education organization research

WPSA, CANADA BRANCH

Victoria Sikur, WPSA - Canada Branch Newsletter Editor

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President's Report

Bruce Rathgeber, WPSA - Canada Branch

World's Poultry Congress

The countdown to the World's Poultry Congress in Toronto is under 100 days now (https://www.wpc2026toronto.com/). The hotel blocks are filling up fast so keep that in mind. Hopefully you have registered already but if you haven't, the reduced rate is in effect until June 21. After that, it goes up $75. Check out the program on our website.

There are approximately 800 presentations scheduled for the Congress. The opening session planned for afternoon of July 13th will feature keynote speakers that are leaders in poultry science research (https://www.wpc2026toronto.com/about-1). This is followed by the Opening Ceremony in the evening. There will be words of welcome, entertainment and Awards for WPSA members. Wednesday night's Gala event will be held in the Royal Ontario Museum (ROM) with great food and entertainment among the museum exhibits.

Please continue to help get the word around by informing your colleagues and friends of this event. Contact me at brathgeber@dal.ca

A request for student travel support went out early this year. Thank you to those who agreed to sponsor our Canadian university students. We indicated that we would provide student support in increments of $2,500. The following sponsors committed to supporting the students:

- Burnbrae Farms - $5000
- Chicken Farmers of Nova Scotia - $2,500
- Chicken Farmers of Saskatchewan - $1,250
- Alberta Turkey Producers - $1,250
- Egg Farmers of Nova Scotia - $1,250

We will continue with having our annual meeting in an online format this year.

Members will receive a link for the meeting scheduled for **June 16th** at 3:00 Eastern time.

Thank you once again for those that send in information to keep us informed with our newsletter. Keep in mind the Global branch's newsletter is looking for input from branches from around the world. Please let **Dr. Deborah Adewole** know if you have something you would like to submit as a contribution to this. Additionally, please continue to contact your regional representatives to provide information for our Canadian newsletter. They can be contacted through links on the PSA website in the WPSA page. If you haven't already, you can renew your membership with the Canadian Branch at https://poultryscience.org/About-WPSA-Canada

Sincerely, Bruce Rathgeber

Atlantic

Xujie Li, Dalhousie University

Greetings from Nova Scotia! Wishing you all a beautiful spring, with lengthening days and a fresh breeze in the air.

Precision Livestock Farming and AI Innovation: Dr. Suresh Neethirajan



Dr. Suresh Neethirajan is an Associate Professor and University Research Chair at Dalhousie University, where he leads the MooAnalytica Research Group. His research focuses on decoding how chickens communicate by transforming sound, behaviour, and environmental signals into actionable intelligence for modern poultry farming.

Dr. Neethirajan is featured in the CBC national documentary - The Nature of Things: **Cluck! Chickens Exposed (**https://www.youtube.com/watch?v=3ULTIFTUb7I**),** which was released across Canada in January 2026. The documentary explores the complexity of chicken behavior, cognition, and communication, highlighting the growing recognition of animal intelligence and welfare in modern agriculture.

The research from the MooAnalytica Group advances a shift from subjective observation to continuous, data-driven understanding of animal health, welfare, and productivity. The team integrates bioacoustics, computer vision, and digital twin technologies to interpret vocalizations and behaviour in real time, enabling early detection of stress, disease, and welfare issues at both individual bird and flock levels. A defining feature of this program is its strong emphasis on translation into practice. The group has developed mobile applications such as *CluckTalk* and *Cluckify*, which bring poultry vocalization analytics directly to researchers, students, and industry users.

CluckTalk

Cluckify

Research Team

The MooAnalytica Research Group includes a multidisciplinary team contributing to digital livestock innovation. **Yashan Dhaliwal**, BSc Honours student in Bioveterinary Science and Research Assistant, investigates early life development in laying hens using thermal imaging, acoustics, and video-based movement analysis to establish baseline indicators of welfare. **Naeem Ahammed Ibrahim Fahim**, PhD student in Animal Science and Aquaculture, is developing an integrated AI driven digital twin platform that combines environmental, disease, and welfare signals to support earlier and more precise interventions. **Daniel Essien Edison**, PhD student in Computer Science, focuses on bioacoustic and visual AI systems for real time poultry monitoring under commercial conditions. **Prajesh Padmanabhan**, PhD student in Animal Science and Aquaculture, develops AI models integrating satellite and farm level data to estimate emissions across poultry systems. **Olabisi Haruna**, PhD student in Animal Science and Aquaculture, works on multimodal AI systems combining video, sound, and sensor data to detect early signs of health and welfare issues.



Through his leadership and research, Dr. Suresh Neethirajan continues to advance precision livestock farming and contribute to more sustainable, welfare-oriented, and technologically advanced agricultural systems.

