

ANIMAL SCIENCES, PH.D.

The department emphasizes *in vivo* and *in vitro* studies that probe relationships at a fundamental mechanistic level as well as address current practical issues in animal agriculture. Studies may often employ the use of livestock or laboratory animals, or both, as subjects. Development of an individual course of study is flexible in order to meet the needs of students with varied interests. Graduates find employment in academic teaching and research, in professional veterinary or medical degree programs, in industrial research in the food and feed industries, in laboratory research programs with governmental and international agencies, private corporations, and in industrial or institutional management positions requiring a high level of scientific training.

The program is based in the Animal Sciences Building, which contains facilities for teaching and research, including a Computing and Biometry Laboratory and the Biological and Biomaterials Preparation Imaging and Characterization Facility. Nearby are the Livestock Laboratory, a state-of-the-art facility, and the Muscle Biology Laboratory. Teaching, research, and project assistantships are available to qualified students. Fellowships, scholarships, and traineeship awards are available from federal training programs, research grants, gifts and trusts, and special program funds.

RESEARCH FOCUS AREAS

Students may choose to focus on the areas of: nutrition, rumen microbiology, aquaculture, reproductive physiology–endocrinology, genetics, animal breeding, muscle biology, meat science, cell biology, animal health, immunity and toxicology, or international agriculture. Considerable opportunity for study exists in joint programs with bacteriology, toxicology, biochemistry, the interdepartmental graduate program in nutritional sciences, genetics, endocrinology, reproductive physiology training program, food science, physiology, agricultural and applied economics, biometry, cellular and molecular biology, pharmaceutical sciences, chemical and biological engineering, bio engineering, comparative biosciences, and anatomy.

The area of nutrition involves a joint degree with Animal Sciences and either the Department of Nutritional Sciences or the Department of Biochemistry. Usually, students work with professors from both departments so fundamental concepts complement practical applications. Ruminant nutrition candidates often minor or have a joint major in the Department of Bacteriology. Nutritional research ranges from field studies to laboratory biochemical studies.

The endocrinology–reproductive physiology area ranges from hormonal studies with livestock, primates, and laboratory animals to biochemical studies at the cellular level including stem cell biology. These studies include mechanism of gene action, physiological genetics, *in vitro* maturation, fertilization, embryo development, cloning and gene transfer, neuroendocrinology, and the environmental and genetic control of puberty and postpartum anestrus.

The genetics–animal breeding focus includes a variety of areas from immunogenetics and molecular genetics to quantitative and population genetics. The animal breeding program seeks to develop, evaluate, and apply classical, quantitative, biochemical, and physiological genetics toward improving animal breeding techniques. Studies range from theoretical considerations of quantitative genetics to laboratory

experimentation on genetic controls of growth and reproduction, gene transfer and cloning to field experimentation on producer herds and flocks. Candidates may minor in several areas including genetics, statistics, physiology, or biochemistry.

Meat science and muscle biology studies probe the relationship of muscle structure, composition, and metabolism to growth, the contractile function, and meat quality. Similar studies related to adipose tissue are included. This fundamental research is applied to muscle efficiency and improved retail meat quality and composition.

The area of cellular biology, animal health, immunity, and toxicology includes basic research which seeks to develop an understanding of cellular/subcellular structure and function, cell regulation, and cell–cell interactions. Cell function, as it relates to mechanisms of immunity and the effects of natural and synthetic compounds, forms the basis for investigations using *in vitro* and *in vivo*, whole animal, model systems. Results of fundamental studies are directly applicable and coordinated with ongoing applied research programs in animal and human health.

ADMISSIONS

Please consult the table below for key information about this degree program's admissions requirements. The program may have more detailed admissions requirements, which can be found below the table or on the program's website.

