
PDS
PRAIRIE DIAGNOSTIC
SERVICES INC
Annual Report
2023-2024

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Our Passion

Empowering clients with world-class laboratory services and expertise

Our Strategic Goals

- Generate value for members
- Maximize impact on animal and One-Health sectors
- Emerge as a 1st choice for clients and employees

Our Core Values

- Integrity
- Teamwork
- Innovation
- Client-Centred
- Always Improving

Our Accreditations

- Standards Council of Canada (SCC) to ISO/IEC 17025 standard for specific tests
- Fully accredited by the American Association of Veterinary Laboratory Diagnosticians (AAVLD) for all species

Overview of Prairie Diagnostic Services Inc.

Board of Directors

Dr. Betty Althouse
Former Saskatchewan
Chief Veterinary Officer
and veterinarian
(Retired)

Mr. Pat Pitka
Chief Financial Officer
Genome Prairie Inc.

Mr. Robert Pentland
Executive Director
Corporate Services
Saskatchewan Ministry of
Agriculture

Dr. Julie de Moissac
Chair of the Board
Veterinary Practitioner
Mixed Animal Practice
Bratton Road Vet Holdings

Dr. Barry Blakley
Faculty Member
Department of Veterinary Biomedical Sciences
Western College of Veterinary Medicine

Dr. Grant Maxie
Former Director
Animal Health Laboratory
Laboratory Services
University of Guelph (Retired)

Dr. Trent Wennekamp
Veterinary Practitioner
Mixed Animal Practice
Lloydminster Animal Hospital

Dr. William Murphy
Professor
Edwards School of Business
University of Saskatchewan

Mr. Venkata Vakulabharanam
Executive Director
Livestock Branch
Saskatchewan Ministry of Agriculture

Mr. Lee Whittington
Chief Executive Officer
Four Oaks Investments

Dr. Elemir Simko
Faculty Member
Department of Veterinary Pathology
Western College of Veterinary Medicine

Message from Board Chair

I'd like to thank the staff and management team of PDS for their ongoing dedication to the provision of exceptional lab services to the livestock and companion animals of this province, and Western Canada. As a practicing veterinarian, I rely on this service to help guide my clients with their health care needs.

Sample submissions reflected the ongoing drought across the province, but a wet spring and strong prices bring optimism. The management team has been exploring other business opportunities that the lab could entertain such as feed testing, which currently does not exist in Saskatchewan.

Finding and keeping our exceptional staff is something the CEO and management team are working hard to maintain. We realize that our staff is our strength and we are committed to their well-being. The culture of PDS is a board priority and is a pillar of our strategic plan.

We were shocked and saddened to learn of the loss of Dr. Barry Blakley, a valued board member. Dr. Blakley's contribution to the PDS board, the veterinary profession and the food and companion animal sectors cannot be measured. He will be greatly missed.

I would like to thank Dr. Nancy deWith for her contribution to the PDS board. Nancy resigned her position this past year. Our governance committee, under the capable hands of Dr. Betty Althouse is busy repopulating the board.

This will be my last report as I am stepping down as chair following the AGM in September. It has been my great privilege to be involved in this organization and I leave it in the capable hands of Mr. Lee Whittington. Lee brings with him a wealth of experience and will be a tremendous asset to the smooth operation of the board going forward.

Dr. Julie de Moissac
Chair
PDS Board of Directors

In memory of
Dr. Barry Blakley
(1949-2024)

Message from CEO

This year has been a year of significant losses for PDS.

We lost our dear mentor, board member, colleague and friend, and world-renowned toxicologist Dr. Barry Blakley after his brief fight with cancer. He is well-respected by our clients and recognized as the expert in toxicology through the decades-long career in the veterinary college and PDS. We cannot express how much he is being missed.

We are also grieving the loss of our technologist in our clinical pathology laboratory, Lori Schappert. Lori had been serving PDS for 18 years. Her dedication and skill have left a lasting impact on all of us.

PDS continues to face challenges as results of the economy, multi-year drought and project cycle. However, our staff's unwavering effort has ensured another year of successful delivery of our mandate. As readers can see in this report, we continued to safeguard animal health and One Health through our diagnostic work, preparedness for disease outbreaks, participation and championship in disease surveillance, and innovation.

Challenges are also opportunities. We have gone through a more inclusive and collaborative strategic planning exercise. The new strategic plan is more well-rounded while having prominent focuses on client and innovation. We are confident that building a client focus and innovative culture will give PDS a strong base to get through a bumpy road ahead.