New Postdoctoral And Visiting Researchers



Dr. **Jing Lu** joined Dr. Natalie Diether's lab at Dalhousie University in January 2026 as a Postdoctoral Fellow. Her research focuses on microbiome-informed animal nutrition, leveraging multi-omics to develop antibiotic-free strategies using novel feed ingredients and bioactives. Dr. Lu's current project explores mechanistic microbial pathways and metabolites to guide targeted nutrition for improving gut health and controlling necrotic enteritis in broilers. Recognized through awards and invited talks, Dr. Lu translates complex research into practical, industry-relevant solutions and communicates science to diverse audiences.



The Dr. Stephanie Collins lab recently hosted visiting research student **Julius Pablico** from Mariano Marcos State University, Philippines, who completed his visit in December 2025. Julius investigated the effects of early post-hatch feeding of brown seaweed (*Laminaria spp.*) on growth, gut health, blood biochemical profiles, and meat quality of broiler chickens, contributing to strategies that enhance poultry health, welfare, and sustainable production practices.

Highly Qualified Personnel Opportunities

Graduate Student Opportunity – Dr. Natalie Diether's Lab
Dr. Natalie Diether's lab is currently recruiting **one MSc student** for a project focused on **targeting protein metabolites as antibiotic alternatives in poultry** and investigating *how dietary protein sources influence susceptibility to necrotic enteritis*. The project is anticipated to start in **Fall 2026**. Interested applicants should email Dr. Natalie Diether at natalie.diether@dal.ca with the subject line: 'GSO Protein Metabolites'.

Postdoctoral Fellow – Dr. Suresh Neethirajan's Lab
The MooAnalytica Research Group at Dalhousie University invites applications for **one postdoctoral fellow** to work on **AI and digital twin technologies for next-generation livestock systems**. Projects include *AI-enabled digital twins for dairy and poultry, analysis of large-scale video and sensor data for animal behaviour and welfare, and development of intelligent precision livestock systems*. The preferred start date is **May 2026**. Full details are available here: https://www.researchgate.net/job/1035906_Postdoctoral_Fellow-Artificial_Intelligence_and_Digital_Livestock_Systems

General News

Dr. Bruce Rathgeber, on behalf of the World Poultry Congress 2026 Organizing committee, recently spoke in an interview with Engormix, inviting poultry scientists, researchers and industry professionals to attend the WPC 2026 in Toronto, Canada. The Congress will bring together global experts to share the latest advances in poultry science, technology and management, offering a unique platform for networking, collaboration, and discussion to advance sustainable and innovative poultry practices.

Dr. Rathgeber encourages all participants to engage with the scientific program, workshops, and forums to help shape the future of poultry production.
https://en.engormix.com/poultry-industry/poultry-industry/bruce-rathgeber-invites-you_v72830/

New Peer-Reviewed Publications

Dhaliwal, Y., Essien, D. and Neethirajan, S. 2026. Multimodal Digital Sensing of Early-Life Laying Hens: A Pilot Study Integrating Thermal, Acoustic, Optical-Flow and Environmental Data. Front. Vet. Sci. 13:1796102. https://doi.org/10.3389/fvets.2026.1796102.

Gill, J. and Meagher, R. K. 2026. Influence of laying hen (*Gallus gallus domesticus*) social behaviour on the performance of natural behaviours and the utilization of enrichments in alternative housing systems. Appl. Anim. Behav. Sci. 300:106990. https://doi.org/10.1016/j.applanim.2026.106990.

Gill, J., MacKintosh, V., McCuaig, B., MacIsaac, J., Li, X., Di Stefano-Pitre, S., Wang, J. and Collins, S. 2026. Egg Quality and Hen Health Benefit from Dietary Inclusion of Hempseed Presscake or Oil in the Diets of Lohmann LSL-Lite White Laying Hens Housed in an Enriched Single-Tier Housing System. J. Appl. Poult. Res. 35:100685. https://doi.org/10.1016/j.japr.2026.100685.

Li, X., Lu, J., Rathgeber, B., Rogiewicz, A. and Collins, S. 2026. Does in-transit feeding

of day-old chicks enhance potato peel meal utilization? Impact on transport stress, gastrointestinal organ weight and performance in broilers. Poult. Sci. 105:106809. https://doi.org/10.1016/j.psj.2026.106809.

Neethirajan, S.R. 2026. Digital Twins in Poultry Farming: Deconstructing the Evidence Gap Between Promise and Performance. Appl. Sci. 16:1317. https://doi.org/10.3390/app16031317.

Neethirajan, S. 2026. Digital Twins for Cows and Chickens: From Hype Cycles to Hard Evidence in Precision Livestock Farming. Agriculture 16:166. https://doi.org/10.3390/agriculture16020166 .

Prajesh, P.J., Ragunath, K., Gordon, M., Rathgeber, B. and Neethirajan, S. 2026. Ai-driven carbon Monitoring: Transformer-Based reconstruction of atmospheric CO2 in Canadian poultry regions. **Int. J. Appl. Earth Obs. Geoinf.** 149:105248. https://doi.org/10.1016/j.jag.2026.105248.

