

PAW 2024

People Around the World International Congress

MAKING A WORLD OF DIFFERENCE

October 16 - 18, 2024
Saskatoon, Saskatchewan

A dynamic event bringing together experts and innovators to explore how a cohesive approach to the Food-Water-Energy nexus, using data as a cross-cutting concept, can address socio-cultural issues both locally and globally. Attendees will celebrate achievements, share insights and help shape the future of sustainable solutions.

<https://internationaloffice.usask.ca/paw/paw-2024.php>

Welcome to PAW 2024

Greetings from the PAW 2024 Congress Chair

On behalf of the University of Saskatchewan (USask), I am thrilled to welcome you to the People Around the World (PAW) 2024 International Congress, where we will explore the interconnected dynamics of the Food-Water-Energy nexus through the unifying lens of data.

This year, we are uncovering how integrated approaches in these fields can effectively address socio-cultural challenges on both local and global scales. Harnessing the current expertise that exists at USask, we have developed a multifaceted two-days that will explore many important ideas, challenge assumptions and create a space to tackle real-world problems head on. The PAW International Congress provides an arena that blends academic, industry and student voices together to address some of the biggest challenges facing the planet today.

I firmly believe that change does not happen without bringing together the ideas of many. One person cannot stand alone in addressing the challenges our world is currently facing - be it climate change, food insecurity or

artificial intelligence. Now more than ever, we need to pool our resources together, unite our voices and share our collective wisdom to create a better future for the generations that will come after us.

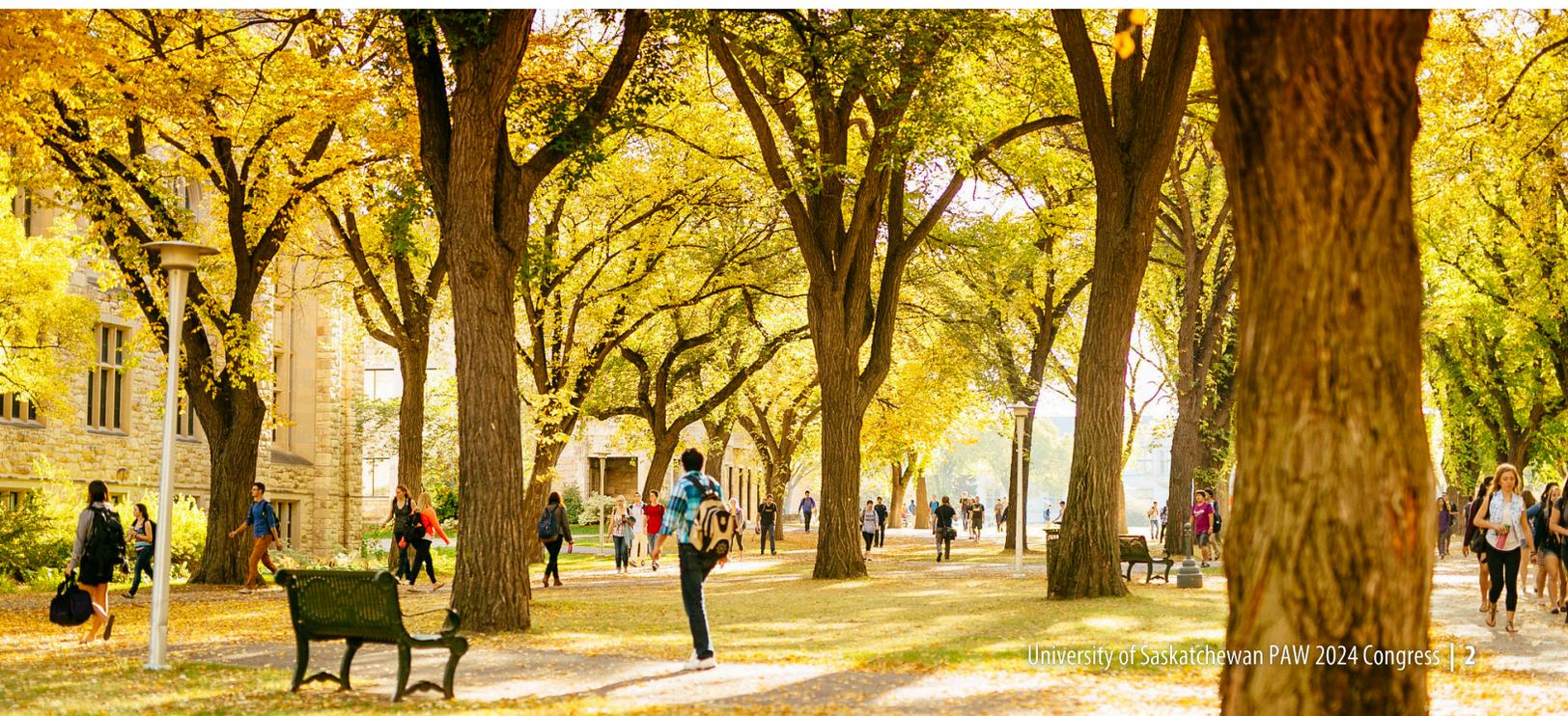
I urge you to actively engage in discussions, share ideas and collaborate on solutions. Together, we will chart a course toward sustainable solutions that resonate across communities worldwide.

