

ANIMAL, NUTRITION AND FOOD SCIENCES

OVERVIEW

An interdisciplinary program leading to the Ph.D. degree in Animal, Nutrition and Food Sciences is offered under the direction of a committee composed of faculty members drawn from the departments of Animal and Veterinary Sciences and Nutrition and Food Sciences. The goal of this interdisciplinary program is to provide advanced education and research training in mammalian physiology and endocrinology, mammary gland biology, basic and applied nutrition, and food microbiology and technology. While all Ph.D. students will complete a common core of courses, they will choose from one of three tracks for specialized study: nutrition, food sciences, or animal science. The program provides flexibility necessary for students to gain competence in the area of their choice. The extensive research facilities of the participating departments are available to all graduate students enrolled in the program.

DEGREES

- Animal, Nutrition and Food Sciences Ph.D.

FACULTY

Barlow, John; Assistant Professor, Department of Animal Science; DVM, University of Illinois Urbana-Champaign; PHD, University of Vermont

Berlin, Linda; Extension Assistant Professor, Department of Nutrition and Food Science; PHD, Tufts University

Donnelly, Catherine W.; Professor, Department of Nutrition and Food Science; PHD, North Carolina State University

Fobare Erickson, Patricia Ann; Senior Lecturer, Department of Animal Science; DVM, Cornell University

Greenwood, Sabrina Louise; Assistant Professor, Department of Animal Science; PHD, University of Guelph

Guo, Mingruo; Professor, Department of Nutrition and Food Science; PHD, National University of Ireland at Cork

Harvey, Jean Ruth; Professor, Department of Nutrition and Food Science; PHD, University of Pittsburgh

Johnson, Rachel K.; Professor, Department of Nutrition and Food Science; PHD, Pennsylvania State University

Kerr, David; Professor, Department of Animal Science; PHD, University of Saskatchewan

Kindstedt, Paul Stephen; Professor, Department of Nutrition and Food Science; PHD, Cornell University

Kraft, Jana; Assistant Professor, Department of Animal Science; PHD, University of Jena

McKay, Stephanie Dawn; Assistant Professor, Department of Animal Science; PHD, University of Alberta

Pintauro, Stephen Joseph; Associate Professor, Department of Nutrition and Food Science; PHD, University of Rhode Island

Pope, Lizzy; Assistant Professor, Department of Nutrition and Food Science; PHD, The University of Vermont

Smith, Julia M.; Extension Associate Professor, Department of Animal Science; PHD, Cornell University

Townson, David H.; Professor, Department of Animal Science; PHD, Michigan State University

Trubek, Amy B.; Associate Professor, Department of Nutrition and Food Science; PHD, University of Pennsylvania

Wright, Andre-Denis G.; Professor, Department of Animal Science; PHD, University of Guelph

Zhao, Feng-Qi; Associate Professor, Department of Animal Science; PHD, University of Alberta

Animal, Nutrition Food Sci Courses

ANFS 313. Food Safety and Public Policy. 3 Credits.

An exploration of issues that impact the development of microbiological food safety policy through analysis of how science and risk assessment are used in establishing policy. Pre/co-requisite: NFS 203 or Pre/co-requisites: NFS 203 or NFS 253 or Instructor permission. Cross-listed with: NFS 313.

ANFS 395. Special Topics. 1-18 Credits.

Lectures, laboratories, readings, or projects relating to topics in animal, nutrition and food sciences. Pre/co-requisite: Graduate standing.

ANFS 491. Doctoral Dissertation. 1-18 Credits.

Animal Sciences Courses

ASCI 215. Physiology of Reproduction. 3 Credits.

Fundamental principles of the physiology of reproduction with emphasis on, but not limited to, farm animals. Prerequisite: ASCI 141 or equivalent or Instructor permission.

ASCI 216. Endocrinology. 3 Credits.

Physiology of endocrine and autocrine/paracrine systems and growth factors. Prerequisites: Course in both Biology and Prerequisites: Course in both Biology and physiology; one course in Anatomy desirable.