I would like to take this opportunity to thank Dr. Julie de Moissac as she is finishing her term – not only as a long-time board member and board chair for the last year, also as one of the most loyal supporters of PDS and a personal mentor. I would like to thank Julie for her leadership, guidance and personal support.

Dr. Yanyun Huang
Chief Executive Officer
Prairie Diagnostic Services Inc.

Year at a Glance

142,382 tests conducted

12 tests developed or improved

15,187 tests for regulated diseases

$148,286 equipment investment

8 peer-reviewed publications

Client Services Information

Client Services at PDS has a fresh look for 2024. A team of client services representatives was formed, comprised of PDS diagnostic specialists and technical and receiving specialists. These specialists represent all aspects of PDS for which clients may require assistance.

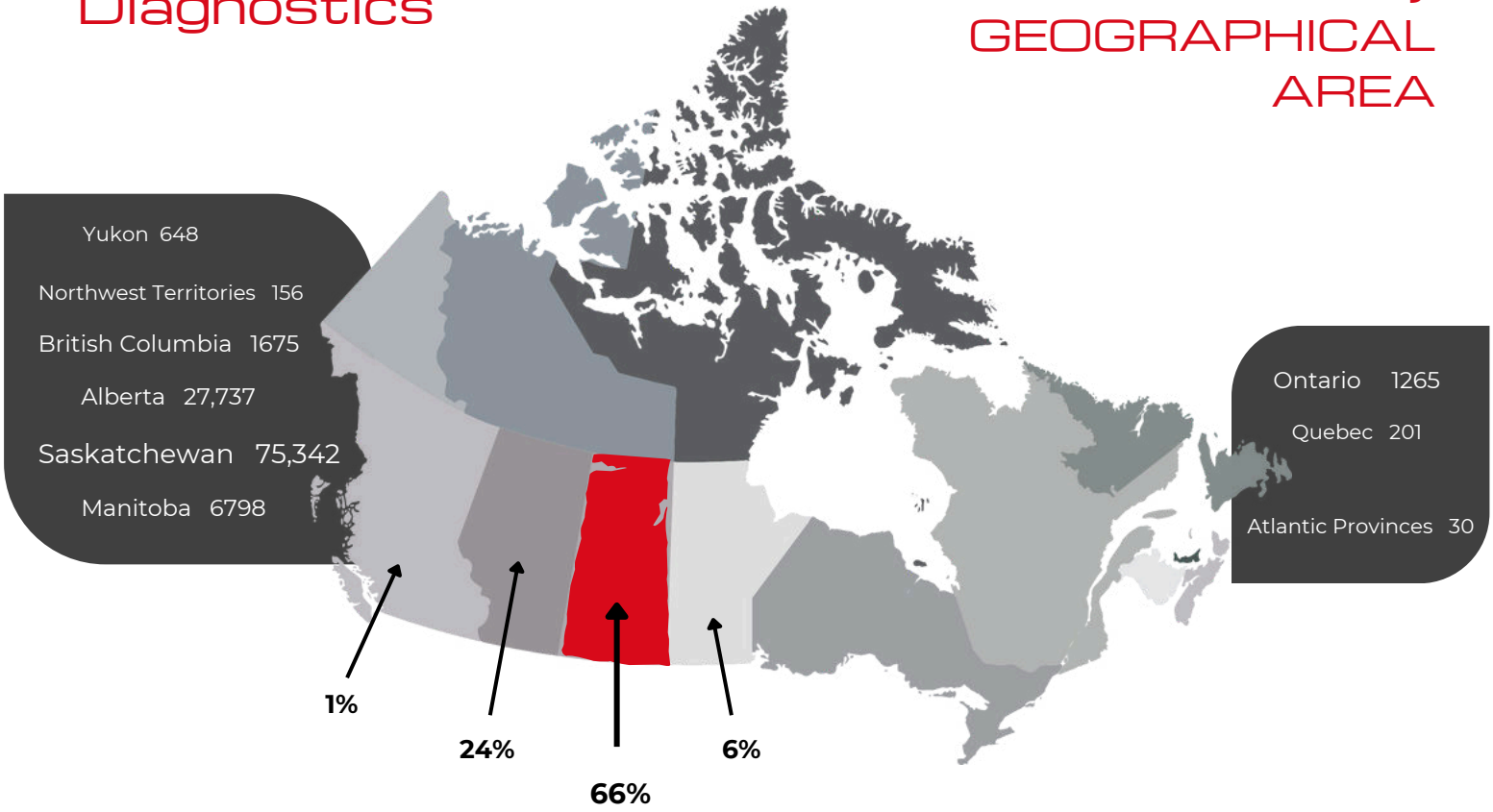
2024 initiatives for this team include, but are not limited to, the following:

- PDS presence at client-focused conferences.
- Reviving the PDS newsletter with a new quarterly publication.
- Establishing a PDS page for both Facebook and Instagram.

