



USASK SIGNATURE AREAS

# ONE HEALTH



Scan for more information

## Solutions at the animal-human-environment interface

**Co-Lead:** Dr. Emily Jenkins (PhD) Department of Veterinary Microbiology, WCVM

**Co-Lead:** Dr. Arinjay Banerjee (PhD) Vaccine and Infectious Disease Organization (VIDO), Department of Veterinary Microbiology, WCVM

One Health addresses the interconnectedness between human, animal and environmental health, with an understanding that one cannot progress at the cost of others. Respecting these intersections, the University of Saskatchewan's (USask) *One Health Signature Area of Research* is working to combat global health threats at all scales through proactive, innovative and transdisciplinary approaches. Combining expertise and resources from human and veterinary medicine, environmental sciences and agriculture, USask is driving responses to emerging health threats that the world needs.

The *One Health Signature Area of Research* is taking a collaborative approach to align our expertise and ensure preparedness in the face of future infectious disease. This process combines surveillance, the investigation of emerging human and animal pathogens, development of diagnostics, therapies, and vaccines, and studying the underlying ecological and social determinants of health and disease. Building capacity by training students in critical infrastructure that are housed at USask, such as our state-of-the-art high-containment laboratories, is an important deliverable of this work.

Climate change is a key environmental driver of human and animal health. The *One Health Signature Area of Research* investigates the impacts of environmental contaminants, biodiversity loss, permafrost thaw and extreme weather events on the health of ecosystems, animals and human communities. This Signature Area recognizes the impact of land-use change and the effects of the shifting climate on the emergence of infectious disease. Our experts are exploring the impact of these phenomenon using interdisciplinary approaches.

The *One Health Signature Area of Research* also embraces the advantages that come from the connections between humans, animals and the environment. These include the positive impacts of companion and therapy animals, the wisdom of Indigenous ways of knowing and relating to animals and the land, and the importance of local and global food security.

The *One Health Signature Area of Research* leverages key USask infrastructure such as the Vaccine and Infectious Disease Organization, Canadian Light Source, Global Institute for Water Security, Global Institute for Food Security, Prairie Diagnostic Services, Centre for Applied Epidemiology, Livestock and Forage Centre of Excellence, Facility for Applied Avian Research, Zoonotic Parasite Research Unit, and Beef ReproTech. Important partnerships with provincial, territorial and federal public, livestock and wildlife health authorities also enable much of this work.

### Notable Areas of Focus:

- Surveillance, diagnosis, drugs and vaccines for existing and emerging infectious diseases.
- Antimicrobial and antiparasitic drug resistance.
- Risks as well as benefits at the animal/human/environmental interface.
- Impact of contaminants, biodiversity loss and climate change on the health of ecosystems, humans and animals.
- Ecological and social determinants of health.