A heartfelt thank you to the contributions of our organizers, panelists, moderators and keynote speakers for their dedication in making this event a reality.

I look forward to seeing the impacts this congress will have and the continued collaboration between us all for generations to come.



Dr. Baljit Singh
Vice-President Research,
University of Saskatchewan



PAW 2024 Co-Chairs

Meet the co-chairs of the congress



Dr. Baljit Singh

Dr. Baljit Singh is a highly accomplished researcher, educator and administrator in the field of veterinary medicine, with specific expertise in lung biology and anatomy. He began his role as vice-president research at the University of Saskatchewan in 2021, after serving as dean of the University of Calgary Faculty of Veterinary Medicine (2016–2020), and as associate dean of research at the Western College of Veterinary Medicine at the University of Saskatchewan (2010–2016). He also was a special advisor (experiential learning) to the provost (2010–2012) at the University of Saskatchewan. Recently, he served on a seven member advisory panel on the Canadian Federal Research Support System (the Bouchard Report).

Singh's formal education includes a Bachelor of Veterinary Science and Animal Husbandry (BVSc and AH) and Master of Veterinary Science (MVSc) from Punjab Agricultural University in Punjab; a PhD from the University of Guelph; post-doctoral training at Texas A&M University and Columbia University, New York; and he completed licensing requirements set by the Canadian Veterinary Medical Association (CVMA) and American Veterinary Medical Association (AVMA) for foreign veterinary graduates.

Singh's research has focused on cell and molecular biology of lung inflammation. He is the author or co-author of more than 135 peer-reviewed journal articles and books including the Textbook of Veterinary Anatomy (5th edition; Elsevier), and has supervised the research training of more than 100 undergraduate, graduate and postdoctoral students.

Singh has received the 3M National Teaching Fellowship (2009), the Alan Blizzard National Award for Collaboration in University Teaching and Learning (2010), the University of Saskatchewan Master Teacher Award (2008), and the Carl J. Norden Distinguished Teacher Award (2003). He has also received the Outstanding Veterinary Anatomist Award from the American Association of Veterinary Anatomists (2015) as well as the Pfizer Award for Research Excellence (2002). He was named a fellow of the American Association of Anatomists (2013) and a fellow of Canadian Academy of Health Sciences (2018).



Dr. Darcy D. Marciniuk

Dr. Darcy D. Marciniuk, MD, FRCPC, FCAHS, Master FCCP is a professor of Respiriology, Critical Care and Sleep Medicine, and associate vice-president research at the University of Saskatchewan (USask).

Marciniuk is recognized internationally as an expert and leader in Chronic Obstructive Pulmonary Disease (COPD), clinical exercise physiology, Pulmonary Rehabilitation and knowledge transfer with more than 500 invited national and international presentations and 250 peer-reviewed publications, chapters and reviews (Google Scholar h-index 59). Marciniuk is a past-president of the Canadian Thoracic Society and the American College of Chest Physicians and past-chair of the Forum of International Respiratory Societies. He served as a founding steering committee member of Canada's National Lung Health Framework and co-chaired the 2016 CHEST World

PAW 2024 Co-Chairs (cont'd)

Meet the co-chairs of the congress

Congress in Shanghai. Marciniuk has led and participated in many COPD, Cardio-Pulmonary Exercise Testing (CPET) and Pulmonary Rehabilitation clinical practices guidelines and recently chaired a multi-society international guideline on race and pulmonary function testing.

As associate vice-president research, Marciniuk led the development of USask's International Blueprint. He is

responsible for leading strategic initiatives to foster and enhance research success at USask; advancing international research activity and impact, and providing oversight of the International Office; defining and communicating priorities and outcomes for the health research portfolio and health discovery agenda; and providing leadership and oversight of USask's Responsible Conduct of Research portfolio and practices.

PAW 2024 Emcees

Meet the masters of ceremony



Janelle Hutchinson

As the University of Saskatchewan's first chief sustainability officer, Janelle Hutchinson leads the implementation of our *Sustainability Strategy 2021–2030: Critical Path to Sustainability* and assists leaders across the organization with moving the work of the sustainability strategy forward. Janelle's passion for sustainability began with degrees in microbiology and agricultural and bioresources engineering; upon graduation, she eagerly joined post-secondary education administration, becoming an employee at USask in 2002, where she has led teams within student services, strategic services and infrastructure, planning and land development. Hutchinson is delighted to now be able to focus on sustainability within the post-secondary environment, working across campus to identify ways to meet USask's commitments, while also celebrating all that USask's community contributes toward a more sustainable and just future for all.



Leslie-Ann Schlosser

Leslie-Ann Schlosser is an award-winning communicator and director of the University of Saskatchewan's Research Profile and Impact unit. With a passion for creative storytelling, she leads a talented team dedicated to showcasing USask's innovative research, scholarly and artistic works.

Prior to her current role, Schlosser was the editor of USask's alumni magazine, *Green & White*, and also worked at SaskPower and CBC Saskatchewan.

Schlosser thrives on sharing USask's groundbreaking discoveries with the world. She believes every researcher has a story worth telling, and she's dedicated to making those stories shine.