Ontario

Stephanie Torrey, Trouw Nutrition Canada

Updates from the Harlander lab

Dr. Alexandra Harlander has been named by the Egg Farmers of Canada and the University of Guelph OAC as the Egg Farmers of Canada Research Chair in Poultry Welfare - see here: https://www.linkedin.com/posts/egg-farmers-of-canada_egg-farmers-of-canada-and-the-university-activity-7432802938223333377-c_eC/

PhD candidate **Lea Nicklas** was awarded one of two 2025 Aviagen postgraduate scholarships this January - see here: https://cp-rc.ca/en/news/aviagen-awards-postgraduate-scholarships-for-2025

Updates from the Bédécarrats lab:

From the turkey side of the lab, PhD candidate **Clara Ziezold** published her article, *Evaluating light spectrum and intensity for female turkey breeder reproductive performance*, in *Poultry Science*. This project explored how lighting conditions influence reproductive outcomes in turkey breeder hens, including egg production and quality, contributing to ongoing efforts to optimize management practices in commercial systems. The results were also presented at the 2025 Poultry Service Industry Workshop in Banff, AB, where Clara's anatomical knowledge proved useful at the dinner table when she competed in the turkey carving competition.



Figure 1 | PhD candidate Clara Ziezold using her dissection skills to carve a turkey at the 2025 PSIW in Banff, AB (source: Violet Hipkin).

Evaluating light spectrum and intensity for female turkey breeder reproductive performance https://doi.org/10.1016/j.psj.2026.106577



Figure 2 | PhD candidates Violet Hipkin (left) and Clara Ziezold (right) at the 2025 PSIW in Banff, AB (source: Violet Hipkin).

In collaboration with Dr. Charlene Hanlon from Auburn University, our postdoctoral fellow **Dr. Ana Rentsch** recently published a *Poultry Science* research note examining the short-term welfare and behavioral impacts of a quantitative feed restriction in Lohmann LSL-Lite pullets. Using behavioral observations, we assessed frustration-related behaviors including abnormal pecking and aggression, as well as modes of vertical locomotion to understand whether moderate feed restriction alters pullet welfare or energy expenditure. Overall, our findings support the careful, research-focused use of moderate feed restriction in layer pullets while highlighting the need for continued monitoring of behavior and longer-term welfare indicators. - *Research note: Transient behavioral effects of feed restriction in a white feathered laying hen pullet strain - Assessment of frustration and locomotor energy expenditure*, https://doi.org/10.1016/j.psj.2026.106690.

As a follow-up to our previous update on the installation of our new iNSiGHT DXA system, we are pleased to report that our longitudinal DXA trial has been successfully completed. This project monitored repeated changes in body composition (adipose tissue, lean mass, and bone mineralization) in Lohmann Brown-Lite and Lohmann LSL-Lite pullets raised under *ad libitum* or 20% restricted growth programs. The trial was led by PhD student **Josephine Sharka**, whose dedication and meticulous work made this complex project possible. Josephine hopes to present the first analyses at the Poultry Science Association Annual Meeting in Toronto this summer, highlighting how strain and feeding program shaped dynamic patterns of adiposity, lean growth, and bone development, as well as how these trajectories relate to timing of sexual maturation. We look forward to sharing more as the modelling and interpretation continue to develop.

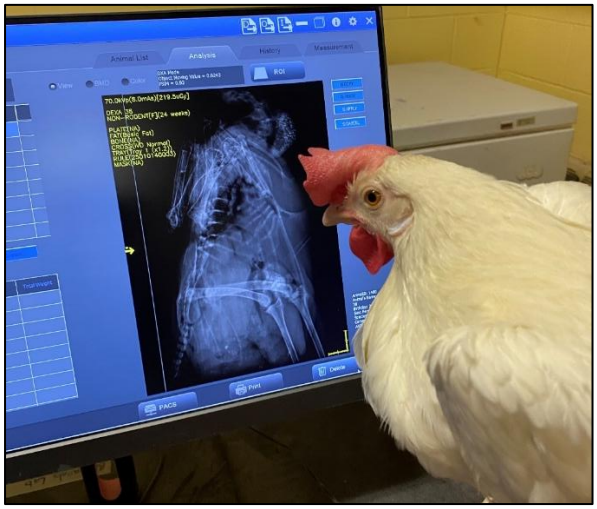


Figure 3 | LSL- Lite pullet inspecting her DXA image. This photo was taken during Josephine Sharka's trial (source: Clara Ziezold)

We are also happy to share that we have completed data collection on a second flock of commercial layer pullets at Elmwood Farms Inc., allowing us the exciting opportunity to validate our experimental findings under commercial conditions. This collaboration has been invaluable, and we

extend our sincere thanks to Elmwood Farms and particularly Josiah Mullet-Koop for their partnership and continued support. The project, led by MSc student **Santosh Pokhrel**, is generating important insight into how natural variation in body weight and reproductive development unfolds in a commercial aviary system. Santosh will be presenting the preliminary findings at the World's Poultry Congress in Toronto this summer, marking the first public presentation of this commercial-scale dataset.

