

Animal, Dairy, and Veterinary Sciences, MS, PhD

Specialization(s): Animal Health and Disease; Animal Molecular Genetics; Animal Nutrition; Animal or Dairy Management; Reproduction and Development

Department: Animal, Dairy, and Veterinary Sciences Department

College: College of Agriculture and Applied Sciences

Overview

About This Degree

This department hosts a broad range of studies, from traditional animal and dairy management to in-depth biological areas, including cloning, molecular biology, genomics, metabolomics, proteomics, and bioinformatics. The department has access to lab facilities and equipment allowing research in all of these areas and in studying animal reproduction, nutrition, and disease. Its Center for Integrated Biosystems has been recognized for its cloning expertise twice by *Popular Science* magazine. Approximately five new students are admitted each year, making this a competitive program with a strong sense of community amongst its graduate students and faculty.

Career Options

Nearly all graduates of the PhD program pursue careers as university faculty and researchers. Additionally, many MS graduates go on to doctoral programs. Graduates can also work in the following areas:

- Pharmaceutical research
- Reproduction clinics, both animal and human
- Public health
- Veterinary medicine
- Agribusiness
- Animal management
- Animal feed industry
- Nutritional companies
- Diagnostic medicine
- Medical technicians, both animal and human

What it takes

Admissions Requirements

Applicants with undergraduate majors other than animal, dairy, and veterinary sciences are considered, but they must have strong undergraduate backgrounds in the sciences, particularly biology.

Application Requirements:

- Complete the [online application](#)
- Pay the \$55 application fee
- Score at or above the 40th percentile on the GRE
- Have a 3.0 or higher GPA on your last 60 semester or 90 quarter credits
- Provide transcripts of all college/university credits
- Provide three contacts for letters of recommendation

International students have [additional admissions requirements](#).

Admissions Deadlines

The department has the following deadline:

- Fall semester – March 15
- Applications are accepted after this deadline, but students are less likely to be considered for financial assistance.

Master's Degree Plan Options

For the **MS**, students must pursue the following option:

- In the **Plan A** option, students complete graduate-level coursework and must write a thesis.

For the **animal management** specialization, students have two options:

- In the **Plan A** option, students complete graduate-level coursework and must write a thesis.
- The **Plan B** option requires the production of a paper and is expected to reflect equivalent scholarship standards as a thesis. This option is considered to be a terminal degree, and graduates are not eligible for acceptance into USU's PhD program in animal, dairy, and veterinary sciences.

Financial Assistance

All graduate students in the department receive some sort of funding. In particular, the department offers competitive teaching and research [assistantships](#) on a rotating basis. Students awarded these assistantships are given \$15,000 per year. Students earning a master's degree receive this amount for two years, those earning a PhD will receive it for three years, and those who enter the PhD program directly out of a bachelor's degree will receive this assistantship for five years. In addition to these amounts, students will also receive subsidized [health insurance](#).

A variety of additional funding opportunities are available, including [fellowships](#), [scholarships](#), [tuition awards](#), and [travel support](#).

Program Requirements

[Click here](#) to see course requirements for the **Master of Science**.

[Click here](#) to see course requirements for the **Doctor of Philosophy**.

PhD Qualifying Exams:

PhD students must pass qualifying exams after their second year, at a time determined by their major professor. The student will meet with their supervisory committee and receive a focus area on which their exam will be concentrated. The exam will have a written and oral component and is designed with the goal to fine tune the student's understanding of the focus area.

Contact

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Get Involved

Professional Organizations, Honor Societies, and Clubs

American Society of Animal Science: ASAS is a professional society for animal scientists interested in promoting new ideas and interacting widely with the broad spectrum of animal science professionals.

American Dairy Science Association: ADSA is an organization committed to sustaining and increasing the global dairy industry through the generation, dissemination, and exchange of information and services.

International Embryo Transfer Society: IETS and its missions provide access to the most current research and clinical procedures associated with the follicle, ovulation, superovulation, gonadotropins, the embryo, the oocyte, the sperm cell, IVF, IVM, embryonic developmental stages, oocyte cryopreservation, lactation, and embryo transfer/cloning.

