

# DEPARTMENT OF ANIMAL, VETERINARY AND FOOD SCIENCES

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Animal agriculture has a major role in providing the supply of high-quality food, not only for the people of the United States, but also for those of other nations. Food and fiber obtained from animals include meat, milk, eggs, wool, and many by-products. Knowledge and skills resulting from a college education in this field will permit the graduate to contribute to improved production and health of the nation's livestock including beef, sheep, dairy, swine, poultry, horses, and companion animals.

In addition to classrooms and laboratories located in the Agricultural Science Building, the department's facilities include production centers for dairy, beef, and sheep, as well as a meats laboratory and livestock judging pavilion. Several breeds of animals are maintained for instructional purposes. The academic program is designed to prepare students for a variety of important and rewarding career opportunities. For more specific information, get in touch with the department head (208-885-9849).

To prepare students for the varied types of occupations available in animal agriculture and food science, the Department of Animal, Veterinary and Food Sciences offers a Bachelor of Science degree in Animal Science with four options: Business, Dairy Science, Production, and Pre-veterinary. The Bachelor of Science degree in Food Science offers three options: Food Science, Dairy Foods Management, and Fermentation Science. Each of these majors, while providing the students with a sound background in animal and food biology and engineering of food, has its separate emphasis on complementary academic training. One of the strongest features of these programs is the flexibility provided.

Each major permits the student to plan the precise course of study that will best prepare him or her for the area of work that he or she desires to enter. The department also offers minors in Animal Science or Food Science for students desiring a background in animal agriculture or food science to complement their major field of study.

## Animal Science

The B.S.A.V.S. Business Option is designed for students who desire a career as entry-level into management positions in livestock-related industries. This option is oriented toward business, economics, and agricultural economics, in addition to a sound background in production animal agriculture. With appropriate choices of elective courses, students can also prepare themselves for positions with financial institutions involved with the animal agriculture industry.

An option in Dairy Science (B.S.A.V.S.) helps prepare students for careers in one of Idaho's fastest growing industries. This option offers introductory and advanced course work and hands-on training at a modern dairy center. Specific courses are taught in dairy nutrition, forage crops, dairy reproduction and physiology, dairy cattle evaluation, dairy products and processing, physiology of lactation, herd health management, agriculture power and machines, and farm management. Students are eligible to participate in the Cooperative of University Dairy Students (CUDS) program.

The option in Production (B.S.A.V.S.) is designed for students who desire to pursue a career in livestock production, graduate work in one of the varied disciplines in animal sciences (nutrition, breeding, physiology, growth, endocrinology, meats, etc.), or for employment by companies that require intensive training in animal biology. This option is also excellent training for those interested in Cooperative Extension.

The Pre-Veterinary Option (B.S.A.V.S.) is offered for students interested in veterinary school or a graduate program involving any of the disciplines of animal biology. It is typically a 4-year program of study, but for a few students, the 3+1 program will be of interest. If, after successful completion of 99 credits of required courses (the first 3 years of the 4-year program), the student is admitted to a recognized college of veterinary medicine and completes the first year of veterinary school (equivalent of at least 32 credits), that first year will constitute the senior year at U of I and the student will be awarded a B.S.A.V.S. at U of I.

## Food Science

The School of Food Science, jointly administered by the University of Idaho and Washington State University, offers courses of study in the undergraduate major field of food science. Students complete a prescribed course of study leading to the Bachelor of Science in Food Science with options in Food Science, Dairy Foods Management, and Fermentation Science.

Food science is the scientific discipline that supports the food and beverage manufacturing industry. It is a multidisciplinary science that applies biology, chemistry, physics, engineering, nutrition, and other sciences to improve the safety and quality of food products; create healthy food products; and design new, safer, and more sustainable food preservation methods. Food scientists strive to improve the quality and nutrition of foods through traditional and emerging preservation technologies. They conduct research to mitigate chemical and microbial risk factors in foods and to understand the causes of food deterioration and spoilage. Employed around the world by large and small food processing companies, food ingredient suppliers, food quality assurance and testing labs, federal and state governmental agencies, and academia, food scientists also work with existing and emerging companies preparing organic, natural, kosher, and halal food products.

