

Dairy at Guelph and the Ontario Agri-Food Innovation Alliance present

2019 Dairy Research and Innovation Day

December 5, 2019

Holiday Inn Conference Centre

Guelph, ON, Canada



2019 Dairy Research and Innovation Day

December 5, 2019, Holiday Inn Conference Centre, Guelph, ON

8:00 – 8:30 Registration & Continental Breakfast

8:30 – 8:40 Welcome

8:45 – 9:30 Keynote Lecture

Cheryl Smith - *Marketing Dairy to Ontario Consumers ... challenges, opportunities and success*

9:30 – 10:15 Session 1: Economics, Environment & Engineering

Getu Hailu - *Economic analysis of increasing feed efficiency and reducing methane emissions through genomics in Canada's dairy industry*

Claudia Wagner-Riddle - *Carbon footprint of milk production in intensive dairy production systems*

Christopher Collier - *Microfluidic devices for antibiotic detection in dairy products*

10:15 – 10:45 Coffee Break

10:45 – 11:35 Session 2: Dairy Foods, Human Health & KTT

Andrea Buchholz - *Recent advances of the Dairy Research Group and Guelph Family Health Study*

Steve Roche - *Turning Research Into Action in the Canadian Dairy Industry*

Arthur Hill - *Biomarkers for grass fed milk and other dairy projects*

11:45 – 12:45 Lunch

12:45 – 13:30 Session 3: Dairy Cattle

Dan Tulpan - *A machine learning approach for classifying beta-casein genotypes from milk MIR spectra*

John Cant - *Computer modelling in dairy nutrition research*

Derek Haley - *Animal care & welfare research from Dairy at Guelph*

13:30 – 14:00 Coffee Break

14:00 – 14:45 Session 4: Poster Flash Session

Flash presentations for selected student posters

14:45 – 15:00 Concluding Remarks

15:00 – 16:00 Poster Viewing and Informal Wine & Cheese Mixer

16:00 Event Concludes

8 :45



Cheryl Smith

Chief Executive Officer, Dairy Farmers of Ontario. Cheryl Smith has 30 years of experience as a business leader. She is a director for the Grocery Foundation, on the Grocery Business Senior Leadership Advisory Council and Canadian Grocer Star Women Advisory Committee. Cheryl recently retired from Parmalat, where she was general manager of the cheese division and a member of the executive team. She was also the chair of the Ontario Dairy Council and on the board of governors for Food and Consumer Products of Canada. Cheryl has BA and a MASc from the University of Waterloo and has completed a number of business management training courses.

9 :45



Getu Hailu

Getu Hailu is a Professor in the Department of Food, Agricultural and Resource Economics (FARE) at the University of Guelph. Getu's research focuses on agribusiness competitiveness, efficiency and productivity, innovation, price risk management and consumer demand for food. Getu joined the Department of Food, Agricultural and Resource Economics (FARE) at the University of Guelph in May 2005.

10 :00



Claudia Wagner-Riddle

Claudia grew up in Brazil and developed an interest in soil and climate after a frost destroyed many of the coffee plantations in her region. After completing her BSc, she took a research position in Germany looking at soil erosion, which inspired her to eventually pursue graduate research. Today, she is a world-renowned environmental science researcher focusing on the mitigation of greenhouse gases emitted by agricultural production systems.

10:15



Christopher Collier

Christopher leads the Collier Research Group (CRG), that operates within the School of Engineering at the University of Guelph, with experimental photonics work in the Applied Optics and Microsystems Laboratory (AOML). Their primary research focus is optics and photonics. The CRG has developed optofluidic and lab-on-a-chip technologies and is working on microfluidic devices for the dairy industry.

11:00



Andrea Buchholz

Andrea is a professor at the University of Guelph in Applied Human Nutrition. In line with her interest in body composition and energy metabolism, she is the Director of the University of Guelph Body Composition Lab, and a co-investigator of the Guelph Family Health Study. She is also co-lead of the Dairy Research Group, which is interested in purchase, consumption and health outcomes of dairy and plant-based dairy alternatives in families with young children.