Additional Congress Contributors

Meet the people behind special content presented at PAW 2024

ELDER ROLAND DUQUETTE

Elder Roland Duquette is an independent, ceremonial elder from Mistawasis Nêhiyawak First Nation. He is a Residential School Survivor, cultural knowledge keeper, land-based/language teacher and works with many

USask units including the Gordon Oakes Redbear Student Centre and local organizations. His teachings include traditional medicines, protocol, the history and legacies of policies, communication, mediation and much more.



PAW 2024 Program

Pre-Congress Events: Tuesday, October 15 to Wednesday, October 16, 2024

1:30 PM–4:00 PM DEVELOPING AND MAINTAINING SUSTAINABLE RESEARCH PARTNERSHIPS IN GERMANY

Health 1130, Health Sciences Building

Opening remarks

Darcy Marciniuk – Associate Vice President Research and Congress Co-Chair

Presentation and Q&A

John Paul Kleiner – Senior Manager, University Relations, DAAD Information Point Toronto

Collaboration experience sharing by select USask faculty and students

Closing remarks

Markus Brinkmann – Special Advisor (Germany) to the Office of the Vice-President Research

Pre-Congress Tours: Wednesday, October 16, 2024

8:30 AM–9:30 AM CONTROLLED ENVIRONMENT FACILITY (PHYTOTRON)

The Controlled Environment Facility, also known as the Phytotron, consists of 183 environmentally controlled reach-in cabinets and walk-in rooms that can be programmed to produce various environmental conditions, such as qualities and intensities of light, ranges of temperature and humidity. The cabinets and rooms are available on a rental basis to clients within the University of Saskatchewan organization.

The CEF is approximately 30,000 sq ft with approximately 8,300 sq ft being chamber space used for growing. The rest of the space is general workspace and labs. The chambers range in size from 7 sq ft to 178 square ft. There are 150 controlled chambers located in the main area and another 33 controlled chambers located throughout the Agriculture Building. The CEF recently concluded a \$12.5-million major upgrade with the addition of energy efficient lighting as well as updated chilling units.

10:00 PM–11:00 PM CANADIAN LIGHT SOURCE (CLS)

See inside Canada's only synchrotron!

The Canadian Light Source (CLS) is one of the largest science projects in Canada's history. Their facility speeds up electrons to produce intensely bright synchrotron light that allows scientists to study materials at a molecular level. Over 1,000 researchers from around the world use the CLS every year. On your tour, you'll learn about CLS' history, how their machine works and examples of how researchers have used the facility to conduct ground-breaking research in the fields of health, agriculture, the environment and advanced materials.

PAW 2024 Program

Pre-Congress Tours: Wednesday, October 16, 2024 (cont'd)

1:00 PM–2:30 PM UNIVERSITY OF SASKATCHEWAN CAMPUS SUSTAINABILITY TOUR

The University of Saskatchewan campus is full of sustainability features both obvious and hidden for the eager explorer to discover. By taking the Campus Sustainability Tour, you can familiarize yourself with all of the ways that the university is making itself more sustainable across a variety of areas.

3:00 PM–4:00 PM RAYNER FACILITIES TOUR

Join us for a tour of the Rayner Dairy Research and Teaching Facility, located on campus, which accommodates approximately 100 lactating cows with robotic, parlor and tiestall milking capabilities. A viewing gallery accommodates public access and education on modern dairy agriculture production systems. Research performed in the facility includes dairy nutrition and feed development, animal fertility and health, animal management, technology development, application of information technologies and development of green technologies for improved sustainability. Come learn how the dairy industry is working to improve water use efficiency, reduce GHG emissions and improve the quality of milk produced.

THE FOLLOWING TOURS ARE ALSO AVAILABLE TO YOU ON AN INDIVIDUAL SELF-GUIDED BASIS AND DO NOT REQUIRE YOUR REGISTRATION:

The [Museum of Natural Science](#) is designed to outline evolution throughout geological time, providing an integrated learning environment, with displays of living plants, animals and fossils.

The [Museum of Antiquities](#) hosts a collection of ancient Greek, Roman, Egyptian and Near Eastern sculpture in full-scale replica, as well as original pottery, glass and ancient coinage.

The Kenderdine, College and Snelgrove [Art Galleries](#) showcase work by artists and curators from the university and from the wider local, national and international community.

In addition to preserving the core collection of John G. Diefenbaker's personal artifacts, the [Diefenbaker Canada Centre](#) hosts exhibits and programs that explore citizenship, leadership and Canada's role in the international community.

The [University of Saskatchewan Computer Museum](#) is dedicated to the preservation, interpretation and celebration of yesterday's computing artifacts.