Bone health and skeletal integrity matters. Eggshell formation in laying hens demands large amounts of calcium; although the diet supplies most of it, hens also mobilize bone to sustain production. With this, osteoporosis has become common in modern layer strains after decades of selection for high egg output, longer laying cycles, and earlier sexual maturity. To address this issue, **Alexander Chattoe (MSc student)** is currently studying the impact of synchronizing/desynchronizing growth trajectories and photostimulation on bone characteristics during maturation. To that end, commercial layers were raised under a split-plot design; photostimulation timing being the main plot and feeding regimen (ad libitum vs. 10% growth restriction) being sub plot. This provides 4 treatment groups with staggered onsets of lay. Early photostimulation and ad libitum feeding will provide the earliest onset of lay while delayed photostimulation and restricted feeding will produce the latest onset of lay. Using a high-resolution micro-CT to scan the femur bone in both brown- and white-feathered birds, he will analyse 8 different timepoints to quantify cortical, trabecular, and medullary bone, and determine mineral density and bone microarchitecture. Further, blood biomarkers will be collected to assess reproductive activity (estradiol) and bone formation (parathyroid hormone) patterns in these maturing pullets. In this study, staggered onsets of lay will provide unique bone development profiles, allowing for management recommendations to maximize bone structural integrity while reducing bone health related issues, thus improving animal welfare.



Figure 4: Alexander Chattoe with his young pullets during placement

On the behaviour side, MSc student **Meg Rogers**, has been investigating the impact of puberty on fear response in laying hen pullets. Changes in fear behaviour during puberty are not well-documented in laying hens. Around the onset of lay, laying hens are subjected to many management changes that are known to be potentially stressful, such as transport from a rearing to a laying system and vaccination. To determine whether there are changes in the development of fear, fearfulness, and threat-processing in laying pullets during puberty, Lohmann Brown pullets will be subjected to a combined emergence-novel object-novel arena test at four developmental time points - pre-puberty, early puberty, late puberty, and post-puberty. Additionally, blood will be extracted for later analysis of testosterone and estradiol to

determine if these hormones play a role in the development or changes in fear behaviour.

Updates from the Kiarie lab

Paul Walialua, PhD, defended his PhD: Effects of rearing space allowance and functional feed ingredients on pullet growth and cecal digesta microbiota.

Dr. Elijah Kiarie is the overall Program Chair of the upcoming 2026 Poultry Association meeting to be held at the Metro Toronto Convention Centre on July 10-13, 2026. He will also co-chair a PSA 2026 symposium entitled *Nutrition and management strategies for extended laying cycle* that will feature expert speakers who will discuss recent advances in genetics, nutrition, physiology, health, and management in the context of a "long life" layer capable of producing 500 eggs over a 100-week laying cycle.

Dr. Elijah Kiarie and **PhD Student Lonita Manoa** were featured in the *Canadian Poultry Magazine*, November issue, in an interview by Jane Robinson titled *Layer Longevity: The road to 100 weeks*.

Featured Peer-Reviewed Journals

Shamriz et al 2026. Protein nanoparticle-based vaccine candidate produced in *Nicotiana benthamiana* against Non-typhoidal *Salmonella enterica* in poultry. Front. Plant Sci. Sec. Plant Biotechnology. https://doi.org/10.3389/fpls.2026.1761000

Njeri et al. 2026. Significance of specialty protein ingredients in feeding programs for broiler chickens on nitrogen utilization and excretion: A meta-analysis. Poult. Sci. https://doi.org/10.1016/j.psj.2025.106262

Njeri et al. 2026. Cold-pressed sunflower and gastric pH synergistically improve in vitro nitrogen solubility compared with solvent-extracted soybean meal and high-protein, electrostatically separated sunflower meal. Journal of Agricultural and Food Chemistry. https://doi.org/10.1021/acs.jafc.5c12346

Mak et al. 2025. Growth performance and body composition of Eimeria-infected broiler fed berry pomaces and a *Limosilactobacillus reuteri* isolate. Poult. Si. https://doi.org/10.1016/j.psj.2025.105812

Waliaula et al., 2025. Cecal bacterial communities and lung immunity in layers fed omega-3 fatty acids or yeast bioactives under different space allowance. Poult. Sci. https://doi.org/10.1016/j.psj.2025.105866

Other updates

Drs Stephanie Torrey (Trouw Nutrition), **Tina Widowski** (U of Guelph) and **Alexandra Harlander** (U of Guelph) are working with **Drs Karen Schwean-Lardner** (U Sask) and **Martine Boulianne** (U Montreal) on the scientific committee for the revised Code of Practice for Chickens, Turkeys and Breeders. **Dr. Krysta Morrissey** is the science writer.

Stephanie Torrey is on the scientific committee for the upcoming WPSA World's Poultry Congress this summer. **Dr. Midian (Nascimento dos Santos) McCulligh** (Trouw Nutrition) will join the Young Scientist Program at WPC this summer.

