

Research Profile – Kendall Swanson

Name: Kendall Swanson
Department: Animal Science
Campus Location: 166 Hultz Hall



The Researcher

Dr. Kendall Swanson is an associate professor in the Department of Animal Sciences at NDSU. He earned his B.S. and M.S. degrees from NDSU and his PhD degree in Animal Science from the University of Kentucky. He returned to NDSU to join the Animal Sciences Department as a faculty member in the fall of 2010.

The Research

The primary focus of his research is on beef cattle nutrition and physiology. Specifically, Swanson is interested in nutritional and physiological factors influencing feed efficiency in growing and finishing cattle and in mature pregnant cows.

Swanson's objectives are to examine dietary and physiological factors that influence feed digestion and tissue metabolism. Most recently he has focused on two primary areas of research: 1) the effects of nutrition from factors such as feed intake, distillers grains inclusion, and corn processing on feeding behavior and growth performance in growing and finishing cattle, and 2) the effects of maternal nutrition including feed restriction, refeeding, and supplementation programs on maternal and fetal pancreatic, liver, and gastrointestinal function.

Swanson strives to have a broad research program that studies effects ranging from molecular to whole animal responses in beef cattle as related to nutrition, physiological status, and management strategies. In the future, he would like to develop management and feeding systems to optimize the function of the gastrointestinal tract, liver, and pancreas in a way to maximize the efficiency of calf and beef production. Another key objective is to give students the opportunity to gain experience working with beef cattle and with scientific research, and to help train the next generation of animal scientists.

Why it Matters

Feed costs are one of the largest costs associated with calf and beef production. Feed costs also generally have increased over the last several years. Even small improvements in feed efficiency can have large effects on profitability. Improved profitability should result in a sustainable and potentially growing beef industry in ND and beyond.

What is the greatest reward after the completion of a project?

The greatest reward is the satisfaction of working as a team to answer important questions on topics to improve the efficiency of beef cattle production.

Student Engagement

Swanson has two graduate students, one visiting graduate student, and an undergraduate student currently working on research projects at NDSU.

- Faithe Doscher, $\frac{3}{4}$ time technician and PhD student in Animal Science. Faithe's research is on the impacts of nutrition on pancreatic function, digestive efficiency, and nutrient management in ruminants.
- Ligia Prezotto, PhD student in Animal Science. Ligia's research is on the impacts of maternal nutrition on maternal and fetal intestinal and liver energy use and endocrine factors influencing feed intake in ruminants.
- Carolina Heller Pereira, visiting PhD student from Brazil. Carolina is researching the impact of nutrition on liver function and impact of endocrine manipulation on placental and fetal development.
- Megan Ruch, undergraduate student in Animal Science. Megan assists with projects on digestion and pancreatic function.

Swanson also has a great group of laboratory and animal technicians that he works very closely with that help with the research and student training. Swanson teaches introduction to animal nutrition, nitrogen metabolism, and energy metabolism courses at NDSU.

What is your advice for students who want to go into your field of study?

Swanson recommends that students take advantage of opportunities to gain experience in a wide range of activities, and meet people that can have important impacts on their future. Most importantly, strive to do things that you love and continue learning in whatever you do.

What excites you the most about your project?

Swanson is fascinated about the cellular and physiological factors that result in differences between the animal's feed intake, digestion of nutrients, and efficiency of nutrient use by tissues, and the whole animal.

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