PAW 2024 Program

Day One: Thursday, October 17, 2024

Emcee: Janelle Hutchinson | Chief Sustainability Officer, University of Saskatchewan

7:30 AM–8:30 AM REGISTRATION AND LIGHT BREAKFAST

Garry Room, Marquis Hall

8:30 AM–9:30 AM DAY ONE OPENING REMARKS

Garry Room, Marquis Hall

Introductory remarks and land acknowledgement

Janelle Hutchinson – Chief Sustainability Officer, University of Saskatchewan

Welcome Song

Buffalo Boy

Prayer and greetings

Elder Roland Duquette

Welcome remarks

Dr. Darcy Marciniuk – Associate Vice-President Research, University of Saskatchewan

Closing Song

Buffalo Boy

9:30 AM–10:15 AM OPENING KEYNOTE SPEAKER

Garry Room, Marquis Hall

Crossing Boundaries: Data-Driven Approaches to the Food-Water-Energy Nexus for Sustainable Development

Dr. Daniela S. Jones – Assistant Professor, Biological and Agricultural Engineering Department and Data Science Academy Director of Agricultural Analytics – North Carolina State University, USA

Summary

This talk will explore the critical role of data in addressing the interconnected challenges of food production, water management and energy systems. Dr. Daniela S. Jones will highlight how innovative, data-driven approaches can optimize resource use, improve sustainability and solve socio-cultural issues both locally and globally. Drawing on her transdisciplinary research, Jones will present case studies such as the optimization of bioenergy supply chains, the application of AI in agricultural phenotyping, yield predictions, remote resource assessments and nutrient management in water-vulnerable regions. The talk will demonstrate how leveraging geospatial data, machine learning and advanced analytics can drive impactful solutions within the Food-Water-Energy nexus, contributing to a more resilient and sustainable future.



PAW 2024 Program

Day One: Thursday, October 17, 2024 (cont'd)

10:15 AM–10:30 AM BREAK

Garry Room, Marquis Hall

10:30 AM–12:00 PM PLENARY PANEL

Garry Room, Marquis Hall

Food, Water, and Energy 2.0: Data-Driven Approaches and How They Are Motivating New Solutions and New Opportunities

Join us to hear this expert panel discuss how data (data science innovations, new forms of computing, AI, mathematics, big data, small data, etc.) are changing how we understand, use and protect food, water and energy.

Moderator

Dr. Steven Rayan – Professor and Deputy Head, Mathematics and Statistics; Director, Centre for Quantum Topology and Its Applications (quanTA); Director, Interdisciplinary Programming, College of Graduate and Postdoctoral Studies – University of Saskatchewan, Canada

Panelists

Dr. Saurabh Biswas – Living Skies Postdoctoral Research Fellow, Community Appropriate Sustainable Energy Security (CASES) Initiative – University of Saskatchewan, Canada

Genya Crossman – Quantum Strategy Consultant – IBM Quantum, Germany

Dr. Carsten Mann – Vice-Dean, Faculty of Forest and Environment – Eberswalde University for Sustainable Development, Germany

Dr. Malabika Pramanik – Professor, Department of Mathematics – University of British Columbia; Scientific Director, Banff International Research Station (BIRS), Canada



PAW 2024 Program

Day One: Thursday, October 17, 2024 (cont'd)

12:00 PM–1:00 PM LUNCH

Garry Room, Marquis Hall

1:00 PM–2:30 PM STUDENT POSTER SESSION

Garry Room, Marquis Hall

During the student poster session, we invite our guests to select their top student poster based on the overall quality of the posters. When making the selection, it is important to consider factors such as content clarity, visual design, innovation, relevance to the topic and graphic presentation skills.

Michele Monroy-Valle – *A Diverse Diet Including Dairy and Fruit Shows Promise to Improve Growth and Bone Health in Mayan Children*

Bernd Steiger – *A Route to Selective Arsenate Adsorption in Phosphate Solutions via Ternary Metal Biopolymer Composites*

Bernd Steigener – *Sustainable Agro-waste Pellets as Granular Slow-release Fertilizer Systems*

Mahesh Rachamalla – *Arsenic-Induced Multigenerational Toxicity: A Sustainable Development Approach to Protecting Health through Environmental Stewardship*

Zoe Schipper and Adrielle Souza Lira – *Assessing the Impact of Food Insecurity on Mental Health in Canada: Evidence from the 2019-20 Canadian Community Health Survey*

Lozaalsadat Taghavi – *Biomass Fiber Isolation via Alkali and Bleach-Based Treatment*

Mariam Mir – *Comparison of Mechanically Modified Flax with Cotton Fibers for Enhanced Cationic Dye Uptake*

Marzieh Heidari Nia – *Development of Sustainable Binary Biopolymer Antibacterial Spray Coatings for Food Safety Applications*

Michaela Sidloski – *“Doing” Intersectionality: An Equity-Focused Transdisciplinary Process for Climate Change Adaptation Planning*

Amna Farooq, Masooma Kashef and Sakshi Meda – *Exploring the Impact of Mental Health and Food Security on Type 2 Diabetes Management in Jamaica and Barbados*

Areli Elisabet Toma Polanco – *Female-led Guatemalan Households are at High Risk for Food Insecurity and Childhood Stunting*

Ailyn Sanchez – *Food Insecurity and Childhood Stunting in Rural Guatemalan Households*

Ethan Done – *Food, Disease, and Psychology: A Novel Approach to Managing Crop Disease*

Mariel Bonilla – *Formulation and Mechanical Properties of Bio-based Materials from Canola Proteins*

Jaelyn Edwards – *Investigating the Impact of Socioeconomic Factors and Type 2 Diabetes in Barbados: A Mixed-Methods Study on Management and Prevention of Type 2 Diabetes*

