

Career Opportunities *with a Bachelor of Science in Animal and Dairy Sciences*



Overview

Earning a bachelor of science in the animal and dairy sciences (ADS) equips students to apply their knowledge in a variety of animal science-related jobs. Graduates of ADS can use their knowledge in the selection, breeding, nutrition, reproduction, growth, and management of livestock and companion animals. Furthermore, some professionals may choose to be involved in the marketing, processing, and merchandising of livestock or the growth of scientific knowledge through the pursuit of graduate degrees (MS, PhD, DVM).

At Mississippi State University, the Animal and Dairy Sciences major requires core courses such as General and Organic Chemistry, Microbiology, Introduction to Animal and Dairy Sciences, Principles of Animal Nutrition, Animal Breeding, Physiology of Reproduction, and Livestock Management Practices. The department's goal is to give students a well-rounded, hands-on education of general animal sciences and a more in-depth knowledge of the various species of livestock. Students have three concentrations in the ADS major to choose from:

1. Science/Veterinary Science
2. Business and Industry
3. Production Management

Graduates of ADS have many career paths they can choose in business, industry, government, education, and research.

Earning an ADS degree equips students to have the skills necessary to be successful in finding and securing an occupation after graduation. Here are some skills students develop during their studies in ADS:

- ✓ Critical thinking
- ✓ Problem solving
- ✓ Teamwork
- ✓ Information handling and organization
- ✓ Handling and operation of scientific equipment
- ✓ Animal management
- ✓ Animal industry knowledge
- ✓ Animal biology and science knowledge
- ✓ Hands-on experience with domestic livestock animals

The following is a summary of each concentration available in ADS and career options available to those students upon graduation.

Science/Veterinary Science Concentration

Science/Veterinary Science is for students who wish to develop a greater understanding of the various aspects of animal physiology (nutrition, reproduction, genetics, etc.) and how these fields of study impact the beef, companion animal, dairy, horse, sheep, and swine industries. This concentration will provide a foundation in animal physiology, nutrition, genetics, health, and management. Since the Animal and Dairy Sciences department and the

College of Veterinary Medicine are both located in the Wise Center, students have the chance to work at the veterinary college and gain experience working in a clinical setting. Specific courses required for the Science/Veterinary Science concentration include Immunology and Anatomy and Physiology.

Career Choices for Science/Veterinary Science Concentration Graduates

- ✓ Veterinarian
- ✓ Veterinary Technician
- ✓ Animal Breeding Technician
- ✓ Laboratory Research Associate
- ✓ Immunologist
- ✓ Biomedical Researcher
- ✓ Pharmaceutical Salesperson
- ✓ Cellular and Molecular Biologist
- ✓ Pathologist
- ✓ Endocrinologist
- ✓ Physiologist
- ✓ Theriogenologist

Business & Industry and Production Management Concentrations

Through the Business & Industry Concentration, as well as the Production Management Concentration, students learn the underlying principles of biology, physiology, and nutrition that drive animal growth and development. Students have flexibility in these concentrations. Each student is different and has unique career goals, so students in these two concentrations are able to design their academic programs with courses that relate to their specific career aspirations. Students who are able to tailor classes to meet their career goals are self-motivated to excel in the classroom. As the global population continues to grow, those involved in the animal sciences must increase animal production to meet consumer demands for food and fiber.

The following is a summary of various animal science-related areas in which students may decide to focus their coursework to further their career opportunities after graduation.

Meat Science and Production

Students who want to pursue a career in meat science are able to connect scientific principles to the end-product through hands-on experiences. Students gain practical experience in live animal, carcass, and genetic assessment, as well as cellular effects on animal growth and development. Furthermore, students gain insight into the relationships between on-farm, packing, and retail segments and how animal

production is driven to produce a high-value, high-quality product.

Students focused on animal production develop an understanding and practicality through hands-on learning that enables them to be marketable in a variety of professions upon graduation. Students at MSU have a unique advantage because of the on-campus harvest facility located in Ballew Hall. They also have access to livestock at the H.H. Leveck Animal Research Center (South Farm) and Bearden Dairy Research Unit. Jobs with the various livestock units are available for students who desire to learn more about the animals they work with while in school. The American Meat Science Association Career Center is a good source of jobs for meat animal science graduates (careers.meatscience.org/). Animal production graduates can search for jobs at www.farmjobsearch.com/, www.animalsciencejobs.com/, and www.agcareers.com.