Graduate admissions is a two-step process between academic programs and the Graduate School. **Applicants must meet** the minimum requirements (<https://grad.wisc.edu/apply/requirements/>) **of the Graduate School as well as the program(s).**

Once you have researched the graduate program(s) you are interested in, apply online (<https://grad.wisc.edu/apply/>).

Requirements	Detail
Fall Deadline	August 1
Spring Deadline	December 1
Summer Deadline	May 1
GRE (Graduate Record Examinations)	Required.
English Proficiency Test	Every applicant whose native language is not English or whose undergraduate instruction was not in English must provide an English proficiency test score and meet the Graduate School minimum requirements (https://grad.wisc.edu/apply/requirements/#english-proficiency).
Other Test(s) (e.g., GMAT, MCAT)	n/a
Letters of Recommendation Required	3

Students with satisfactory undergraduate training in any biological science including emphasis on basic science courses will have suitable backgrounds for graduate studies in Animal Sciences. Typically students admitted to the program have GPAs of 3.2 or higher; candidates with a lower GPA may be considered for admission under special circumstances. Admission decisions are based on academic record, GRE scores, three letters of recommendation, and Test of English as a Foreign Language (TOEFL) or International English Language Testing System (IELTS), if applicable.

Students are admitted to the program if a faculty member agrees to accept the candidate into his or her research group and to provide laboratory/desk space and research support, and upon the approval of the Animal Sciences Graduate Admissions Committee and the Graduate School. The faculty member also makes the decision of whether or not to offer a research assistantship to the candidate. International candidates in the Master of Science program rarely receive financial support.

FUNDING

GRADUATE SCHOOL RESOURCES

Resources to help you afford graduate study might include assistantships, fellowships, traineeships, and financial aid. Further funding information (<https://grad.wisc.edu/funding/>) is available from the Graduate School. Be sure to check with your program for individual policies and restrictions related to funding.

PROGRAM RESOURCES

Financial assistance may be available to qualified individuals in the form of research assistantships, teaching assistantships, or fellowships. Funding does not come from the department, but from the faculty member agreeing to advise the new student; therefore students join labs directly instead of doing rotations. Funding is awarded on a competitive basis and may be renewed annually pending satisfactory progress. Terms of these appointments are initially defined in the letter of offer to the student.

REQUIREMENTS

MINIMUM GRADUATE SCHOOL REQUIREMENTS

Review the Graduate School minimum academic progress and degree requirements (<http://guide.wisc.edu/graduate/#policiesandrequirements>), in addition to the program requirements listed below.

MAJOR REQUIREMENTS

MODE OF INSTRUCTION

Face to Face	Evening/ Weekend	Online	Hybrid	Accelerated
Yes	No	No	No	No

Mode of Instruction Definitions

Accelerated: Accelerated programs are offered at a fast pace that condenses the time to completion. Students are able to complete a program with minimal disruptions to careers and other commitments.

Evening/Weekend: Courses meet on the UW–Madison campus only in evenings and/or on weekends to accommodate typical business schedules. Students have the advantages of face-to-face courses with the flexibility to keep work and other life commitments.

Face-to-Face: Courses typically meet during weekdays on the UW-Madison Campus.

Hybrid: These programs combine face-to-face and online learning formats. Contact the program for more specific information.

Online: These programs are offered 100% online. Some programs may require an on-campus orientation or residency experience, but the courses will be facilitated in an online format.