11:15



Steven Roche

Steven is the Director and Principal Consultant for ACER Consulting, and has a vision for improving animal health through applied research and creative communication. ACER is driven by his passion and interdisciplinary skill set, which blends epidemiological research, agricultural extension, and health promotion. His mission is to develop and deliver evidence-based solutions to motivate on-farm change, and improve animal health and welfare.

11:30



Arthur Hill

Art completed a BSc in Agr (spec Dairy Science) and both MSc and PhD in Food Science at Guelph and joined the faculty at Guelph in 1986. Art was promoted to full professor in 2007, and was Chair Department of Food Science from 2009 to 2019. Art's research relates to dairy science and technology, especially cheese science, including cheese safety. Art led the development of the Guelph Food Innovation Centre, and was recently awarded substantial funding from the Canadian Dairy Commission to develop an online Masters Degree in Dairy Technology and Management, and a comprehensive Cheese Making Certificate Program.

13:00



Dan Tulpan

Dan Tulpan is an Assistant Professor in Animal Biosciences. His research interests range from computational biology and bioinformatics to mathematical modelling and computer vision. His expertise has application across a broad range of topics, but at the University of Guelph, Dan is applying his skills to livestock breeding and other areas of plant and animal science. He has held numerous research and academic positions across Canada and worked in the software industry internationally.

13:15



John Cant

John did his BSc at the Nova Scotia Agricultural College and MS and PhD at UC Davis in California. He joined the faculty of the Department of Animal Biosciences in 1996. He supervises a dynamic group of students who use a combination of in vivo, in vitro, and in silico techniques to study the physiological and biochemical regulation of milk synthesis in dairy cows, and the metabolic consequences of cows' milk consumption in animals.

13:30



Derek Haley

Derek believes that studying the behavioural biology of cattle sheds light on how they see and experience the world, and ultimately offers us insight into their feelings. What drives their behaviour? How do the ways that we interact with them, house them, and manage them, impact their well-being? In his lab, answering these questions are fundamental to ensuring that the animals we farm, in this case cattle, live a good life.