Kapil Khandelwal – *Machine learning modelling of Supercritical Water Gasification for hydrogen production*

Kavitha Ramachandran – *Parents from Diverse Cultural Backgrounds in the Design and Pilot Testing of Family-engaged Intervention (FUN-15) to Promote Healthy Eating and Physical Activity in Preschool Children. A Qualitative Study that Supports Sustainable Development Goal(s), Social Inclusion and Equity*

Paula Mulazzani Candiago – *Structure and Way of Life of Riverside Communities in the Middle Juruá River Territory, Amazonas, Brazil: Research Protocol*

Deysi Julieta Venegas Garcia – *Utilization of Bioflocculants from Flaxseed Gum, Fenugreek Gum and Aloe Vera for Arsenic Removal from Water.*

Oyuntuya Shagdarsuren – *Women’s Role in Mitigating Oyu Tolgoi Mine’s Impact on Mongolian Herding Communities Through Agreement Oversight*

2:30 PM–3:00 PM BREAK

Garry Room, Marquis Hall

PAW 2024 Program

Day One: Thursday, October 17, 2024 (cont'd)

3:00 PM–4:30 PM CONCURRENT SESSIONS

Arts 211, Arts Building

Sustainable Rural Communities at the Nexus

Moderator

Dr. Robert Henry – Associate Professor, College of Arts and Science – University of Saskatchewan, Canada

Panelists

Dr. Rachel Engler-Stringer – Professor, Community Health and Epidemiology – University of Saskatchewan, Canada

Viktorija Schuler – Project Manager HR Services – Canadian Agricultural Human Resources Council, Canada

Dr. Heike Walk – Head of Department, Transformation Governance – Eberswalde University for Sustainable Development, Germany

Garry Room, Marquis Hall

Equity and Social Inclusion for Resilience in the Nexus

Moderator

Dr. Patti McDougall – Deputy Provost – University of Saskatchewan, Canada

Panelists

Drs. Alice Bouman-Dentener – Co-Founder Cansu Global, Netherlands

Elizabeth (Liz) Duret – Senior Consultant, Inclusion and Diversity and Anti-Racism, Human Resources – University of Saskatchewan, Canada

Dr. Patti McDougall – Deputy Provost – University of Saskatchewan, Canada

Dr. Maureen Reed – Professor, School of Environment and Sustainability – University of Saskatchewan, Canada

Dr. Corinne Schuster-Wallace – Executive Director, Global Institute for Water Security – University of Saskatchewan, Canada

4:30 PM–6:00 PM BREAK

6:00 PM–8:00 PM CONGRESS RECEPTION

Dreher Room, The Willows Golf and Country Club

Introductory remarks and land acknowledgement

Leslie-Ann Schlosser – Director, Research Profile and Impact, Office of the Vice President Research - University of Saskatchewan, Canada

Remarks

Dr. Matthias Barth – President – Eberswalde University for Sustainable Development, Germany

Dr. Peter Stoicheff – President – University of Saskatchewan, Canada

PAW 2024 Program

Day Two: Friday, October 18, 2024

Emcee: Janelle Hutchinson | Chief Sustainability Officer, University of Saskatchewan

8:00 AM–9:00 AM REGISTRATION AND LIGHT BREAKFAST

Garry Room, Marquis Hall

9:00 AM–9:45 AM KEYNOTE SPEAKER

Garry Room, Marquis Hall

Water and Social Justice: Two Sides of the Same Coin

Drs. Alice Bouman-Dentener – Co-Founder Cansu Global, Netherlands

Summary

With a rapidly expanding and developing global population, freshwater demands are soaring and water scarcity is on the rise, exacerbated by the impact of climate change on the hydrosphere. While having access to sufficient, safe and affordable water was recognized as a Human Right in 2010 through UN resolution A/RES/64/292, it remains an illusion for over two billion people on our planet (26 per cent of the human population).

In the 46 years between the UN Water Conference of 2023 and the first global water conference of Mar del Plata in 1977, the proportion of the global population with access to safely managed water has doubled to 70 per cent (5.6 billion people). However, this impressive figure conceals the persisting inequalities between rich and poor, urban and rural, regions, social groups and genders.

Not having access to sufficient and safe water condemns people to a situation of continuous morbidity and social exclusion, impedes their development and lowers their self-esteem. The 2030 Agenda for Sustainable Development aims to leave no one behind. But the conditions for the decentralized and inclusive water action that are needed to ensure marginalised people's health, dignity and empowerment are not in place.

Historically, water management is compartmentalised and focused on technical aspects, resulting in partial solutions for the most obvious water challenges. If we want to achieve water security for all, we have to leave the path of reductionism and address water for sustainable social and economic development in a holistic and systemic way, at the lowest appropriate level, and with the full and equal participation of all stakeholders, including the social groups that continue to be marginalised. Academia plays a central role by providing the comprehensive and unbiased data and knowledge base for informed decision-making at all levels.

The marginalisation of Indigenous Peoples extends to ignoring their traditional ecological knowledge, their deep understanding of water as the "lifeblood of Mother Earth" (Grand Chief Philip Steward) and their sound water stewardship practices. It is prudent to listen and learn, and to marry technological innovation with ancient wisdom; so that solutions to water challenges are appropriate for the local circumstances, leave no one behind and preserve the environment that we ultimately depend on for our survival.

