Innovative clinical initiatives strengthen veterinary research

Jean-Pierre Lavoie, DMV, DACVIM*; Julie Blouin, MSc; Marie Archambault, DMV, PhD, DACVM; Christine Theoret, DMV, PhD, DACVS

Faculté de Médecine Vétérinaire, Université de Montréal, Saint-Hyacinthe, QC, Canada

*Corresponding author: Dr. Lavoie (jean-pierre.lavoie@umontreal.ca)
doi.org/10.2460/ajvr.23.06.0124 © 2023 THE AUTHORS. Published by the American Veterinary Medical Association

The Faculty of Veterinary Medicine (FMV) of the Université de Montréal (UdeM) is located in Saint-Hyacinthe, approximately 60 km from the UdeM campus, in the heart of Québec’s most important agri-food zone. As a proud member of one of Canada’s most influential research universities, the FMV contributes to advancing knowledge in animal health and welfare, agri-food, and public health through a one-health approach within its research groups.

Research Groups

The Research Center in Reproduction and Fertility (CRRF) is one of the largest research centers in the world in farm animal reproduction. It integrates researchers working in animal and human reproductive biology in a multidisciplinary collaborative approach.

The Research Group on Infectious Diseases in Animal Production (GREMIP) proposes innovative research and training programs to control infectious diseases in animal production and thus promote animal welfare, sustainable development, and public health in the agri-food sector.

The Zoonotic Disease, Epidemiology and Public Health Research Group (GREZOSP) is a reference center for epidemiological methods and the one-health approach to improve health at the human-animal-environment interface in Canada and worldwide.

The Food Safety Education and Research Group (GRESA) promotes innovation for microbiological and chemical food-related hazards to ensure food safety and security.

The Cattle Health Research Group (GRESABO) advances the health of cattle and other ruminants through innovative research on diseases of clinical importance in Québec.

FMV also hosts 3 strategic clusters funded by the Fonds de Recherche du Québec-Nature et Technologies that bring together researchers and students from both academia and industry: Québec Reproduction Network (RQR), Swine and Poultry Infectious Disease Research Centre (CRIPA), and Op+lait.

Inaugurated in 2020, the mission of the Center for Expertise and Clinical Research in Animal Health and Welfare (CERCL) is to develop and coordinate, with all stakeholders, the animal health sector at the UdeM and throughout its network. The CERCL contributes to improving animal health through a continuum of high-level clinical and translational research that promotes the development, implementation, and evaluation of new preventive, diagnostic, and therapeutic strategies for animal and human health. Fifty-six clinician-scientists, clinical track faculty, and basic scientists contribute to the 5 research priorities of the CERCL, complementing areas of research of other FMV research groups.

1. Animal welfare uses a multidisciplinary approach to animal welfare research, including behavior, pain management, ethics, and production, it also provides expertise to government agencies and other stakeholders.

2. Antimicrobial stewardship reduces antimicrobial use for animal health by optimizing dosages and drafting guidelines and decision trees, monitoring antibiotic use, developing alternative strategies to antimicrobials, and educating/training/disseminating to end users.

3. Biosecurity in the veterinary field is a cross-cutting discipline with many implications for animal and public health, including preventing and controlling contagious and zoonotic infectious animal diseases.

4. Applied and translational research is an important component of veterinary biomedical research and aims at developing clinical applications from fundamental and applied discoveries and knowledge.

5. Big data and artificial intelligence (AI) priority aims at facilitating data collection, integration, and analysis in data management and AI to describe historical animal health data, diagnose the causes of health events observed in the past, predict future health outcomes, and prescribe interventions that will prevent or control adverse events.

The AI-Agro-Health Platform

The AI-Agro-Health Platform (PIAAS) is built on a unique network of animal health and data science experts. Its mission is to accelerate the use of data sciences and AI in veterinary medicine by offering services to improve agri-food production and animal health in Québec, Canada, and worldwide.

New Master’s and PhD Programs

New human-animal bond MSc and PhD programs have recently been created to provide combined training in veterinary science and other disciplines of the humanities or social sciences (eg, studies on pain and behavior). It aims to train researchers with the capacity to pursue activities that relate to the synergy between humans and animals.

More information on research at the FMV is available at https://fmv.umontreal.ca/recherche/unites-de-recherche/