Society for the Study of Reproduction: SSR is a group of scientists who share an interest in reproductive biology.

Labs, Centers, Research

Animal Science Farm: The Animal Science Farm provides facilities for cattle, sheep, swine, and horses. Facilities also include a home for the farm manager, a pavilion for teaching and Cooperative Extension activities, and handling facilities for the various species of livestock.

Caine Dairy Center: The Caine Dairy Center is considered one of the nation's most modern dairy research facilities. The center features a state-of-the-art milking parlor, a heated pavilion for judging cows and teaching, a 60-cowtie stall barn, a feed preparation and behavior research area, and a feeding research unit for 72 cows in loose housing, which has eight stalls for research involving fistulated or catheterized animals. There is also outdoor cow housing with a capacity of 128 animals, which is equipped with meteorological instruments for continuous recording of climatic data. Additionally, the center features heifer and dry cow housing, individual, portable calf housing hutches, and a waste-handling system and lagoons.

Center for Integrated BioSystems: The CIB leads a progressive, interdisciplinary effort in research, core services, and education serving agriculture and life sciences. The CIB is where the first hybrid animal, a mule, was cloned, and was named one of "30 Awesome College Labs" by Popular Science magazine. The CIB has a research program with several active projects in diverse areas of life science that encompass plant, animal, and microbe functional genomics.

Equine Education Center: This modern equine facility accommodates 40 head of horses with two tack rooms, wash racks, feed rooms, two classrooms, and office space that provides a working environment experience. Large indoor and outdoor arenas accommodate more classes, Extension events, and horse shows and clinics. A breeding barn will be a part of the new facility, as donations allow for its eventual completion, to provide students with experience in

handling stallions, collecting and evaluating semen, teasing and inseminating mares, and foaling.

Institute for Antiviral Research: The IAR is comprised of a recognized team of scientists representing a spectrum of disciplines, who are researching ways to control viral diseases. The IAR has been involved with the pre-clinical development of several FDA-approved drugs, including Tamiflu, which was recently used to combat H1N1. The main areas of emphasis are respiratory diseases such as influenza and infections caused by emerging viruses, including West Nile virus.

Laboratory Animal Research Center: The LARC is a controlled laboratory that utilizes animals in teaching and research. The proper care of animals is of utmost importance as it relates to the effectiveness of research and the safety of the animals and researchers.

Matthew Hillyard Agricultural Research and Teaching Center: This center provides teaching, research, Cooperative Extension, and professional service to support the animal industries of Utah, the surrounding region, the nation, and the international community. The facility features a veterinary clinic, a teaching laboratory, and a harvest facility.

North Logan Farm: The North Logan Farm facility consists of land, equipment, buildings, and animals (beef and dairy cattle, sheep, goats, horses, and mink) that are used for research, teaching, service, and animal husbandry activities.

USDA ARS Poisonous Plant Research Laboratory: The Poisonous Plant Research Laboratory identifies toxic plants, and its interdisciplinary teams of chemists, geneticists, pathologists, physiologists, plant and range scientists, toxicologists and veterinarians provide an interdisciplinary approach of applied and basic research to develop solutions to intoxication.

Utah Agricultural Experiment Station: The UAES is part of a network of researchers and facilities at the nation's land-grant universities and is committed to improving agriculture and managing natural resources for the people of Utah. At research facilities on the USU campus and throughout the state, UAES supports hundreds of research projects that promote agriculture and human nutrition and enhance the quality of rural life.

Utah Veterinary Diagnostic Laboratory: The UVDL is a cooperative effort by USU and Utah Department of Agriculture and Food. The laboratory provides timely, in-depth, cost-efficient, veterinary diagnostic services to safeguard animal health, protect the agricultural economy, and shield the public against diseases transmissible from animals to humans.

Veterinary Diagnostics and Infectious Disease Research Group: VDID draws on the strength of USU's College of Agriculture to tackle a \$1-billion-a-year market in the United States for animal disease screening and diagnostics.