

Animal Sciences

Department Information

- **Department Head:**
Guillermo Scaglia, Ph.D.
- **Graduate Coordinator:**
Kendall Swanson, Ph.D.
- **Department Location:**
100 Hultz Hall
- **Department Phone:**
(701) 231-7641
- **Department Web Site:**
www.ag.ndsu.edu/ansc/ (<http://www.ag.ndsu.edu/ansc/>)
- **Application Deadline:**
Applications are accepted for fall, spring and summer semester admits.
- **Credential Offered:**
Ph.D., M.S.
- **English Proficiency Requirements:**
TOEFL iBT 71, IELTS 6; Duolingo 105

The Department of Animal Sciences offers graduate study leading to Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) degrees. Advanced work may involve specialized training in the following areas: animal breeding, animal nutrition, animal genetics, animal health and stewardship, physiology of reproduction, meat and muscle science, and nutritional physiology.

Student research and academic programs are tailored to individual student needs and interests. Interdisciplinary approaches to Animal Sciences programs are fostered.

Application Process

Contact Potential Advisor

Prospective students are ***strongly encouraged*** to contact potential advisors in the department before formal application to the Graduate School so that the student can determine if the faculty member is currently accepting new students and to determine if the faculty member(s) research program is an appropriate fit for both the student and faculty member(s). Official approval of admission does not occur until approval through the Graduate School and agreement of a faculty member(s) to accept the student as an advisee in their research program.

Application Through Graduate School

Applications are submitted to the Graduate School through the Application Website (<https://www.ndsu.edu/gradschool/apply/>). Requirements for admission to the graduate school for domestic and international students are also listed on this website. Our department does not require students to have taken the GRE exam. Information on requirements for International Applicants (<https://www.ndsu.edu/gradschool/apply/international/>) including English Proficiency are also provided through the Graduate School. Once the Graduate School has received a complete application, it is forwarded to the department for review. Each graduate program makes its own recommendation, but the final admission decision is the responsibility of the Dean of the College of Graduate and Interdisciplinary Studies.

Financial Support

Assistantships

Graduate research assistantships are available on a competitive basis. Graduate assistants are typically full-time graduate students who participate in teaching, research, Extension, and/or other departmental activities in exchange for financial support at North Dakota State University. Graduate assistantships are typically considered ½ time in the Department of Animal Sciences, which equates to approximately 20 hours of work per week. Weekly duties are coordinated in consultation with the student's graduate advisor. Most research assistantships in the Department of Animal Sciences are supported from grant funds obtained by individual faculty members. Student tuition waivers (coordinated through the College of Agriculture, Food Science, and Natural Resources) are also currently granted for students receiving an assistantship. Students are still required to pay student fees. Students are referred to the Graduate Assistantship Policies (<https://catalog.ndsu.edu/graduate/graduate-school-policies/graduate-assistantship-policy/>) in the Graduate Catalog for further information. The department has a limited number of full- and half-time fellowships to support graduate students with priority to incoming students from North Dakota. The faculty member for which the student is, or will be, working with is responsible

for submitting fellowship applications to the departmental Graduate Coordinator for review by the departmental graduate committee when calls for applications are made.

M.S. Requirements

Typically, students in the M.S. program in Animal Sciences are in the thesis-based program (Plan A). Refer to the Graduate School Catalog Policy (<https://catalog.ndsu.edu/graduate/policies/>) for further information on the Master's Paper/Comprehensive Study program (Plan B).

The minimum requirements for the M.S. degree are:

- Minimum 30 credits total
- 16 of the 30 must be didactic credits
 - Didactic courses are those courses approved for graduate credit numbered 601-689, 691; 700-789,791; 800-889, 891. Courses numbered 690, 692-699, 790, 792-799, 890, 892-899 are considered special or experimental courses and are not to be included as didactic courses on a Plan of Study.
 - 600 number courses are stacked undergraduate/graduate course, and 700 and 800 number courses are MS and PhD level courses. Courses approved at the 600, 700 and 800 level may be taken for graduate credit and used to satisfy course requirements on the student's graduate Plan of Study.
- 6-10 credits of ANSC 798 (Master's Thesis)
- Departmental required courses
 - ANSC 790 (Graduate Seminar): 2 credits
 - ANSC 793 (Graduate Teaching Experience): 2 credits typically over 2 semesters of 1 credit each; required for students on assistantship)
- Suggested courses
 - 1 or more ANSC graduate courses
 - 6 credits of statistical courses in STAT, PLSC, or ANSC
 - 3-6 credits of biochemistry
 - 1 writing course in ANSC, ENGL, ENT, or from another class subject/department
 - Students are also encouraged to take courses from other disciplines depending on their research program and interest

Ph.D. Requirements

Typically, students enrolled in the Ph.D. program will have successfully completed a M.S. degree in Animal Sciences or related field from NDSU or another reputable University. If enrolling in the Ph.D. program directly from a B.S. program, please refer to the Graduate School Catalog (<https://catalog.ndsu.edu/graduate/policies/>).