PDS is excited to bring this team of PDS specialists to our clients and look forward to adding new initiatives in the future.

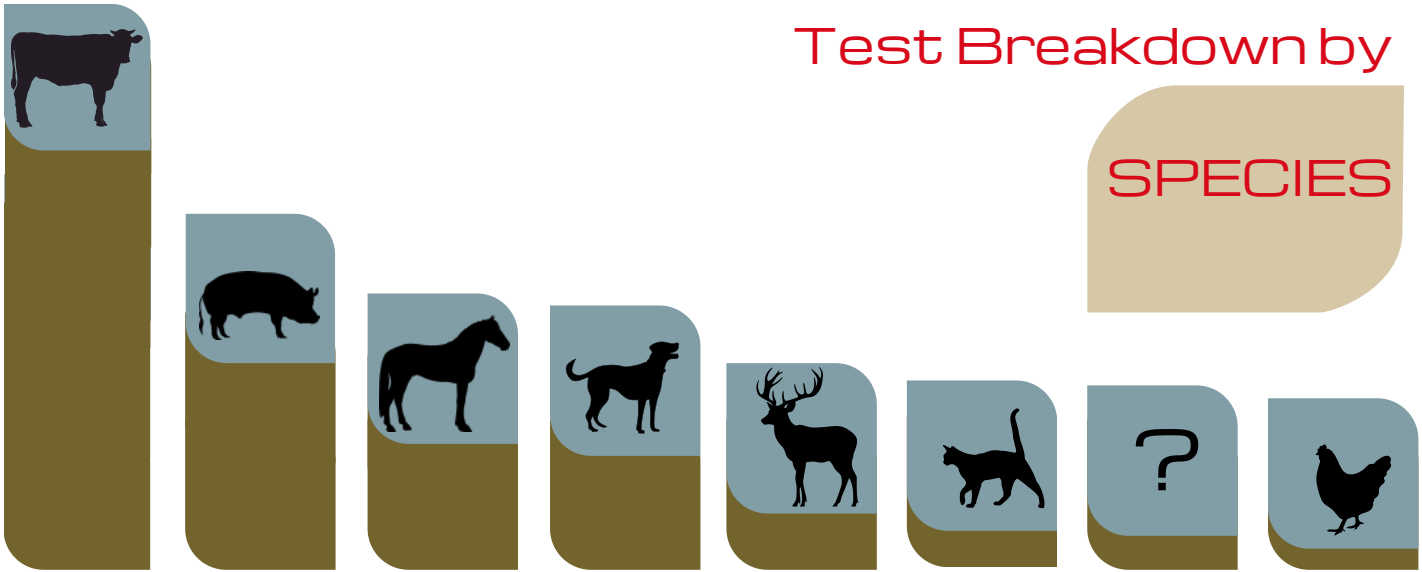
Diagnostics

Tests Breakdown by GEOGRAPHICAL AREA



Between May 2023 and April 2024, PDS received over 36,000 cases and conducted over 142,000 tests. The prairie provinces (Saskatchewan, Alberta, and Manitoba), composing ~97% of the total submissions, continue to be the main geographical areas that PDS serves. PDS also occasionally supports other Canadian provinces and conducts small numbers of digital pathology internationally.

Test Breakdown by SPECIES



PDS continues to provide diagnostic services for all species to veterinary communities. The top four species PDS serves are bovine, porcine, equine and canine, comprising a total of 82% of samples.

Spotlight on Applied Research

We have made significant progress in the investigation of the genetic diversity of bovine Coronavirus, which causes both enteric and respiratory diseases in cattle. Our results confirmed that, just as the coronavirus that causes COVID, there are also genetic variants of bovine coronavirus. Further, the genomic method is able to separate vaccine strains from field strains. This can provide veterinarians and producers more granular diagnostic information in outbreak investigations, and potentially guide future vaccine development.

We have finished the assay development for Bovine Reproductive Sequencing Panel (BovReproSeq).