CURRICULAR REQUIREMENTS

Requirements Detail	
Minimum Credit Requirement	51 credits
Minimum Residence Credit Requirement	32 credits
Minimum Graduate Coursework Requirement	Half of degree coursework (26 credits out of 51 total credits) must be completed graduate-level coursework; courses with the Graduate Level Coursework attribute are identified and searchable in the university's Course Guide (https://registrar.wisc.edu/course-guide (https://registrar.wisc.edu/course-guide/)).
Overall Graduate GPA Requirement	3.00 GPA required.
Other Grade Requirements	The Graduate School requires an average grade of B or better in all coursework (300 or above, not including research credits) taken as a graduate student unless conditions for probationary status require higher grades. Grades of Incomplete are considered to be unsatisfactory if they are not removed during the next enrolled semester.
Assessments and Examinations	The original research conducted by the candidate must be summarized in a thesis. A final examination will be given after the completion of the thesis. The thesis must be submitted to the examining committee two weeks before the examination. The candidate is required to present an exit seminar on their dissertation research and to subsequently defend the thesis orally. The thesis must be acceptable from both scientific and literary standpoints. The mentoring committee administers the thesis defense. Deposit of the doctoral dissertation in the Graduate School is required.
Language Requirements	Language requirements are determined on an individual basis with the major professor and will depend on the area of concentration within the department.
Doctoral Minor/Breadth Requirements	The Animal Sciences program requires Ph.D. students to complete a minor.

REQUIRED COURSES

All Animal Sciences Ph.D. students must meet with their research committee during their first year to complete their Certification Form (<http://www.ansci.wisc.edu/cgstudentt.html>). Once the committee has approved the certification paperwork the student must turn in the signed copy to the Graduate Coordinator so that it may be reviewed and approved by the graduate chair. The certification paperwork must be approved before a student can request their prelim warrant. Students should meet with their committee once per year. Any changes to the certification paperwork must be communicated to the graduate coordinator and approved by the graduate chair.

Students graduating with a Ph.D. in Animal Sciences are expected to have core education in the following areas:

- Physiology/endocrinology/reproduction
- Biochemistry/nutrition
- Genetics/breeding
- Food science/meat science/ food safety/microbiology
- STAT/F&W ECOL/HORT 571 Statistical Methods for Bioscience I, STAT/F&W ECOL/HORT 572 Statistical Methods for Bioscience II, or equivalent
- A course in ethics
- Teaching practicum with Delta or MIU Workshop training.

Courses taken prior to entering the Animal Sciences program will be considered as a substitute.

Seminar Requirement

The Animal Sciences Graduate seminar features outside speakers, UW faculty, and Animal Sciences graduate students presenting their research or defending their thesis. This course is held on Tuesday mornings during the fall semester from 11 a.m. to noon. Attendance is required at this seminar series by all Animal Sciences graduate students. Ph.D. students are required to register for the AN SCI 875 Special Topics (Animal Science Seminar) for credit twice. Although attendance is required, registering for the seminar for credit is done the semester a student presents.

Teaching Requirement

All students in the Animal Sciences Ph.D. program are required to complete a Teaching Practicum, usually AN SCI 799 Practicum in Animal Sciences Teaching. Each student is expected to work with the faculty advisor to identify an opportunity within the department for the student to engage in teaching. This requirement is broadly defined, and could include assisting an Animal Sciences faculty member with classroom teaching or TA'ing in a course outside of the department.

Enrollment Requirement

The program requires all funded students to be enrolled full time. For M.S. students this means at least 8 credits in the fall and spring term and at least 2 credits in the summer term. Students funded by another program should check with the payroll and benefits coordinator of that department to learn their requirements for enrollment. Unfunded students should follow the Graduate School's rules on enrollment (<https://grad.wisc.edu/documents/enrollment-requirements/>).

The remainder of the course requirements for the Ph.D. in Animal Sciences will be selected to meet the student's specific needs and to ensure breadth and depth as determined through consultation with his/her major professor and members of their committee.

Animal Nutrition Track ^{1,2}

Code	Title	Credits
Recommended courses for the Ph.D. degree:		
AN SCI/ DY SCI 824 & AN SCI/ DY SCI 825	Ruminant Nutritional Physiology I and Ruminant Nutritional Physiology II	
AN SCI/ DY SCI 931	Seminar in Animal Nutrition	
NUTR SCI/ BIOCHEM 619	Advanced Nutrition: Intermediary Metabolism of Macronutrients	
NUTR SCI 623	Advanced Nutrition: Minerals	

NUTR SCI 627	Advanced Nutrition: Vitamins
COMP BIO 506	Veterinary Physiology B
COMP BIO 551	Veterinary Physiology A

¹ These tracks are internal to the program and represent different pathways a student can follow to earn this degree. Track names do not appear in the Graduate School admissions application, and they will not appear on the transcript.