ASCI 220. Lactation Physiology. 3 Credits.

Physiological mechanisms that control and affect lactation in domestic and laboratory animals with emphasis on dairy cattle. Includes mammary anatomy, development and health, and milk synthesis. Prerequisite: One Chemistry course and one course in Anatomy and Physiology, or Instructor permission.

ASCI 230. Agricultural Policy & Ethics. 3 Credits.

Examines American agriculture and policies from various perspectives - historical, political, ecological, technological, social, economic, and ethical. Emphasis on contemporary issues, policy options, future developments. Prerequisite: Junior standing or permission.

ASCI 263. Clin Top: Companion Animal Med. 3 Credits.

The use of case studies in companion animal medicine to develop clinical, analytical, and diagnostic skills. Prerequisites: ASCI 118, ASCI 141; Junior standing.

ASCI 264. Clin Topics: Livestock Medicine. 3 Credits.

An advanced study of diseases in cattle, sheep, goats, and pigs, emphasizing disease detection, pathobiology, treatment and prevention. Prerequisites: ASCI 118, ASCI 141, Junior standing.

ASCI 272. Adv Top:Zoo,Exotic,Endang Spec. 3 Credits.

An exploration of modern zoo philosophy and ethics and the extent of human intervention necessary for the preservation of endangered species. Prerequisites: ASCI 171 and Instructor permission.

ASCI 297. Advanced Special Topics. 0.5-15 Credits.

Written courses, seminars or topics beyond the scope of existing offerings. See Schedule of Courses for specifics. Prerequisite: Department Chair permission. May enroll more than once for maximum of fifteen hours.

ASCI 298. Advanced Special Topics. 0.5-15 Credits.

Written courses, seminars or topics beyond the scope of existing offerings. See Schedule of Courses for specifics. Prerequisite: Department Chair permission. May enroll more than once for maximum of fifteen hours.

ASCI 301. ASCI Graduate Journal Club. 1 Credit.

Students learn to critically read and discuss current scientific literature in terms of scientific method and merit. Pre/corequisite: Graduate standing.

ASCI 302. ASCI Graduate Seminar. 1 Credit.

Topics of current faculty and graduate student interest presented in a seminar-discussion format. Pre/corequisite: Graduate standing.

ASCI 303. Research Proposal Writing. 1 Credit.

Students develop and write a formal proposal for their graduate research project. Pre/co-requisite: Graduate standing; must be taken prior to/during the semester of student's first committee meeting.

ASCI 391. Master's Thesis Research. 1-10 Credits.**ASCI 392. Independent Literature Rsch. 1-6 Credits.**

Reading and literature research culminating in a paper on a topic of current interest in Animal Sciences.

ASCI 395. Special Topics. 1-6 Credits.**ASCI 396. Special Topics. 1-6 Credits.****ASCI 491. Doctoral Dissertation Research. 1-12 Credits.****Nutrition and Food Sciences Courses****NFS 203. Food Microbiology. 3 Credits.**

Desirable and undesirable activities of bacteria in foods. Mechanisms of food-borne infection and intoxication. Laboratory methods to enumerate and identify microorganisms associated with food. Prerequisite: NFS 153 or Instructor permission. Co-requisite: NFS 213.

NFS 205. Functional Foods:Prncpl & Tech. 3 Credits.

Examines the constituents that make food products functional and provides laboratory techniques needed to create a functional food. Pre/co-requisites: NFS 153, NFS 154, or Instructor permission.

NFS 223. Nutrition Educ & Counseling. 3 Credits.

Use of appropriate education theory, techniques, and media in nutrition education and counseling theories and negotiation, interviewing and counseling skills in individual and group counseling. Pre/co-requisites: NFS Pre/co-requisites: NFS 043, NFS 053, NFS 054, NFS 143.

NFS 243. Advanced Nutrition. 3 Credits.

