Aidoo, Ebenezer Miezah Kwofie, Peter Adewale, Michael Ngadi McGill University	Development of a Control and Recirculation System to Accommodate Spot Application of Granular Agrochemicals in Wild Blueberry Fields **Craig MacEachern**, Travis Esau, Scott White, Aitazaz Farooque, Qamar Zaman *Dalhousie University*	Effects of Crude Protein Content and Electrolyte Balance on Nitrogen Losses by Volatilization in Broilers **Théophane de Rauglaudre**, Sébastien Fournel *Université Laval*
3:20pm-3:40pm	A Molecular Simulation Approach to the Application of Stressors on Mung Bean Protein **Ramalingam, Saipriya,** Jamshid Rahimi, Ashutosh Singh *University of Guelph*	Numerical Modelling of Drying Processes in a Mixed-Flow Grain Dryer Based on Coupled DEM-CFD Method **Xinyi Wu** *University of Manitoba*	Autonomous Agricultural Equipment Evaluation for Broad-Acre Crop Production **Sofia Bahmutsky,** Roy Maki, Julie Cobb, Yevgen Mykhaylichenko *Olds College*	Towards Digital Soil Characterization Using Proximal Soil Sensor Data Fusion: A Case Study **Felippe Silva Karp Hoffmann**, Viacheslav Adamchuk, Alex Melnitchouck, Barry Allred McGill University
3:40pm-4:00pm	**COFFEE BREAK**			

DAY 3- TUESDAY
AFTERNOON TECHNICAL SESSIONS

TIME	ROOM: ASPEN FBP 8 **Theme 1: Food and Bioprocessing 8** Session Chair: Prasad Daggupati University of Guelph	ROOM: SOURIS AGRENG 8 **Theme 2: Agricultural Engineering 8** Session Chair: Humna Khan Dalhousie University	ROOM: SUMMERSIDE PAC 4 **Theme 5: Precision Agriculture 4** Session Chair: Dr. Lakshman Galagedara Memorial University	ROOM: TIGNISH ECC 4 **Theme 6: Environment & Climate Change 4** Session Chair: Ahmad Hanmbal Khan Dalhousie University
4:00pm-4:20pm	Three-Dimensional Characterization of Micronized Pulses Using X-Ray Micro-Computed Tomography **Chyngyz Erkinbaev** *University of Manitoba*	Enhancing the Design of Nutrition-Sensitive Agriculture (Nsa) Interventions **Arturo Alejandro Mayorga Martínez**, Kucha, Christopher; Kwofie, Ebenezer; Ngadi, Michael *McGill University*	Multiple Sensor Fusion for Optimal Plant Growth in Growth Chambers **Sun Chen Chen** *University of Manitoba*	Automatic Picking Head Height Control for Wild Blueberry Harvesters Using Stereo 3d Imaging **Patrick James Hennessy**, Travis J. Esau; Craig B. MacEachern, Qamar U. Zaman, Arnold W. Schumann *Dalhousie University*
4:20pm-4:40pm	A Respiration Chamber System That Measures Gas Emission for Strawberry **Catherine Nader Youssef,** Ashutosh Singh, Abdallah Elsayed *University of Guelph*	Fabrication and Characterization of PVA Biocompatible Polymer Film With Essential Oils as Additives for Active Food Packaging **Mohannad T Aljarraha,** Majdi A Almahasneh *Doha University for Science and Technology*	Techno-Economic-Environmental Analysis of Tri-Generation System in Vertical Farm Applications **Eric Swayze,** Kuljeet Singh, Arshan Singh *University of Prince Edward Island*	Development of Algae-Based Biorefinery **Yulin Hu,** Chunbao Xu, Amarjeet Bassi *University of Prince Edward Island*
4:40pm-6:30pm	**BREAK**			
6:30pm-9:30pm	**BANQUET**			

DAY 4- WEDNESDAY
TECHNICAL TOUR

9:00am-5:00pm	1st Stop: HJV Equipment - Specialized Agriculture Equipment
	2nd Stop: Agriculture Agri-Food Canada Research Station
	3rd Stop: Wild Blueberry Processing Facility
	4th Stop: School of Climate and Change and Adaptation - UPEI
	5th Stop: Greenwich Prince Edward Island National Park - Recreation and Beach

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