² These degree programs are supported by the Animal Nutrition Emphasis Group in the IGPNS program (<https://nutrisci.wisc.edu/graduate/m-s-ph-d/animal-nutrition-emphasis-group/>). Animal Sciences faculty members also have the option of offering an M.S. or Ph.D. degree in Nutritional Sciences as members of the Animal Nutrition Emphasis Group in IGPNS.

Animal Breeding & Genetics Track ¹

Code	Title	Credits
AN SCI/DY SCI/ GENETICS 951	Seminar in Animal Breeding (every semester)	
GENETICS 466	Principles of Genetics	
STAT/F&W ECOL/ HORT 571 & STAT/ F&W ECOL/ HORT 572	Statistical Methods for Bioscience I and Statistical Methods for Bioscience II	

PhD students with a quantitative bent are also required to complete:

AN SCI 610	Quantitative Genetics
AN SCI 875	Special Topics (Linear Models for Quantitative Genetics or Molecular Genetics for Animal Breeding)

¹ These tracks are internal to the program and represent different pathways a student can follow to earn this degree. Track names do not appear in the Graduate School admissions application, and they will not appear on the transcript.

Endocrinology & Reproductive Physiology Track ¹

Code	Title	Credits
Select one course from each section A, B and C:		
A.		
STAT/F&W ECOL/ HORT 571	Statistical Methods for Bioscience I	
B.		
AN SCI 875	Special Topics (Endocrine Physiology)	
BIOCHEM/ PHMCOL-M/ ZOOLOGY 630	Cellular Signal Transduction Mechanisms	
C.		
BIOCHEM 507 & BIOCHEM 508	General Biochemistry I and General Biochemistry II	
BMOLCHEM 503	Human Biochemistry	
D. Advanced Biochemistry		
E.		
AN SCI/ OBS&GYN/ ZOOLOGY 954	Seminar in Endocrinology-Reproductive Physiology	

F. Technical Writing

G. Advanced Statistics

H. Advanced Endocrinology

I. Advanced Reproduction

J. Advanced Topic Course. Select one of the following:

Gamete and Embryo Biology

Reproductive Patterns

Selected Topics in Endocrinology-Reproductive Physiology

Pregnancy, Parturition, and Lactation

¹ These tracks are internal to the program and represent different pathways a student can follow to earn this degree. Track names do not appear in the Graduate School admissions application, and they will not appear on the transcript.

Meat Science & Muscle Biology Track ¹

Code	Title	Credits
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Students should choose courses from the following list in consultation with their advisor:

AN SCI/ FOOD SCI 305	Introduction to Meat Science and Technology ²	
AN SCI 508	Poultry Products Technology ²	
AN SCI/ FOOD SCI 515	Commercial Meat Processing ²	
AN SCI/ FOOD SCI 710	Chemistry of the Food Lipids	
BIOCHEM 501	Introduction to Biochemistry	
BIOCHEM 507	General Biochemistry I	
BIOCHEM 508	General Biochemistry II	
BIOCHEM/ NUTR SCI 510	Nutritional Biochemistry and Metabolism	
BIOCHEM 550	Topics in Medical Biochemistry	
BIOCHEM 601	Protein and Enzyme Structure and Function	
BIOCHEM/ GENETICS/ MD GENET 620	Eukaryotic Molecular Biology	
BIOCHEM 624	Mechanisms of Enzyme Action	
BIOCHEM/ PHMCOL-M/ ZOOLOGY 630	Cellular Signal Transduction Mechanisms	
BIOCHEM 636	Macromolecular Crystallography and Dynamics	
CHEM 565	Biophysical Chemistry	
CHEM 621	Instrumental Analysis	
FOOD SCI 410	Food Chemistry	
FOOD SCI 412	Food Analysis	
FOOD SCI 432	Principles of Food Preservation	
FOOD SCI 440	Principles of Food Engineering	
FOOD SCI 514	Integrated Food Functionality	
FOOD SCI 532	Integrated Food Manufacturing	
FOOD SCI 550	Fermented Foods and Beverages	
FOOD SCI 610	Food Proteins	
FOOD SCI/ BSE 642	Food and Pharmaceutical Separations	