9:45 AM–10:15 AM BREAK/MOVEMENT

Garry Room, Marquis Hall

PAW 2024 Program

Day Two: Friday, October 18, 2024 (cont'd)

10:15 AM–11:45 AM CONCURRENT SESSIONS

Garry Room, Marquis Hall

First Nation Data Sovereignty - A National and Regional Perspective

Moderator

Dr. Dawn Wallin – Associate Vice-President Research (Engagement) – University of Saskatchewan, Canada

Panelists

Erin Corston – Director and Executive Lead, National Data Champion Team, FNDGS – First Nation Information Governance Centre, Canada

Gonzague Gueranger – Implementation Lead, National Data Champion Team, FNDGS – First Nation Information Governance Centre, Canada

Murall Bird – Director of Information Governance / Regional Implementation Lead, FNDGS – Federation of Sovereign Indigenous Nations, Canada

Dinesh Khadka – Researcher Analyst and Regional Implementation Tam, FNDGS – Federation of Sovereign Indigenous Nations, Canada

Geology 255, Geology Building

Sustainable Crop Production at the Nexus

Moderator

Dr. Angela Bedard-Haughn – Dean and Professor, College of Agriculture and Bioresources – University of Saskatchewan, Canada

Panelists

Murad Al-Katib – President and Chief Executive Officer – AGT Foods and Ingredients, Inc., Canada

Dr. Margot Hurlbert – Professor and Canada Research Chair, Tier 1, Climate Change, Energy, and Sustainability Policy, Johnson Shoyama Graduate School of Public Policy – University of Regina, Canada

Dr. Mehmet Tulbek – President – Saskatchewan Food Industry Development Centre Inc., Canada

Arts 106, Arts Building

Water Security for Food Security – Research Gaps and Opportunities

Moderator

Dr. Corinne Schuster-Wallace – Executive Director, Global Institute for Water Security – University of Saskatchewan, Canada

Panelists

Dr. Melissa Arcand – Associate Professor, College of Agriculture and Bioresources – University of Saskatchewan, Canada

Dr. Warren Helgason – Associate Professor, College of Engineering – University of Saskatchewan, Canada

Dr. Curtis Pozniak – Professor and Director, Crop Development Centre – University of Saskatchewan, Canada

Dr. Nancy Tout – Chief Scientific Officer, Global Institute for Food Security – University of Saskatchewan, Canada

PAW 2024 Program

Day Two: Friday, October 18, 2024 (cont'd)

11:45 AM–12:45 PM LUNCH

Garry Room, Marquis Hall

12:45 PM–2:00 PM CONCURRENT SESSIONS

Garry Room, Marquis Hall

Water Security for Energy Security – Research Gaps and Opportunities

Moderator

Dr. Kerry Anne Mazurek – Associate Professor, Civil, Geological, and Environmental Engineering, College of Engineering - University of Saskatchewan, Canada

Panelists

Dr. Grant Ferguson – Centennial Enhancement Chair in Groundwater-Energy-Food Nexus, School of Environment and Sustainability and Joint Appointment with College of Engineering – University of Saskatchewan, Canada

Dr. Xiaodong Liang – Canada Research Chair in Technology Solutions for Energy Security in Remote, Northern, and Indigenous Communities and Professor, College of Engineering – University of Saskatchewan, Canada

Dr. Oscar Zapata – Assistant Professor, School of Environment and Sustainability – University of Saskatchewan, Canada

1:00 PM–2:30 PM CONCURRENT SESSIONS

Agriculture 2C61, Agriculture Building

Sustainable Livestock Production at the Nexus

Moderator

Dr. Terry Fonstad – Associate Vice-President Research (Ethics and Infrastructure) – University of Saskatchewan, Canada

Panelists

Dr. Scott Wright – Director, Livestock and Forage Centre of Excellence – University of Saskatchewan, Canada

Jenna Sarich – Technical Consultant and Analyst – Canadian Roundtable for Sustainable Beef, Canada

Dr. Christy Morrissey – Professor, College of Arts and Science – University of Saskatchewan, Canada

2:30 PM–2:45 PM BREAK

Garry Room, Marquis Hall

2:45 PM–3:00 PM CONGRESS CLOSING

Garry Room, Marquis Hall

Keynote Speakers

Learn more about the distinguished experts at PAW 2024



Dr. Daniela S. Jones

Dr. Daniela S. Jones is an assistant professor in the Biological and Agricultural Engineering Department at North Carolina State University (NC State), where she also serves as the data science academy director of agricultural analytics. She holds a joint faculty appointment with Idaho National Laboratory (INL) and is the director of the Agricultural Data Science Certificate program at NC State. Additionally, she is a graduate faculty in the Operations Research Program, and in the Center for Geospatial Analytics.

Jones specializes in developing large-scale, heterogeneous, geo-temporal data-intensive machine learning and optimization models to enhance the sustainability of intensifying agricultural systems. Her biofuels research focuses on the feasibility of harvesting, preprocessing, storing and delivering agricultural waste for energy conversion to mitigate environmental impacts. She also collaborates with industry partners to process agriculture data from various sources such as gene expression, management practices, ground-based sensors, drone imagery, weather stations and satellite sensors. This comprehensive data spans the entire agricultural lifecycle—from planting and growing to harvesting and packing—allowing her to identify factors that impact produce yield in both quantity and quality.