Saskatchewan

Tory Shynkaruk, University of Saskatchewan

Dr. Deborah Adewole's Team



Italo Santos Reis Pereira successfully defended his MSc thesis on January 27, 2026. His project looked at *The effects of microencapsulated vitamin and trace mineral premixes and red osier dogwood extract on growth performance, immune response, and gut health of broiler chickens in a coccidiosis vaccine challenge model*. He is now working as a Poultry Sales Specialist at New Life Mills.

Accomplishments



We are proud to celebrate MSc. Student, **Jovita Sanubi** on receiving the prestigious *Dollie Hantelman Agricultural Scholarship Award* on November 20, 2025.

Publications

Ogory, R.O., G. Cumberford, K. Schwean-Lardner, R.W. Newkirk, and D. Adewole. 2025. Nutritional supplementation of ahiflower seed and press cake in laying hens' diets and its effect on production performance, nutrient digestibility, egg quality, and yolk omega-3 fatty acid enrichment during mid-to post-peak production phase. Poultry Science, 104:105815. https://doi.org/10.1016/j.psj.2025.105815

Factsheets

Industry factsheets from https://adewolelab.ca/extension translate poultry nutrition science into simple, practical, evidence-based feeding strategies for producers.

- Poultry Nutrition and Gut Health, February, 2026 https://0901.nccdn.net/4_2/000/000/086/598/adewolelab_factsheet_vol-1b_gut-health.pdf
- Poultry Nutrition and Functional Lipids 1 - Ahiflower for Omega-3 Enrichment During Mid-Production, February, 2026https://0901.nccdn.net/4_2/000/000/038/2d3/adewolelab-ahiflower-seed--mid-production.pdf
- Poultry Nutrition and Functional Lipids 2 - Ahiflower for Sustained Omega-3 Enrichment in Late-Cycle Hens, February, 2026 https://0901.nccdn.net/4_2/000/000/071/260/adewolelab-ahiflower-seed--late-cycle.pdf
- Supporting Broiler Performance During Cold Stress with Microencapsulated Biofactors and Antioxidants, March 2026

https://0901.nccdn.net/4_2/000/000/017/e75/adewolelab---cold-stress---factsheet--march-2026.pdf

Dr. Susantha Gomis's Poultry Lab

Conferences

The Gomis Poultry Lab attended the 75th Western Poultry Disease Conference in San Diego, CA where our lab members presented:

- Palkumbura, Ashani. Immuno-protective Effects Against *E. coli* Septicemia in Broiler Chickens at 27 Days of Age Induced by *In Ovo* Delivery of CpG-ODN Followed by Intrapulmonary Delivery of CpG-ODN at Hatch.
- Popowich, Shelly. Rapid Growth Induced Wooden Breast in Broiler Chickens in Saskatchewan, Canada.
- Ranaraja, Asha. Identification of Early Serum Biomarkers for Avian Reovirus Infection in Broiler Chickens.
- Rathnayake, Mihiprabha. Spray Application of Probiotics on Incubating Eggs Prevent Avian Pathogenic *Escherichia coli* Invasion in Broiler Chickens.
- Subhasinghe, Iresha. Induction of Trained Immunity by Oligodeoxynucleotides containing CpG Motifs by *In Ovo* Route and Intrapulmonary Delivery of Live *Clostridium perfringens* at Hatch to Protect Them against *Escherichia coli* Septicemia and Necrotic Enteritis During Grow-out Period.



Ashani Palkumbura, PhD student, won 1st place in the Basic Research category of the student competition. She competed against students from Auburn University, UC Davis, UC Riverside, Mississippi State University, Michigan State University and the University of Georgia.



Experiences abroad



Dr. Susantha Gomis visited the King Faizal University, where he got to practice his falconry skills! He met with Professor Al-Jazzar, department head, College of Veterinary Medicine, King Faizal University, Saudi Arabia.

Industry participation



Open Farm Days: Ashani Palkumbura, Gimhani Amarasena, and Shelly Popowich put on their farmer hats at the Open Farm Days with Chicken Farmers of Saskatchewan, to show the public what broiler farming is all about.



Agribition: Yasodha Basnayake, Shelly Popowich and Iresha Subhasinghe helped Chicken Farmers of Saskatchewan at Agribition in November 2025. Students and members of the public learned about broiler farming in Saskatchewan.

New Colleagues

Alice Shin: Alice is finishing her first year of veterinary school at the WCVM. She has a keen interest in poultry medicine. She will be joining our lab in May as a summer student, studying infectious bursal disease virus.

Brooke Fowler: Brooke is currently a Master of Public Health (MPH) student at the University of Saskatchewan. She holds a Bachelor of Science in Animal Bioscience from the University of Saskatchewan. The MPH program focuses on One-Health or other words balancing the health of people, animals and the environment. Brooke will be doing her MPH practicum this summer in our lab, focusing on infectious bursal disease virus – an immunosuppressive disease – which predisposes broilers to secondary bacterial and viral infections such as *Escherichia coli*, *Salmonella,* or *Campylobacter* all of which are food safety risks.