The minimum requirements for the Ph.D. degree are:

- Minimum of 90 graduate credits total
 - Thirty credits from a previously earned M.S. degree may be approved to fulfill 30 of the 90 doctoral program credits required. The previous M.S. degree must be in the same or a meaningfully related discipline.
 - Up to 15 transfer credits from another doctoral program in the same or a meaningfully related discipline from an accredited doctoral institution may be allowed in individual cases.
 - Minimum of 45 credits total completed at NDSU
- 15 credits must be 700-800 level didactic courses
 - Didactic courses are those courses approved for graduate credit numbered 601-689, 691; 700-789,791; 800-889, 891. Courses numbered 690, 692-699, 790, 792-799, 890, 892-899 are considered special or experimental courses and are not to be included as didactic courses on a Plan of Study.
 - 600 number courses are stacked undergraduate/graduate course, and 700 and 800 number courses are M.S. and Ph.D. level courses. Courses approved at the 600, 700 and 800 level may be taken for graduate credit and used to satisfy course requirements on the student's graduate Plan of Study.
- Departmental required courses
 - ANSC 790 (Graduate Seminar): 2 credits
 - ANSC 793 or 892 (Graduate Teaching Experience): 3 credits typically over 3 semesters of 1 credit each; required for students on assistantship)
- Suggested courses
 - Dependent on academic background and interests
 - Could include courses in ANSC, BIOC, STAT, BIOL, ENGL, etc.

Marc L. Bauer, Ph.D.

University of Kentucky, 1996

Research Interests: Nutritional physiology with emphasis on nutrient metabolism and utilization in ruminants

Eric P. Berg, Ph.D.

Purdue University, 1996

Research Interests: Working with swine as a biomedical model for humans to study the impact of food and food combinations on obesity-related metabolic disorders

Erika Berg, Ph.D.

University of Missouri, 2006

Research Interests: The impact of therapeutic horsemanship on human and equine participants. Maternal and environmental influence on equine neonatal physiology

Erin Beyer, Ph.D.

Kansas State University, 2023

Research Interests: Post-harvest effects on eating quality of meat

Chris Byrd, Ph.D.

Purdue University, 2018

Research Interests: Applied ethology, stress physiology, animal welfare science, swine production

Kasey Maddock Carlin, Ph.D.

Iowa State University, 2005

Research Interests: Meat Science with emphasis on physiological and biochemical changes in muscle postmortem on meat quality

Joel S. Caton, Ph.D.

New Mexico State University, 1987

Research Interests: Ruminant nutrition with emphasis on nutrition and reproduction interactions, Forage utilization, digestive physiology and selenium metabolism

Carl Dahlen, Ph.D.

University of Minnesota, 2009

Research Interests: Beef cattle production

Carolyn Hammer, DVM, Ph.D.

Iowa State University, 2003

Research Interests: Equine preventative medicine, growth and development, immunology

Lauren Hanna, Ph.D.

Texas A & M University, 2013

Research Interests: Animal Genetics; Genomics

Travis Hoffman, Ph.D.

Colorado State University, 2015

Research Interest: Sheep production, lamb quality, sheep and goat value, direct meat marketing

Miranda Meehan, Ph.D.

North Dakota State University, 2012

Research Interests: Riparian ecology and management, livestock and wildlife Interactions, Impacts of energy development on livestock production

Lawrence P. Reynolds, Ph.D.

Iowa State University, 1983

Research Interests: Maternal and placental physiology during pregnancy in livestock including cellular and molecular aspects

Guillermo Scaglia, Ph.D.

Texas A&M University, 2002

Research Interests: Ruminant nutrition, plant-animal interface, management of grazing ecosystems, precision livestock farming, sustainability of livestock production systems

Gerald Stokka, DVM, M.S.

Iowa State University, 1982

Research Interests: Immunology; preventive medicine; animal stewardship and well-being

Kendall Swanson, Ph.D.

University of Kentucky, 2001

Research Interests: Ruminant nutrition, energy and nitrogen metabolism, pancreatic function, digestion, and alternative feed ingredients for finishing cattle and over-wintering cows

In addition to the above listed faculty, there are numerous adjunct faculty members who participate in the graduate program.