Jones earned her PhD in biological and agricultural engineering with a concentration in energy systems from

Texas A&M University, where she was an Alfred P. Sloan Scholar and received a certificate in business management. She also holds a Master's and Bachelor of Science degree in industrial engineering with a focus on operations research and a minor in mathematics from Mississippi State University. During her academic career, she interned at Idaho National Laboratory and collaborated with multidisciplinary teams at Oak Ridge National Laboratory on biofuels and renewable energy projects. Prior to her current role, Jones was a postdoctoral associate at Duke University, where she conducted quantitative and qualitative research on student interventions and supported programming for educational and career development workshops, as well as community development events for underrepresented students in the biosciences.



Keynote Speakers (cont'd)

Learn more about the distinguished experts at PAW 2024



Drs. Alice Bouman-Dentener

Drs. Alice Bouman-Dentener graduated as a biologist/ethologist from Utrecht University in the Netherlands. In the course of her international career, she has developed a focus on water governance, social inclusion and gender. She has had a prominent role in shaping the water and gender agenda during the Water for Life Decade 2005–2015 and continuing into the current Water for Sustainable Development Action Decade, where she serves as a Member of the International Advisory Committee of the Dushanbe Water Process.

Bouman-Dentener founded the Women for Water Partnership (WfWP) in 2004 and served as its president for 10 years, during which period WfWP developed into the leading women's civil society network in the water domain spanning close to 100 countries. WfWP member organisations have an impressive track record of empowering women and leading water for sustainable development action in their communities and countries. Other prominent roles in the water for sustainable development domain include vice-chair and chair ad interim of the Global Water Partnership Intergovernmental Organization (GWP), chair of the European Water Stewardship Members Council and member of the International Steering Committee of the Young Water Solutions Fellowship Programme. She is the vice-president of the Water Research and Training Centre International Foundation (WRTC).

Most recently, Bouman-Dentener co-founded Cansu Global uniting academia, private sector and governments as critical enablers for water inclusive, climate smart and gender sensitive development action.

Bouman-Dentener has been the women's representative in the Delegation of the Kingdom of The Netherlands to the United Nations General Assembly (UNGA, 1999), the World Summit for Sustainable Development (WSSD, 2002), and the Beijing + 15 Forum of the EU-Presidency (2010). She is a longstanding member of the Advisory Board of Gender Concerns International (GCI).

Bouman-Dentener was proclaimed action hero of the UN Water for Life Decade in 2015 and knight in the Order of Orange-Nassau in April 2016. She is the first laureate of the HRH Prince Mohammad bin King Faisal (I) El-Hashemite Award.

Stay up to date on the University of Saskatchewan's research, scholarly and artistic outputs and impact



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Plenary Panelists

Learn more about the distinguished experts at PAW 2024



Dr. Saurabh Biswas

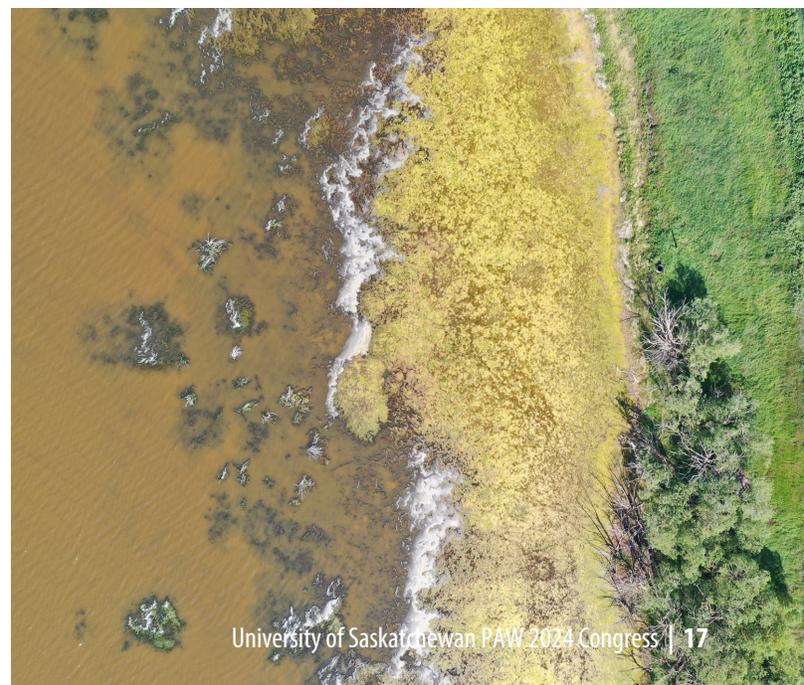
Dr. Saurabh Biswas is a transdisciplinary sustainability scientist studying the interplay or nexus of engineered systems, social injustices and poverty, participatory democracy and sustainable development. His research is motivated by the question of how energy systems and sustainability challenges mutually shape each other. With a focus on climate-vulnerable and historically marginalized communities, Biswas' research explore the nexus at varying levels of complexity – from individual to institutional actors, in traditional communities to cosmopolitan cities, and from simple technological fixes to sophisticated technology ecosystems.