BovReproSeq can simultaneously detect and partially characterize 17 pathogens that can cause reproductive failure. Preliminary results showed BovReproSeq agreed with conventional test results more than 90% of times.

This research had won the first place of WCVM research poster day award. We will enter phase II of the research by applying BovReproSeq to abortion cases of 2025.

Additionally, PDS expanded the research on Salmonella rapid diagnostics to reflect on changing technology development. We are also working on an investigation of genetic diversity of Bovine Respiratory Syncytial Virus.

These innovations will continue to improve PDS's diagnostic capabilities and add values to the diagnostic results we offer to clients.

Response to Emerging Diseases

PDS was the first Canadian laboratory to offer a diagnostic test for Porcine Sapovirus. This is a virus that causes significant loss to baby pigs due to diarrhea and reduced weight gain. It cannot be differentiated from other endemic or reportable diseases such as rotavirus or Porcine Epidemic Diarrhea without a confirmatory laboratory test. PDS's rapid response was highly praised by the industry and stakeholders. We were invited to share our experiences by the Swine Health Information Center (SHIC) and the Western Canadian Swine Intelligence Network (CWSHIN).

PDS also participated in various settings in the preparation of potential outbreaks of Highly Pathogenic Avian Influenza in Cattle, which caused significant and continued outbreaks in the United States. Partnering with CFIA, we are also working on diagnostic assays for Avian Metapneumovirus, which has swept through the United States.

The continued threats of emerging diseases like these highlights PDS's vital role in the success of animal agriculture and our overall economy.

Quality Assurance

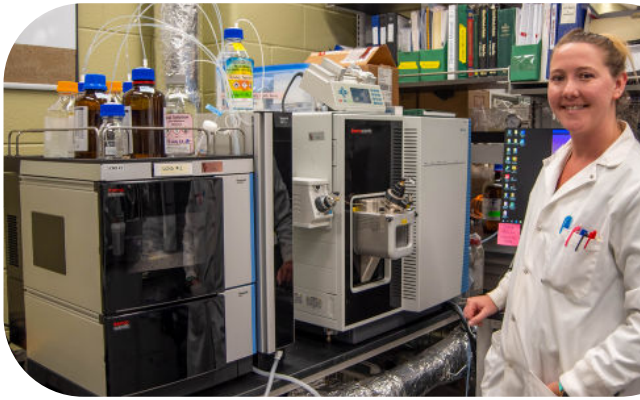
PDS implements a Quality Management System in accordance with the current version of the ISO/IEC 17025 General Requirements for the Competence of Testing and Calibration Laboratories, Standards Council of Canada, and the current version of the standard AAVLD Requirements for an Accredited Veterinary Medical Diagnostic Laboratory, American Association of Veterinary Laboratory Diagnosticians, Inc.

The laboratory participates in proficiency test programs, inter-laboratory comparisons, and in-lab assessments to ensure the standard of testing expertise is maintained.

