

New \$2.35M USask Research Chair Targets Improved Health and Productivity in Beef Herds

Saskatoon, SK - With \$2.35 million from the federal government and the Beef Cattle Research Council (BCRC), University of Saskatchewan (USask) veterinary researcher Dr. Cheryl Waldner will undertake a major five-year research program to advance beef cattle health and productivity, helping to sustain the profitability and competitiveness of Canada's \$17-billion-a-year beef industry.

"This timely and cutting-edge research builds on our university's strengths in agriculture and 'One Health' to help advance the livestock industry's economic contributions to the country and ensure continued consumer confidence in the safety and quality of Canadian beef," said USask President Peter Stoicheff in announcing the new chair Jan. 30.

The \$750,000 award from the federal Natural Sciences and Engineering Research Council (NSERC) is matched by \$750,000 in producer check-off funding from the BCRC. USask is contributing \$850,000.

As NSERC/BCRC Industrial Research Chair in One Health and Production-Limiting Diseases, Waldner will work with the industry to address priorities of Canada's beef producers across the beef value chain—from improved herd health, to expanded surveillance of antibiotic use and resistance, to increased uptake of best practices for herd management.

"This chair will use a systems approach to build on existing research and examine complex health challenges," said Waldner, a professor of large animal clinical sciences in the USask Western College of Veterinary Medicine (WCVN).

"We will identify existing gaps and fill them using innovative data collection and decision-making tools and technologies to enable the Canadian beef industry to better manage production-limiting diseases and develop evidence-based policies for animal health and antimicrobial stewardship."

Management of diseases such as Johne's disease in cow-calf herds and bovine respiratory disease in feedlots, as well as antibiotic use and antibiotic resistance, are key industry priorities.

"Disease-causing bacteria in animals are increasingly able to resist the antibiotics used to treat them, and the agriculture industry is being challenged to improve antibiotic stewardship in livestock production," she said.

The tools and technologies to guide herd management and policy and enable targeted precision medicine will include genomics, big data and system science tools, network analysis, computer modelling, and smart phone sensors and apps. USask's computer science researchers will play a key role in adapting these new tools and technologies to industry challenges and providing experts to help researchers manage the volumes of data to support complex decision making, she said.

"The challenges faced by the beef industry require new and more specialized diagnostic and data management tools that can generate results in real time, and trained expertise to help producers make complex animal disease prevention, treatment and management decisions," said BCRC Chair Ryan Beierbach. "We look forward to working with Dr. Waldner and her team on research aimed at supporting continued advancements in industry productivity and sustainability and helping to inform industry and government policy and standards."

The IRC award enables the hiring of a junior faculty member, expanding the regional veterinary college's beef cattle health research capacity. The IRC also includes training for at least three master's students, two PhD students, one post-doctoral fellow and five undergraduate students, providing skills in great demand by industry and government such as data management and analysis, bioinformatics and systems science.

Among the reasons USask was chosen for the chair—in addition to Waldner's research record and previous collaborations with BCRC—are the critical mass of beef researchers at WCVN and the College of Agriculture and Bioresources, along with access to the new USask Livestock and Forage Centre of Excellence.

"NSERC is proud to support the University of Saskatchewan, which has a long history of supporting research in the livestock area," said Marc Fortin, NSERC's Vice-President of Research Partnerships. "Dr. Waldner and her team will develop innovative tools to support policy setting and management decisions in Canada's beef industry, a significant contributor to the Canadian economy."

As well, the new chair builds on a recent \$5.6-million Genome Canada award to Waldner and her colleagues at USask and the University of Alberta, including \$750,000 announced Jan. 29 by the Saskatchewan Agricultural Development Fund. This project, administered by Genome Prairie, involves developing genomic diagnostics tools that can be used to quickly and accurately identify an antimicrobial treatment for a disease, something that now takes five to seven days using traditional laboratory tests.

Canada is one of the largest exporters of red meat in the world, with 38 per cent of domestic beef exported. More than 80 per cent of the cattle are raised in Western Canada.

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About BCRC:

The Beef Cattle Research Council (BCRC) is Canada's industry-led funding agency for beef, cattle and forage research. The BCRC is funded through a portion of the Canadian Beef Cattle Check-Off as well as government and industry funding, and is directed by a committee of beef producers from across the country. <https://www.beefresearch.ca/>

About NSERC:

The Natural Sciences and Engineering Research Council of Canada supports university students in their advanced studies, promotes and supports discovery research, and fosters innovation by encouraging Canadian companies to participate and invest in post-secondary research projects. NSERC researchers are on the vanguard of science, building on Canada's long tradition of scientific excellence. https://www.nserc-crsng.gc.ca/index_eng.asp

For more information, contact:

Victoria Dinh

USask Media Relations Specialist

306-966-5487

victoria.dinh@usask.ca

Stacey Domolewski

Research and Innovation Coordinator

Beef Cattle Research Council

(403) 635-1847

domolewskis@beefresearch.ca