He currently works with First Nations and Indigenous communities in Northern Canada on pathways to envision appropriate energy futures leading to just and sustainable outcomes. Other ongoing projects include co-editing a handbook on Arctic energy transitions and a collaboration with energy access practitioners to develop participatory decision processes that enhance the social acceptance of energy projects. Prior to USask, Biswas was a scientist at the Pacific Northwest National Laboratory in the USA. He has a PhD in sustainability science from Arizona State University and a masters in energy systems engineering. He is also the co-founder of 'Let Communities Lead', an open-access knowledge repository of civic leadership and innovations by communities for sustainable energy futures.



Genya Crossman

Genya Crossman is fascinated by the human side of quantum computing, pondering how users interact with this cutting-edge technology and the collaborations it sparks. In her role as a quantum strategist at IBM Quantum, she examines the convergence of technical advancements and ecosystem developments to understand the broader quantum computing landscape. Previously, she supported enterprises in employing quantum solutions to meet their business objectives and, as a hardware engineer, she played a pivotal role in designing and fabricating some of the earliest commercially available quantum computers. Crossman holds dual master's degrees in computational and applied mathematics from the Technical University of Berlin and Delft University of Technology, along with a Bachelor of Science in physics from the University of Massachusetts Amherst.



Plenary Panelists (cont'd)

Learn more about the distinguished experts at PAW 2024



Dr. Carsten Mann

Prof Dr. Carsten Mann is professor for Sustainable Forest Resource Economics and academic director of the Biosphere Reserve Institute (BRI) at the University for Sustainable Development in Eberswalde, Germany. He holds a PhD in forest and environmental policy and a habilitation in resource economics. His research specializes on ecosystem service governance, policy assessment and system innovation by combining concepts of social-ecology and ecological economics with those of sociology, policy and institutional analysis. Particularly, the transfer of scientific results in environmental policy and management practice is of central interest for his work.



Dr. Malabika Pramanik

Dr. Malabika Pramanik is a professor of mathematics at University of British Columbia. She received her bachelor's and master's degrees in statistics from the Indian Statistical Institute, and her PhD in Mathematics from the University of California at Berkeley in 2001. Before joining UBC in 2006, Pramanik held positions at University of Wisconsin, University of Rochester and California Institute of Technology.

She is currently the scientific director of Banff International Research Station (BIRS) and is on the board of directors of the Pacific Institute for the Mathematical Sciences (PIMS).

Pramanik's research interests cover areas of mathematical analysis such as Euclidean harmonic analysis, partial differential equations and several complex variables. She is the recipient of many awards and honours for her research, teaching and service. Among these awards are a UBC Killam Teaching Award and a UBC Killam Research Award, the Ruth E. Michler Memorial Prize, and the prestigious Canadian Mathematical Society Krieger-Nelson Prize for research excellence. She is an inaugural fellow of the Canadian Mathematical Society and a fellow of the American Mathematical Society. She was an invited speaker at the 2022 International Congress of Mathematicians.

Pramanik has been actively involved in initiatives that promote equity, diversity and inclusion in STEM fields, especially through her role as vice-president for the Pacific region of the CMS and as a co-organizer of programs such as the PIMS "Diversity in Mathematics" Summer School.



Thank you!

Special thanks to our University of Saskatchewan PAW 2024 organizers

The PAW committees are comprised of University of Saskatchewan volunteers from diverse backgrounds, disciplines and units to spur dialogue and mobilize multidisciplinary partnerships from different sectors, communities and countries.

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The International Blueprint for Action

A vision for a globally significant university

Connecting the World

Global problems cannot be solved by only thinking and acting locally. Moreover, the world is evolving, and so is the University of Saskatchewan. The University of Saskatchewan is well-positioned to contribute to the global needs of our society, and we will prepare our students, faculty and staff to appreciate, ask and then address society's most important challenges. Our academic excellence, partnered with international engagement and activity, will secure our global presence and enhance the university's impact in the world in which we live and share.

The University Plan 2025 highlights the importance of interdisciplinary and collaborative approaches to discovery, Indigenization, teaching and learning, and community engagement. The International Blueprint for Action amplifies the university plan by focusing and enhancing our efforts across these same themes through an internationalization strategy and goals distinctive of a truly world-class university.

The Sustainable Development Goals

Supporting implementation of the goals

The PAW Congress aims to provide a space for the exchange of innovative ideas, strategies and collaborative efforts focused on re-examining the solutions required to address the United Nation's **Decade of Action** and implementation of the **17 Sustainable Development Goals (SDGs)**. As we explore the interconnected dynamics of the food-water-energy nexus through the unifying lens of data during the 2024 congress, these guiding goals remain front of mind.

**SUSTAINABLE
DEVELOPMENT
GOALS**



PAW 2024

People Around the World International Congress

MAKING A WORLD OF DIFFERENCE



UNIVERSITY OF SASKATCHEWAN
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The University of Saskatchewan's main campus is located on Treaty 6 territory and the traditional homeland of the Métis. We pay our respect to the First Nations and Métis ancestors of this place and reaffirm our relationship with one another.

BE WHAT THE WORLD NEEDS