MICROBIO/ Food Microbiology Laboratory

FOOD SCI 324

MICROBIO/ Food Microbiology

FOOD SCI 325

MICROBIO 526 Physiology of Microorganisms

MICROBIO 527 Advanced Laboratory Techniques in Microbiology

MICROBIO 607 Advanced Microbial Genetics

M M & I/PATH-
BIO 528 ImmunologyPATH-BIO/
HORT 500 Molecular Biology TechniquesSTAT/F&W ECOL/
HORT 571 Statistical Methods for Bioscience I ³STAT/F&W ECOL/
HORT 572 Statistical Methods for Bioscience II

ZOOLOGY 430 Comparative Anatomy of Vertebrates

ZOOLOGY 470 Introduction to Animal Development

ZOOLOGY 570 Cell Biology

ZOOLOGY 611 Comparative and Evolutionary Physiology

ZOOLOGY 612 Comparative Physiology Laboratory

¹ These tracks are internal to the program and represent different pathways a student can follow to earn this degree. Track names do not appear in the Graduate School admissions application, and they will not appear on the transcript.

² Only one course from this group can be counted towards the credit load required in this section.

³ Required if an equivalent statistics course was not taken previously.

POLICIES**GRADUATE SCHOOL POLICIES**

The Graduate School's Academic Policies and Procedures (<https://grad.wisc.edu/acadpolicy/>) provide essential information regarding general university policies. Program authority to set degree policies beyond the minimum required by the Graduate School lies with the degree program faculty. Policies set by the academic degree program can be found below.

MAJOR-SPECIFIC POLICIES**PRIOR COURSEWORK****Graduate Work from Other Institutions**

For well-prepared advanced students, the program may accept prior graduate coursework from other institutions toward the minimum graduate degree credit and minimum graduate coursework (50%) requirement. The minimum graduate residence credit requirement can be satisfied only with courses taken as a graduate student at UW–Madison.

UW–Madison Undergraduate

For well-prepared advanced students, the program may decide to accept up to 7 credits numbered 300 or above completed at UW–Madison toward fulfillment of minimum degree and minor credit requirements.

This work would not be allowed to count toward the 50% graduate coursework minimum unless taken at the 700 level or above.

UW–Madison University Special

The program may decide to accept up to 15 University Special student credits as fulfillment of the minimum graduate residence, graduate degree, or minor credit requirements on occasion as an exception (on a case-by-case basis).

UW–Madison coursework taken as a University Special student would not be allowed to count toward the 50% graduate coursework minimum unless taken at the 700 level or above.

PROBATION

The Graduate School regularly reviews the record of any student who earned grades of BC, C, D, F, or Incomplete in a graduate course (300 or above), or grade of U in research credits. This review could result in academic probation with a hold on future enrollment or in being suspended from the Graduate School.

ADVISOR / COMMITTEE

Every graduate student is required to have an advisor. To ensure that students are making satisfactory progress toward a degree, the Graduate School expects them to meet with their committee on a yearly basis.

Your committee members advise and evaluate satisfactory progress, administer your final oral examination, evaluate your thesis, and sign your degree warrant. Your advisor chairs the committee. Ph.D. thesis committees must have at least five members representing more than one graduate program. Your committee must include three faculty members from the Animal Sciences program, and no more than four, and at least one faculty member outside the department at arm's length to the project.