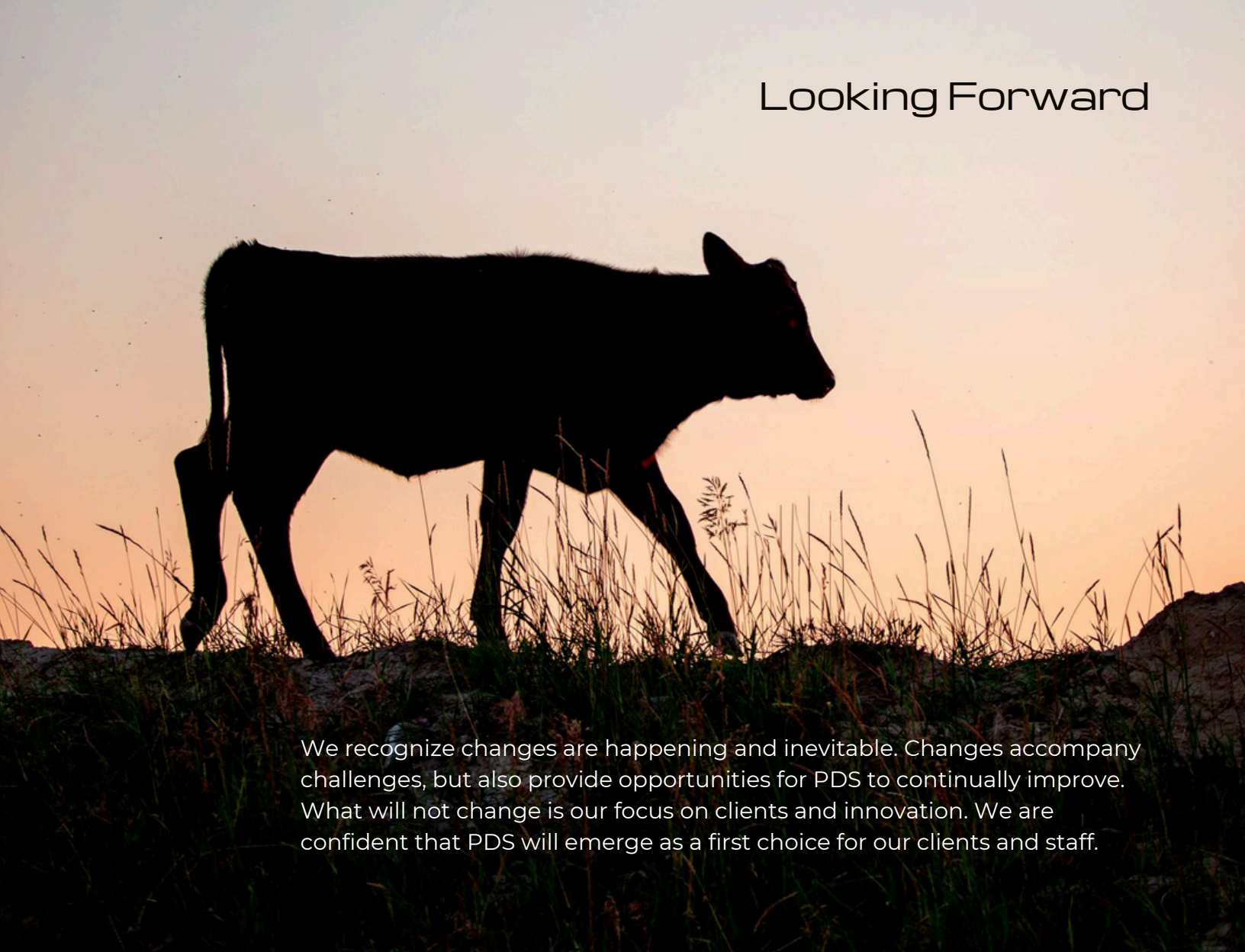
Highlights from the 2023-2024 year include:

- The Standards Council of Canada conducted a three-day on-site assessment in October 2023 with the Microbiology Laboratory. The laboratory was audited based upon the technical and management requirements of the ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration Laboratories standard. Successful re-accreditation of the Prairie Diagnostic Services – Microbiology section was granted and the Scope of Accreditation updated in April 2024.

- Successful completion of a one-day audit from CFIA to ensure the physical and operational requirements were compliant for a regulated FAD Diagnostic Laboratory as well as a Containment Level 2 Prion facility with respect to operating as a TSE Diagnostic Laboratory.



Looking Forward



We recognize changes are happening and inevitable. Changes accompany challenges, but also provide opportunities for PDS to continually improve. What will not change is our focus on clients and innovation. We are confident that PDS will emerge as a first choice for our clients and staff.

Journal Publications

- Kolapo, T.U,, Hay, A., Gesy, K.M., Frey, C.F., Rothenburger, J.L., Joffe, D.J., Spotswood, T., **Huang, Y.**, Massolo, A., Peregrine, A.S., Hill, J.E. Canine alveolar echinococcosis: an emerging and costly introduced problem in North America. Transboundary and Emerging Diseases. 2023;2023(1):5224160.

- Ekenstedt, K.J., Minor, K.M., Shelton, G.D., Hammond, J.J., Miller, A.D., Taylor, S.M., **Huang, Y.**, Mickelson, J.R. A SACS deletion variant in Great Pyrenees dogs causes autosomal recessive neuronal degeneration. Human Genetics. 2023 Nov;142(11):1587-601.

- Christensen, J., **Huang, Y.**, Duize,r G. Lessons from CanSpotASF: Moving towards risk-based African Swine Fever surveillance with rule-out testing in Western Canada. Preventive Veterinary Medicine. 2024 May 1;226:106196.

- **Zhang, M.**, Liu, C.C., **Huang, Y.**, Hill, J., **Araya, M.B.**, Ojkic, D., Gagnon, C.A. Phylogenetic analysis of porcine circovirus 3 (PCV3) circulating in Canadian pigs. Authorea Preprints. 2024 Jan 31.