Career Choices for ADS Graduates Interested in Meat Science

Meat Processor

- ✓ Food Safety Inspector
- ✓ Consultant
- ✓ New Product Developer
- ✓ Quality Assurance Inspector
- ✓ Researcher and Developer
- ✓ Chef
- ✓ Distribution Manager
- ✓ Engineer
- ✓ Public Relations Specialist
- ✓ Meat Science Researcher
- ✓ Processing Plant Manager
- ✓ Feed or Pharmaceutical Salesperson
- ✓ Farm or Ranch Manager
- ✓ Agriculture Loan Officer
- ✓ Breed Association Representative
- ✓ Livestock Production Manager
- ✓ Research Technician
- ✓ Instructor
- ✓ Livestock Marketing Specialist
- ✓ Feedlot Operator

Dairy Science and Production

Dairy Science and Production focuses on the application of biological and chemical principles to the production and management of dairy animals and the production and handling of dairy products. The Bearden Dairy Research Center (MSU dairy farm) allows students a one-of-a-kind hands-on environment in which to learn dairy management practices firsthand. The MSU dairy research herd consists of Holstein and Jersey cows. The herd produces more

than 3 million pounds of milk annually (about 369,000 gallons) used for fluid milk and cheese production. Dairy products are sold at the Mississippi Agricultural and Forestry Experiment Station Sales Store. Courses required specifically for this concentration include Dairy Farm Management, Dairy Cattle Appraisal, and Physiology of Lactation. The Federation of Animal Science Societies is a good source of jobs for dairy science graduates (www.fass.org/jobs/).

Career Choices for ADS Graduates Interested in Dairy Science and Production

- ✓ Dairy Herd Manager/Owner
- ✓ Milk Inspector
- ✓ Dairy Records Association Manager
- ✓ Nutrition Consultant/Representative
- ✓ Sire Analyst
- ✓ Public Relations Specialist
- ✓ Pharmaceutical Salesperson
- ✓ Breed Association Marketer
- ✓ Dairy Plant Manager
- ✓ Dairy Breeding Program Specialist
- ✓ Dairy Calf/Heifer Production Specialist
- ✓ Dairy Cattle Researcher

Equine Science and Production

Equine Science and Production majors learn about equine production and training, and management of horse farms. Equine students have the opportunity to interact with faculty involved in equine programming across the state. Students can enroll in Introduction to Horsemanship, Advanced Horsemanship, Advanced Horsemanship II, and Equine Assisted Therapy. For students who desire more hands-on and management activities, classes are available in Equine Behavior & Training, Equine Reproduction, and Horse Management. To round out the equine experience, equine courses such as Equine Conformation & Performance Evaluation, Advanced Equine Evaluation, and Equine Exercise Physiology are available for the equine student's selection. The Equine Science Society is a good source of jobs for equine science graduates (www.equinescience.org/jobs/).

Career Choices for ADS Graduates Interested in Equine Science and Production

- ✓ Race Horse Industry Rep
- ✓ Public Relations Specialist
- ✓ Equine Behaviorist
- ✓ Riding Instructor
- ✓ Feed Salesperson
- ✓ Horse Trainer
- ✓ Pedigree Specialist

- ✓ Broodmare Reproduction Manager
- ✓ Equine Sports Medicine Specialist
- ✓ Equine Rehabilitation Specialist
- ✓ Bloodstock Agent
- ✓ Embryo Transfer Technician
- ✓ Equine Sales Manager
- ✓ Therapeutic Riding Instructor
- ✓ Equine Researcher
- ✓ Equine Breed Association Rep

Other Animal Science-Related Occupations

While many of the career choices listed above are specific to those concentrations, there are many careers that any ADS graduate can pursue. Some may require additional education or training in another field such as Journalism, Photography, or Graphic Design to work for an agriculture-based business. Other careers such as financial analyst, housing and environmental quality specialist, and livestock insurance representative may require a minor in Accounting or Agribusiness.

Some examples of careers that any ADS graduate may pursue with additional graduate education include Extension agent, Extension specialist, research scientist, and other jobs in academia. For students who have an interest in animal behavior and welfare, a career as a lawyer focused in agriculture policy, an animal care research technologist, or an animal control officer may be a good fit. Careers for those interested in animal breeding and genetics include breed association representative, dairy industry breeding consultant, artificial insemination company representative, or private breeder in industry employee. For those interested in the beef cattle industry, a career as a beef nutrition sales consultant, beef cattle Extension specialist, consultant, or web designer are potential career options. Careers for those interested in nutrition include digestive disease research associate, feed mill manager/ration formulator, pet food scientist, or animal nutrition account manager.

For a more extensive list of possible careers and job titles, visit the American Society of Animal Science website (www.asas.org) and follow the link to the Career Center. Also search the websites listed earlier in this publication to find job opportunities. Students are encouraged to visit the MSU Career Center (www.career.msstate.edu/students/) to consult about internship and career opportunities. Another good source of knowledge related to animal science careers would be faculty in the ADS department.

Summary

A bachelor of science in ADS at MSU provides students with many skills to be successful in securing animal science-related jobs upon graduation. Depending on the interests of the student, their coursework and educational experiences can be tailored to maximize the opportunities they will have to put them in the best possible situation after graduation. Whether students desire to return to the family farm, pursue a graduate degree, or work in any segment of the livestock industry, they will be equipped for their next career step with a bachelor of science in ADS. To obtain additional information on the ADS department or our educational programs, contact Jessica Graves, undergraduate coordinator, at jgraves@ads.msstate.edu. For general information about the Department of Animal and Dairy Sciences, visit www.ads.msstate.edu.

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