CREDITS PER TERM ALLOWED

15 credits

TIME CONSTRAINTS

Doctoral degree students who have been absent for ten or more consecutive years lose all credits that they have earned before their absence. Individual programs may count the coursework students completed prior to their absence for meeting program requirements; that coursework may not count toward Graduate School credit requirements.

A candidate for a doctoral degree who fails to take the final oral examination and deposit the dissertation within five years after passing the preliminary examination may be required to take another preliminary examination and to be admitted to candidacy a second time.

GRIEVANCES AND APPEALS

These resources may be helpful in addressing your concerns:

- Bias or Hate Reporting (<https://doso.students.wisc.edu/bias-or-hate-reporting/>)
- Graduate Assistantship Policies and Procedures (<https://hr.wisc.edu/policies/gapp/#grievance-procedure>)
- Hostile and Intimidating Behavior Policies and Procedures (<https://hr.wisc.edu/hib/>)
 - Office of the Provost for Faculty and Staff Affairs (<https://facstaff.provost.wisc.edu/>)
- Dean of Students Office (<https://doso.students.wisc.edu/>) (for all students to seek grievance assistance and support)

- Employee Assistance (<http://www.eao.wisc.edu/>) (for personal counseling and workplace consultation around communication and conflict involving graduate assistants and other employees, post-doctoral students, faculty and staff)
- Employee Disability Resource Office (<https://employee disabilities.wisc.edu/>) (for qualified employees or applicants with disabilities to have equal employment opportunities)
- Graduate School (<https://grad.wisc.edu/>) (for informal advice at any level of review and for official appeals of program/departmental or school/college grievance decisions)
- Office of Compliance (<https://compliance.wisc.edu/>) (for class harassment and discrimination, including sexual harassment and sexual violence)
- Office of Student Conduct and Community Standards (<https://conduct.students.wisc.edu/>) (for conflicts involving students)
- Ombuds Office for Faculty and Staff (<http://www.ombuds.wisc.edu/>) (for employed graduate students and post-docs, as well as faculty and staff)
- Title IX (<https://compliance.wisc.edu/titleix/>) (for concerns about discrimination)

College of Agricultural and Life Sciences: Grievance Policy

In the College of Agricultural and Life Sciences (CALs), any student who feels unfairly treated by a member of the CALs faculty or staff has the right to complain about the treatment and to receive a prompt hearing. Some complaints may arise from misunderstandings or communication breakdowns and be easily resolved; others may require formal action. Complaints may concern any matter of perceived unfairness.

To ensure a prompt and fair hearing of any complaint, and to protect the rights of both the person complaining and the person at whom the complaint is directed, the following procedures are used in the College of Agricultural and Life Sciences. Any student, undergraduate or graduate, may use these procedures, except employees whose complaints are covered under other campus policies.

1. The student should first talk with the person at whom the complaint is directed. Most issues can be settled at this level. Others may be resolved by established departmental procedures.
2. If the student is unsatisfied, and the complaint involves any unit outside CALs, the student should seek the advice of the dean or director of that unit to determine how to proceed.
 - a. If the complaint involves an academic department in CALs the student should proceed in accordance with item 3 below.
 - b. If the grievance involves a unit in CALs that is not an academic department, the student should proceed in accordance with item 4 below.
3. The student should contact the department's grievance advisor within 120 calendar days of the alleged unfair treatment. The departmental administrator can provide this person's name. The grievance advisor will attempt to resolve the problem informally within 10 working days of receiving the complaint, in discussions with the student and the person at whom the complaint is directed.
 - a. If informal mediation fails, the student can submit the grievance in writing to the grievance advisor within 10 working days of the date the student is informed of the failure of the mediation attempt by the grievance advisor. The grievance advisor will provide a copy to the person at whom the grievance is directed.
 - b. The grievance advisor will refer the complaint to a department committee that will obtain a written response from the person at

whom the complaint is directed, providing a copy to the student. Either party may request a hearing before the committee. The grievance advisor will provide both parties a written decision within 20 working days from the date of receipt of the written complaint.