- Camilli, M.P., Simko, O.M., Bevelander, B., Thebeau, J.M., Masood, F., da Silva, M.C.B., Raza, M.F., Markova, S., Obshta, O., Jose, M.S. and Biganski, S., **Kozii, I.**, **Zabrodski, M.W.**, Moshynskyy I., **Simko, E.**, Wood S. 2024. Fetal Alcohol Spectrum Disorder: The Honey Bee as a Social Animal Model. Life, 14(4), p. 434.

- Biganski, S., Obshta, O., **Kozii, I.**, **Koziy, R.**, **Zabrodski, M.W.**, Jose, M.S., Thebeau, J.M., Silva, M.C., Raza, M.F., Masood, F. and Wood, S.C. 2024. Fall Treatment with Fumagillin Contributes to an Overwinter Shift in Vairimorpha Species Prevalence in Honey Bee Colonies in Western Canada. Life, 14(3), p. 373.

- Obshta, O., **Zabrodski, M.W.**, Soomro, T., Wilson, G., Masood, F., Thebeau, J., Silva, M.C., Biganski, S., **Kozii, I.V.**, **Koziy, R.V.** and Raza, M.F., Jose M.S., **Simko, E.**, Wood S.C. 2023. Oxytetracycline-resistant Paenibacillus larvae identified in commercial beekeeping operations in Saskatchewan using pooled honey sampling. Journal of Veterinary Diagnostic Investigation, 35(6), pp. 645-654.

- Biganski, S., Lester, T., Obshta, O., Jose, M.S., Thebeau, J.M., Masood, F., Silva, M.C., Camilli, M.P., Raza, M.F., **Zabrodski, M.W.** and **Kozii, I.**, **Koziy, R.**, Moshynskyy I., **Simko, E.**, Wood S.. 2023. Comparison of individual and pooled sampling methods for estimation of Vairimorpha (Nosema) spp. levels in experimentally infected honey bee colonies. Journal of Veterinary Diagnostic Investigation, 35(6), pp. 639-644.

Presentations & Awards

Conference Presentations:

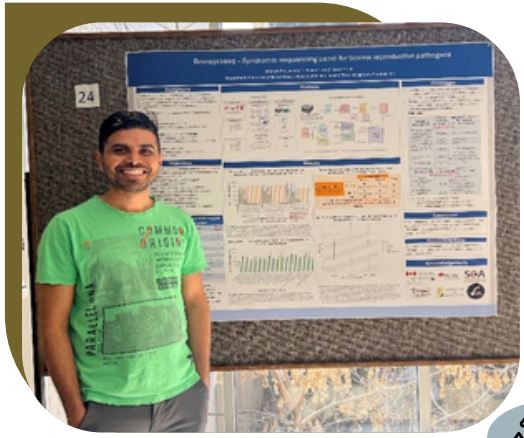
- **Yanyun Huang**, Preliminary laboratory findings on Porcine Sapovirus- A Western Canadian Perspective, Swine Health Information Center webinar, August 30, 2023.
- **Yanyun Huang**, One year of Porcine Sapovirus testing in PDS, Western Canadian Swine Intelligence Network Annual Conference, Winnipeg, February 2, 2024.
- **Musangu Ngeleka**, Ruwani Karunarathna, Chao Chun Liu , Dhinesh Periyasamy, David Thiessen, Anatoliy Trokhymchuk. Metagenomic assessment of a risk matrix associated with Salmonella serovars isolated from chicken egg farms using a third-generation sequencing platform. 66th AAVLD annual meeting in October 2023 (National Harbor, MD).
- **I. Kozii*** and S. Wood*. Honey Bees: What You Need to Know. CafeScientifique Saskatoon; March 19, 2024.
- **I. Kozii**. Do-s and Don't-s of sample collection (a pathologist's perspective). 39th Annual SAVT Conference; Saskatoon, November 2023.

Poster Presentations:

- Tekeleselassie Woldemariam, Xaiobei Zhang, **Lilani I. Munasinghe**, Jocelyne Lew, John R. Gordon, Darryl Falzarano. Blockade of pulmonary neutrophilic infiltration with G31P did not ameliorate SARS-CoV-2- induced lung pathology in K18-hACE2 mice. Poster presented at 5th Symposium of the Canadian Society for Virology, CSV2024

Awards:

- **First place - Dhinesh Periyasamy**, WCVM Graduate student poster competition and presented "Bovreproseq - A syndromic pathogen sequencing panel for simultaneous detection of pathogens associated with bovine reproductive failure".



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