List of Posters

2019 Dairy Research and Innovation Day, Guelph, December 5th, 2019

1. *Caustic paste disbudding: Understanding pain control for young dairy calves.* Authors: C. Reedman, C. Winder, T. Duffield. **(Flash session)**
 2. *Investigating the dynamics of Johne's disease on Ontario dairy farms.* Authors: J. Imada, D. Kelton, S. Roche, C. Bauman.
 3. *Effect of co-consumption of enhanced protein concentration and modified casein:whey ratio milk with cereal on satiety and glycemc response.* Authors: B.H.M. Kung, A.J. Wright, H.D. Goff. **(Flash session)**
 4. *The Wonderful World of Silage.* Authors: J. Huffman, N. Ek, G. LaPointe.
 5. *A prudent approach to antibiotic treatment of high-risk calves at arrival to a dairy beef facility.* Authors: T. Von Konigslow, D. Renaud, T. Duffield, C. Winder, D. Kelton.
 6. *Hibernating bacteria: spore-formers in dairy production and processing.* Authors: A.M. Olajide, G. LaPointe.
 7. *Effects of liquid molasses supplementation through automated milking systems.* Authors: S. Moore, M. King, A. Cánovas, A. Carpenter, T. DeVries. **(Flash session)**
 8. *Switchgrass as a replacement for wheat straw in conventional and high starch lactating dairy cow rations.* Authors: B. Lemay, R. Nagle, Ja. DeBruyn, A. Heeg, M. Thimmangari, A. Carpenter.
 9. *Study on dairy and dairy alternative intake.* Authors: A. Laila, N. Topakas, J. Haines, D. Ma, G. Newton, A. Buchholz. **(Flash session)**
 10. *Cows for the future: Breeding for efficiency.* Authors: K. Houlihan, C.F. Baes, F. Miglior, D. Seymour, A. Butty, G. Ritchie, G.A. Oliveira Jr., T.C.S. Chud, V.R. Osborne, F.S. Schenkel. **(Flash session)**
 11. *The Economics of Robotic Milking Systems in Dairy: Productivity and Profitability.* Authors: F. Huang, G. Hailu. **(Flash session)**
 12. *Characterizing Bacterial Diversity in Undefined Dairy Starter Cultures.* Authors: M. Siddiqi, G. LaPointe.
 13. *Is MHC-DRB3 Polymorphism Contracting in the Canadian Holstein Population?* Authors: M. Emam, S. Tabatabaei, S. Cartwright, W. Szkotnicki, K. Judson, B.A. Mallard.
 14. *Milk to cheese; Ripening cultures.* Authors: Z. Barzideh, G. LaPointe.
 15. *Biomarkers of stress in dairy cattle.* Authors: T. Sullivan, A. Sharma, K. Lamers, J. Guo, Y. Mao, N.A. Karrow.
 16. *Do you like your cheese curds squeaky?* Authors: K. Mohan, A. Tellez-Lance, G. LaPointe, A. R. Hill.
 17. *Efficacy of dry-off antibiotics: a systematic review and network meta-analysis.* Authors: C. McMullen, C. Winder, J. Sargeant, D. Kelton, A. O'Connor.
 18. *Goat and cow butter coffee: A human study.* Authors: A. Tucker, N. Rafiee Tari, M. Latif, T. Morrison, A. Wright.
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19. *Studying the effect of processing conditions on structure-function properties of milk protein concentrate.* Authors: N. Rafiee Tari, A. Tucker, A. Wright.
 20. *How Competitive are Ontario Dairy Farms in the New Millennium?* Authors: R. Sarker, V. Tran.
 21. *Impact of heat stress on metabolic disorder of dairy animals.* Authors: M. Yixiong, C. Sheng, K. Sheng, K. Yang, D. Renaud, D. Kelton, T. Duffield, Q. Dong.
 22. *Differential expression of bovine mRNA isoforms with functional consequence on mastitis host defence.* Authors: V. Asselstine, J.F. Medrano, F. Miglior, A. Islas-Trejo, A. Cánovas.
 23. *Omics technologies to improve dairy cattle fertility.* Authors: H. Sweett, A. Suárez-Vega, P. A. de Souza Fonseca, S. Id Lahoucine, A. Livernois, F. Miglior, A. Cánovas.
 24. *Omics technologies to improve dairy cattle feed efficiency.* Authors: S. Lam, F. Miglior, L. Guan, S. Waters, F. Schenkel, P. Fonseca, A. Suarez-Vega, A. Cánovas.
 25. *Assessing dairy consumption and cardiometabolic biomarkers in preschool children from the Guelph Family Health Study.* Authors: J. Sheremeta, D. Ma, A. Duncan, G. Darlington, A. Buchholz, G. Newton.
 26. *Can we Identify Dairy Cattle that Withstand Climate Change?* Authors: S.L. Cartwright, M. McKechnie, A. Livernois, J. Schmied, B.A. Mallard. **(Flash session)**
 27. *Value-Added Colostrum Management: Building on HIR™/Immunity+ Genomics.* Authors: T. Altvater-Hughes, L. Wagter-Lesperance, B.A. Mallard.
 28. *Adding apple pomace as a functional ingredient in yogurt.* Authors: X. Wang, E. Kristo, G. LaPointe.
 29. *Does prevention of hypocalcemia with a negative dietary cation-anion difference improve health and performance?* Authors: R. Couto Serrenho, S. LeBlanc.
 30. *Enhancing natural fertility in dairy cows through health and precision technologies.* Authors: T. Carreira Bruinjé, S. LeBlanc.
 31. *Analyzing the benefits of novel phenotypes and technologies in dairy cattle breeding programs.* Authors: C. Lynch, F.S. Schenkel, K. Houlahan, G.A. Oliveira Jr., L. Alcantara, C.F. Baes.
 32. *Dairy cattle health and reproduction.* Authors: Dairy at Guelph.
 33. *Behaviour and welfare.* Authors: Dairy at Guelph.
 34. *Dairy health management continuing education program.* Authors: Dairy at Guelph.
 35. *The Centre for Genetic Improvement of Livestock.* Authors: Dairy at Guelph.
 36. *Department of Food Science.* Authors: Dairy at Guelph.
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