- c. If the grievance involves the department chairperson, the grievance advisor or a member of the grievance committee, these persons may not participate in the review.
 - d. If not satisfied with departmental action, either party has 10 working days from the date of notification of the departmental committee action to file a written appeal to the CALS Equity and Diversity Committee. A subcommittee of this committee will make a preliminary judgement as to whether the case merits further investigation and review. If the subcommittee unanimously determines that the case does not merit further investigation and review, its decision is final. If one or more members of the subcommittee determine that the case does merit further investigation and review, the subcommittee will investigate and seek to resolve the dispute through mediation. If this mediation attempt fails, the subcommittee will bring the case to the full committee. The committee may seek additional information from the parties or hold a hearing. The committee will present a written recommendation to the dean who will provide a final decision within 20 working days of receipt of the committee recommendation.
4. If the alleged unfair treatment occurs in a CALS unit that is not an academic department, the student should, within 120 calendar days of the alleged incident, take his/her grievance directly to the Associate Dean of Academic Affairs. The dean will attempt to resolve the problem informally within 10 working days of receiving the complaint. If this mediation attempt does not succeed the student may file a written complaint with the dean who will refer it to the CALS Equity and Diversity Committee. The committee will seek a written response from the person at whom the complaint is directed, subsequently following other steps delineated in item 3d above.

OTHER

RAs, the most common appointment in this department, are hired for 12 months with compensation set on a university-wide basis. The department has a few TAs who assist in instruction, preparing materials, directing labs, grading lab exercises and exams, etc. Special fellowships and scholarships are available for outstanding students. Application instructions may be obtained from the Graduate School website. A graduate student may be employed to assist professors not directly associated with their thesis.

PROFESSIONAL DEVELOPMENT

GRADUATE SCHOOL RESOURCES

Take advantage of the Graduate School's professional development resources (<https://grad.wisc.edu/pd/>) to build skills, thrive academically, and launch your career.

PROGRAM RESOURCES

The Animal Sciences graduate programs encourage students to develop Individual Development Plans (<https://grad.wisc.edu/pd/idp/>) in collaboration with their major advisor to facilitate professional development. Besides the extensive opportunities offered across the campus at large, students in the animal sciences program also benefit

from activities and programs provided by the Animal Science Graduate Student Association, a student-led organization for graduate students at UW–Madison who are interested in animal and dairy science.

LEARNING OUTCOMES

1. Articulates research problems, potentials, and limits with respect to theory, knowledge, or practice within the field of study.
2. Formulates ideas, concepts, designs, and/or techniques beyond the current boundaries of knowledge within the field of study.
3. Creates research, scholarship, or performance that makes a substantive contribution.
4. Demonstrates breadth within their learning experiences.
5. Advances contributions of the field of study to society.
6. Communicates complex ideas in a clear and understandable manner.
7. Fosters ethical and professional conduct.

PEOPLE

DEPARTMENT OF ANIMAL AND DAIRY SCIENCES

Professors

Weigel (Chair), Khatib (Associate Chair), Cabrera, Claus, Crenshaw, Fricke, Kirkpatrick, Parrish, Reed, Richards, Rosa, Sindelar, Wattiaux, Wiltbank

Associate Professors

Hernandez, White

Assistant Professors

Adcock, Arriola Apelo, Dorea, Ferraretto, Guo, Laporta, Leone, Peñagaricano, Shanmuganayagam, Van Os

Instructors/Lecturers

Halbach, Kean, O'Rourke, Ronk, Williams

Student Services Coordinator

Liv Sandberg

Graduate Coordinator

Theresa Pillar