Community:
Last summer, our lab hosted four high school students under the Verna J. Kirkness

Education Foundation (VJKF). The program was developed to inspire and empower indigenous youth, with hands-on experiences in the sciences, technology, engineering and mathematics fields. The students experienced their first poultry necropsy, tissue processing, and had a fun race donning and doffing PPE and learning about biosecurity! Our lab will be hosting a new group of students under the VJKF program in July 2026.



Publications

Trained immunity:
Dr. Iresha Subhasinghe, post-doctoral fellow in the Gomis Poultry Lab, was the first to report trained immunity in poultry. Trained immunity is innate immune memory. We were able to stimulate the immune system in young broilers by administering CpG-ODN (immune stimulant) at days 0-4, which then protected them against *Escherichia coli* septicemia and necrotic enteritis at the end of the grow-out period.

Subhasinghe I, Ahmed KA, Ayalew LE, Gautam H, Popowich S, Matsuyama-Kato A, Chow-Lockerbie B, Tikoo SK, Griebel P and S Gomis. 2024. **Induction of trained immunity in broiler chickens following delivery of oligodeoxynucleotides containing CpG motifs to protect against *Escherichia coli* septicemia**. *Sci Rep.* 14:18882. Subhasinghe I, Gautam H, Popowich S, Ayalew LE, Tikoo SK and S Gomis. 2025.

Induction of trained immunity in broiler chickens by combination of *in ovo* delivery of oligodeoxynucleotides containing CpG motifs and intrapulmonary delivery of a live *Clostridium perfringens* vaccine at hatch to protect them against *Escherichia coli* septicemia later in the grow out period. *Avian Dis*. 69(2):183-199. doi:10.1637/aviandiseases-D-24-00093

Gut-lung axis:
We developed a novel vaccine delivery system, intrapulmonary, for poultry. The concept of "gut-lung axis" or GLA allows for crosstalk between the guts and lungs. To test this concept, we delivered live *Clostridium perfringens* by the intrapulmonary route (to the lungs) even though it is a gut pathogen. Interestingly, there was protection against necrotic enteritis at day 20 of age.

Gautam H, Ahmed KA, Subhasinghe I, Popowich S, Matsuyama-Kato A, Chow-Lockerbie B, Ayalew LE, Tikoo SK, Griebel P and S Gomis. 2024**. Protection of broiler chickens against necrotic enteritis by intrapulmonary delivery of live *Clostridium perfringens* vaccine exploiting the gut-lung-axis concep**t. *Avian Diseases*. 68(3):240-253.

Necrotic enteritis:
We found that oral delivery of live *Clostridium perfringens* vaccine adjuvanted to cholera toxin at hatch was able to protect broilers against necrotic enteritis later in life. We also found butyric acid and histamine in

feces and serum was an early indicator of necrotic enteritis.

Gautam H, Ayalew LE, Subhasinghe I, Popowich S, Matsuyama-Kato A, Chow-Lockerbie B, Tikoo SK and S Gomis. 2025. **Immunoprotection of broiler chickens against necrotic enteritis by oral delivery of live *Clostridium perfringens* vaccine adjuvanted with cholera toxin at hatch.** *Avian Dis*. 69:91-101.

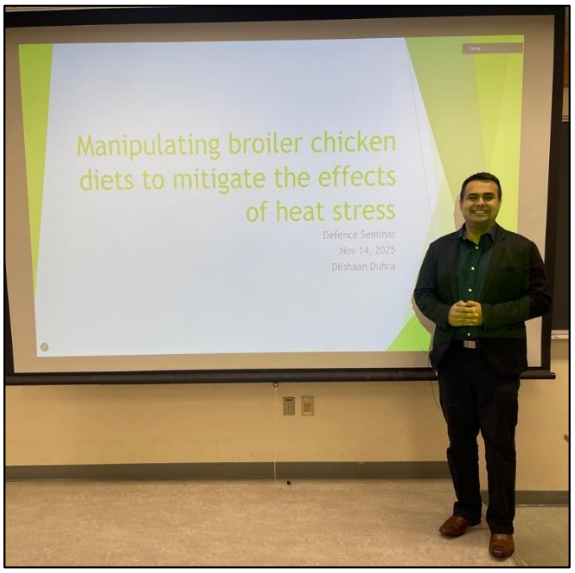
Gautam H, Shaik NA, Banaganapalli B, Popowich S, Chow-Lockerbie B, Ayalew L E, Mandal R, Wishart DS, Tikoo SK and S Gomis. 2025. **Elevated butyric acid and histamine in feces and serum as an indicator of onset of necrotic enteritis in broiler chickens**. *Frontiers in Microbiol*. doi.10.3389/fmicb.2025.1581309.