Gaining a food science education provides students with a challenging career not only in the Pacific Northwest, but also nationally and internationally. Food science graduates begin careers in food plant operations, food quality assurance, food safety microbiology, technical sales, food product development, regulatory affairs, or research in the food/allied industries or federal/state regulatory agencies. Food science students learn to convert raw agricultural commodities into high quality, safe, and nutritious food products - the complete farm-to-table process. As part of the B.S. degree, students receive training and learn skills relative to the preservation, safety, risk management, nutrition, chemistry, and sensory evaluation of foods. The food processing industry is continually challenged to improve food quality, as well as enhance the sustainable development of new foods, to better meet consumer demands and the nutritional needs of the world. In the first two years of college, students enroll in science courses and complete most general university requirements. (Note: many of the general university requirements and introductory science and math courses can be completed at community colleges.)

In the junior and senior years, the curriculum emphasizes courses in food processing, food chemistry and analysis, food microbiology, sensory evaluation, and other specialized areas such as the processing of cereal,

dairy, wine, fruit, and vegetable products. Students with specific interests can gain additional education by taking elective courses, participating in internships with food companies, joining student clubs or competitions, or conducting a research project with a faculty member. Contact the Food Science advisor for more information.

A student graduating with a B.S. in Food Science should be able to: 1. Demonstrate a level of comprehension of Food Science concepts and analyses equivalent to or greater than that required by the Institute of Food Technologists Core Competencies Guidelines. 2. Critically evaluate and summarize a food science issue or problem. 3. Apply critical thinking and problem-solving skills to address current challenges in the food industry. 4. Communicate effectively in both written and oral format with an audience possessing varying degrees of food science knowledge.

The Department of Animal, Veterinary and Food Sciences offers a graduate program leading to the Master of Science degree with a major in Animal Science or Food Science and a Doctor of Philosophy degree with a major in Animal Physiology or Food Science. The department offers areas of specialization in nutrition, reproductive physiology, embryo physiology, animal growth and development, meat science, and animal diseases with orientation towards beef cattle, dairy cattle, horses, sheep, and fish. The department also participates in university interdisciplinary programs in reproductive biology and molecular and agricultural genetic engineering.

Graduate work in the department is designed to prepare the student for work in research, extension, teaching, and industry. Thesis projects are diverse in scope and range in design from studying fundamental biological questions to application of scientific knowledge to animal production and management and food processing. Facilities available for graduate student research include herds and flocks of major livestock breeds, ruminant nutrition and physiology laboratories, biomedical research laboratories, a university-operated dairy, a meat science laboratory, and a 500-head experimental feedlot. Active cooperation is maintained with federal research agencies located on and off campus.

Graduate student assistantships are available on a competitive basis each year. Inquiries should be directed to the department's graduate program coordinator.

## Majors

- Animal and Veterinary Science (B.S.A.V.S.) (<https://catalog.uidaho.edu/colleges-related-units/agricultural-life-sciences/animal-veterinary-food-sciences/animal-veterinary-science-bsavs/>)
- Food Science (B.S.F.S.) (<https://catalog.uidaho.edu/colleges-related-units/agricultural-life-sciences/animal-veterinary-food-sciences/food-science-bsfs/>)

## Minors

- Animal Science Minor (<https://catalog.uidaho.edu/colleges-related-units/agricultural-life-sciences/animal-veterinary-food-sciences/animal-science-minor/>)
- Food Science Minor (<https://catalog.uidaho.edu/colleges-related-units/agricultural-life-sciences/animal-veterinary-food-sciences/food-science-minor/>)

## Animal, Veterinary and Food Sciences Graduate Program

- Animal Physiology (Ph.D.) (<https://catalog.uidaho.edu/colleges-related-units/agricultural-life-sciences/animal-veterinary-food-sciences/animal-veterinary-science-phd/>)
- Animal Science (M.S.) (<https://catalog.uidaho.edu/colleges-related-units/agricultural-life-sciences/animal-veterinary-food-sciences/animal-veterinary-science-ms/>)
- Food Science (M.S.) (<https://catalog.uidaho.edu/colleges-related-units/agricultural-life-sciences/animal-veterinary-food-sciences/food-science-ms/>)
- Food Science (Ph.D.) (<https://catalog.uidaho.edu/colleges-related-units/agricultural-life-sciences/animal-veterinary-food-sciences/food-science-phd/>)