Study of nutrients and their specific functions in metabolic process integrating cellular physiology, biochemistry, and nutrition. Prerequisites: NFS 043; P BIO 185; ANPS 019; Junior standing. Spring.

NFS 244. Nutr in Hlth & Disease Prevntn. 3 Credits.

Examination of dietary planning, nutrition assessment, genetics, drug-nutrient interactions, CAM therapies and nutrition related to health and prevention of disease. Pre/co-requisites: CHEM 042, ANPS 020, NFS 053, NFS 054, NFS 143.

NFS 250. Foodservice Systems. 4 Credits.

Emphasis on the foodservice system model for understanding quality control; food procurement, production, and marketing; management and evaluation of foodservice facilities, human and financial resources. Prerequisites: BSAD 060 or CDAE 158; BSAD 120; minimum Junior standing; Dietetics or Nutrition and Food Sciences, and Dietetics, Nutrition and Food Sciences majors only.

NFS 260. Diet and Disease. 3 Credits.

Examination of the physiologic, biochemical, and psychosocial basis of several disease states and the application of medical nutrition therapy in treatment. Prerequisite: NFS 053, NFS 143, NFS 243, NFS 244.

NFS 262. Community Nutrition. 3 Credits.

Study of U.S. public health nutrition policies, programs and practices. Emphasis on community nutrition program planning including needs assessment, intervention development and evaluation. Prerequisite: Junior or Senior standing. Spring.

NFS 263. Nutritional Biochemistry. 3 Credits.

Comprehensive study of metabolism of carbohydrates, lipids, and protein emphasizing diet induced, hormone mediated alterations in metabolism (e.g. starvation and obesity). Prerequisite: NFS 243 or Instructor permission. Spring.

NFS 295. Advanced Special Topics. 1-18 Credits.

Lectures, laboratories, readings, or projects relating to contemporary areas of study. Credits negotiable. Enrollment may be more than once, maximum of twelve hours in NFS 195 and NFS 295 combined. Prerequisite: Department permission.

NFS 296. Field Experience. 1-15 Credits.

Professionally-oriented field experience under joint supervision of faculty and business or community representative. Credit negotiable. Maximum of fifteen hours in NFS 196 and NFS 296 combined. Prerequisite: Departmental permission.

NFS 310. MSD Journal Club. 1 Credit.

Critical review of current scientific, peer-reviewed literature, student-led facilitated discussions, abstract writing on topics related to nutrition, sustainable food systems, hunger and food insecurity, health promotion, chronic disease prevention and management. Prerequisite: Master of Science in Dietetics students only.

NFS 311. Supervised Practice I. 4 Credits.

Through lecture, discussion, presentations, and practical experience, students develop competencies in clinical dietetics, community nutrition, and food service management. Prerequisite: MS D student.

NFS 312. Supervised Practice II. 4 Credits.

Through lecture, discussion, presentations, and practical experience, students develop competencies in clinical dietetics, community nutrition, and food service management. Prerequisite: MS D student.

NFS 313. Food Safety and Public Policy. 3 Credits.

An exploration of issues that impact the development of microbiological food safety policy through analysis of how science and risk assessment are used in establishing policy. Prerequisites: NFS 203 or NFS 253 or Instructor permission. Cross-listed with: ANFS 313.

NFS 350. Nutrition&Food Science Seminar. 1 Credit.**NFS 360. Rsch Meth Nutr & Food Sciences. 3 Credits.**

Advanced research methods, including grant preparation, IRB requirements, data analysis and presentation, and selected topics in advanced nutritional and food sciences. Pre/Co-requisite: Instructor permission.

NFS 391. Master's Thesis Research. 1-18 Credits.**NFS 392. Evidence-based Practice Prjct. 1-2 Credits.**

On site identification, review of literature for background and possible solutions, data collection and analysis, and writing and presenting the results and conclusions of a research problem. Pre/co-requisites: NFS 360, Pre/co-requisites: NFS 360, MS D student.

NFS 395. Special Topics. 1-18 Credits.**NFS 396. Special Topics. 1-18 Credits.**