Metabolomics:
Metabolomics looks for biomarkers which can indicate early metabolic changes caused by disease, before clinical signs appear. We found adenine was able to detect *Escherichia coli* septicemia prior to clinical signs. This information can help in the development of rapid field tests in the future.

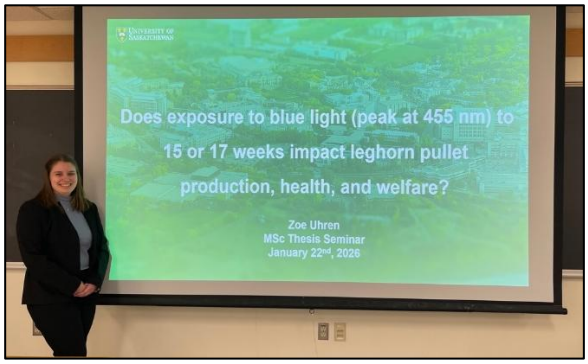
Ranaraja A, Subhasinghe I, Shaik NA, Banaganapalli B, Popowich S, Parambath SV, Ayalew LE, Mandal R, Wishart DS, Tikoo SK and S Gomis. 2025. **Temporal metabolomic fingerprinting identifies adenine as a novel biomarker for early detection of *Escherichia coli* infection in broiler chickens**. *Sci Rep.* 15(1):31580. doi: 10.1038/s41598-025-16873-x

Dr. Karen Schwean-Lardner's Poultry Management & Welfare Lab

Dr. Dilshaan Duhra successfully defended his Ph.D. dissertation titled: *"Developing Diet Recommendations Regarding Starch-to-Lipid Ratio, Amino Acid, and Energy Content for Broilers Reared Under a Period of Cyclic Heat Stress."*



Zoe Uhren defended her thesis titled *"Does exposure to blue light (peak at 455nm) to 15 or 17 weeks impact leghorn pullet production, health, and welfare?"* Zoe is working as a Research Assistant at the University of Saskatchewan in Dr. Schwen-Lardner's Lab.



Deliah McGregor successfully defended her thesis titled *" The effects of blue or white LED lighting, compared to darkness, during simulated transport on the welfare and productivity of broilers"*. Deliah is working as a Research Assistant at the AAFC Swift Current Research and Development Centre.



Industry participation

Agribition: **Domenica Medina** and **Tory Shynkaruk** volunteered at the Turkey Farmers of Saskatchewan booth at Agribition in November 2025. A record number of students were welcomed at the Family Ag Pavilion where they had an up-close look at how turkeys are raised in Saskatchewan and Canada.



Accomplishments

Dr. Karen Schwean-Lardner was inducted into the Saskatchewan Poultry Hall of Fame at the Saskatchewan Poultry Industry Conference in March.



Publications

Hatchery wellbeing

Dr. Sameeha Jhetam finished publishing the data from her PhD, which focused on strategies to improve chick wellbeing from the hatchery to farm. She concluded that the Hatchling Support System with the redesigned foot design resulted in improved welfare, and data suggest that adjustments be made for differences in chick head size (strain). This study was the first to identify a non-invasive method for measuring stress and inflammatory biomarkers in chick down feathers. She also found that early feed access had a positive effect on leghorn chick health, gut development, and growth. One post-hatch

spray application of a *Lactobacillus reuteri* probiotic could improve chick well-being over long transport durations.

Jhetam, S., T. Shynkaruk, C.A.B. Adler, K. Buchynski, K. Gesy, S. Gomis, T.G. Crowe, A.G. Van Kessel, S. Dridi, and K. Schwean-Lardner. Different chick processing holding devices reveal welfare and stress effects via novel down-feather biomarkers. Poultry Science. https://doi.org/10.1016/j.psj.2026.106595

Jhetam, S., T. Shynkaruk, T. Hamaoka, T.G. Crowe, A. Jeffery, M.B. Rogers, A.G. Van Kessel, and K. Schwean-Lardner. 2025. Feeding leghorn chicks during simulated transport as an early feeding strategy and the benefits of a single spray probiotic application. Poultry Science. https://doi.org/10.1016/j.psj.2025.106024

Nutritional mitigation of heat stress

Dr. Shaan Duhra found that requirements for maximal *Pectoralis* major yields were approximately 0.808 and 0.726 g/d dig Met+Cys intake for males and females, respectively. Whereas to optimize feed efficiency, a daily intake of dig Met+Cys of 1.116 g (males) and 1.031 g (females) for Ross 708 broilers under cyclical heat stress conditions of 31 °C and 21 °C from d 27 to 33 is required.

Duhra, D., D. Beaulieu, T. Shynkaruk, J.C. de Paula Dorigam, R. Whelan, and K. Schwean-Lardner. Determining methionine and cysteine requirements of male and female Ross 708 broiler exposed to heat stress during the finisher period. Poultry Science. https://doi.org/10.1016/j.psj.2025.106145

Egg-citing News

The University of Saskatchewan is currently seeking funding to build a new state of the art laying hen research facility! Funding has already been secured from the Saskatchewan Egg Producers, Canada Foundation for Innovation, and the College of Agriculture and Bioresources. If you know of any companies or individuals who may be interested in becoming a donor, please reach out to Karen Schwean-Lardner (karen.schwean@usask.ca).

British Columbia

Vafa Alizadeh, Otter Coop

Conferences



The BC Egg Conference & AGM 2026 held February 26–27 in Vancouver, served as an important gathering point for egg producers, industry partners, and stakeholders from across British Columbia and Canada. Centered around the theme **"Shared Solutions: Collaboration in BC's Egg Industry,"** the conference successfully brought the sectors together to exchange ideas, strengthen relationships, and address emerging challenges facing egg production. Through a combination of educational sessions, keynote presentations, trade show interactions, and networking events, the conference provided

valuable learning opportunities on topics affecting the future of egg farming while fostering collaboration among producers, allied industries, and policy representatives. The event demonstrated the strength of the BC egg sector by creating a platform where knowledge sharing, innovation, and community engagement could support a resilient and sustainable industry moving forward.



The BC Poultry Conference 2026, held March 12–13 in Langley, British Columbia, successfully brought together poultry producers, industry partners, and stakeholders from across the province for two days of collaboration, learning, and networking. The conference served as a valuable platform for the broiler, turkey, and hatching egg sectors to connect and discuss the challenges and opportunities facing the industry. Through keynote presentations, educational sessions, industry meetings, and a trade exhibition, attendees gained insights into important topics such as animal welfare, government policy, food safety, and sustainable poultry production.

By fostering knowledge sharing and strengthening relationships among producers, suppliers, and industry leaders, the conference played an important role in supporting innovation and a unified vision for the future of British Columbia's poultry sector.

New Poultry Science Faculty

The University of the Fraser Valley (UFV) is excited to welcome **Dr. Sameeha Jhetam** and **Dr. Jing (Jessica) Wang** to the Department of Agriculture. Dr. Jhetam's research focuses on early-life stress and hatchery and transport practices for newly hatched chicks and poults, using welfare, physiological, and production indicators.

Additionally, Dr. Jhetam aims to conduct research on poultry welfare and management to address challenges faced by BC's poultry industry, which has lacked an academic poultry science research program in recent years. Dr. Wang's research assesses the utilization and evaluation of byproducts, feed regulation, and the interactions between feed processing, poultry nutrition, and gut health.



Dr. Jessica Wang (left) and Dr. Sameeha Jhetam (right) at UFV's Chilliwack Campus Poultry Barn

Industry Engagement

The University of the Fraser Valley hosted an event celebrating agriculture and innovation in the Fraser Valley on Canada's Agriculture

Day. This provided an opportunity to connect with valued partners, thank those who have supported UFV Agriculture, and build new relationships with alumni and community leaders. Faculty, alumni, and industry partners celebrated UFV's role in advancing agriculture through research, education, and collaboration, including tours of the facilities and introductions to new faculty.



UFV's Canada's Agriculture Day Event barn tours



Industry networking with members from BC Egg Marketing Board, BC Turkey Marketing Board, and BC Poultry Association



Dr. Wang's speech at UFV's Canada's Agriculture Day Event

Practicum Student Experiences

Undergraduate student, Rachael Fiehn, has been working at S.J. Ritchie Research Farms - a commercial broiler trial facility in Abbotsford, B.C, with veterinarian-monitored commercial floor trials and commercial mini-pen trials. This work-integrated research experience provided Rachael with valuable hands-on, real-world experience in flock-level poultry husbandry and data collections involving production, health, and environmental parameters. Rachael joined a dynamic team of veterinarians, researchers, and technicians striving to model and improve both animal welfare and sustainability using solar power and rainwater recapture technologies on the farm through industry-led research trials.

Editor's Corner

Victoria Sikur, Canadian Hatching Egg Producers

CBHEPA Broiler Breeder Research Grant – DEADLINE EXTENDED

The deadline to apply for the Canadian Broiler Hatching Egg Producers' Association (CBHEPA) Broiler Breeder Research Grant has been extended to **June 1**.

This grant provides an opportunity for a student to perform a short-term broiler breeder research project at a university or a research facility in Canada.

The costs associated with the presentation of the project results to an international congress are eligible for coverage.

For more information and to apply, visit CHEP's (Canadian Hatching Egg Producers) website.

25 Years of CPRC

The Canadian Poultry Research Council (CPRC) is marking 25 years of building critical capacity for made-in-Canada poultry research. Read more about CPRC's accomplishments here.

The CPRC held its annual general meeting April 15, 2026 in Ottawa. Read CPRC's 2025 annual report here.

Visit CPRC's information hub to learn more about CPRC-funded poultry research in Canada.

WPSA Global

The most recent WPSA global newsletter is here. Featured topics include:

- Federations and Working Groups
- World's Poultry Congress 2026
- Branch News
- WPSA Programmes
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- Courses
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