DEPARTMENT OF ANIMAL SCIENCES

UNDERGRADUATE PROGRAM

Over 700 students studying various disciplines of animal science, including farm, companion and zoo animal production and biology.

GRADUATE PROGRAM

70 to 80 students pursuing MS and PhD degrees in the disciplines of animal physiology, genetics, nutrition, management, developmental biology, and food products.

CONCENTRATIONS-Biosciences, Behavior/Well-being, pre-veterinary medicine, Products, Agribusiness, Production.

CAREER SERVICES office emphasizes job placement, internships, and study abroad/international experiences.

FIVE SIGNATURE AREAS ACROSS LEARNING / RESEARCH / ENGAGEMENT MISSIONS

ANIMAL SCIENCES

Animal Production & Management Systems

- Gene Regulation, Stem Cell & Developmental Biology
- Animal Health & Well-Being
- Molecular Animal Physiology & Metabolism
- Food Safety & Food Quality
- Environmental management
  - Nutrient utilization
  - Efficient profitable production
  - Food animal product quality

Pre-harvest intervention strategies
  - Pathogen transmission & ecology
  - Stress & Immunology
  - Enhance nutrient profile

Physiological indicators of well-being
  - Stress response assessment
  - Impact factors of behavior facility

Nutrient utilization & partitioning
  - Digestive physiology and absorption
  - Obesity/Diabetes
  - Tissue growth regulation

Dr. Alan G. Mathew
Professor and Head
(765) 494-4806

915 W. State Street
West Lafayette, IN 47907-2054
http://www.ag.purdue.edu/ansc/
Methods to objectively evaluate animal well-being on the farm to help related and to transfer that information into educational programs. 

Determine how animal welfare, animal production and food quality are attributes and enhancing functional properties of muscle foods.

Research is to integrate energy and protein resources into a system that will optimize reproductive performance of beef cows and to evaluate nutritional and management factors that can enhance muscle accretion, marbling and tenderness of beef. This research focuses on the factors that impact and mechanisms that control muscle and adipose accretion in beef cattle.

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The primary goal is to define the signal transduction mechanisms and identify key signaling molecules that are involved in oocyte activation.

Research interests include strategies to reduce or eliminate potential pathogens, including Salmonella and toxigenic E. coli, in livestock, and production practices that limit antibiotic resistance in bacteria in livestock systems.

Research is to improve reproductive efficiency in domestic animals by understanding the cellular and molecular mechanisms that regulate early embryonic development.

Also on fat and meat quality with the goal of improving product quality in lean pigs.

Research consists of two major research thrusts: genetic methods to improve adaptability, stress resistance, and animal well-being; and the interface of quantitative and molecular genetics.
complex group of differentiated tissues and ultimately a fully formed adult organism. Studies are to understand how in vitro manipulation procedures affect development of the pig embryo and how this can be circumvented to improve embryo quality and embryo viability.

Research focuses on mammary gland biology and lactation.

Research is to determine factors which constrain the productive efficiency of livestock at the level of nutrient metabolism and to devise methods to circumvent such factors. Research integrates cell biology, molecular biology techniques and whole animal approaches to understand the processes which determine the fate of metabolizable nutrients with a goal of devising practices and technologies to enhance the efficiency of animal growth and/or milk production.

Research is focused on learning how the mammalian embryo directs its development from a single cell to a complex group of differentiated tissues and ultimately a fully formed adult organism. Studies are to understand how in vitro manipulation procedures affect development of the pig embryo and how this can be circumvented to improve embryo quality and embryo viability.

Research integrates cell biology, molecular biology techniques and whole animal approaches to understand the processes which determine the fate of metabolizable nutrients with a goal of devising practices and technologies to enhance the efficiency of animal growth and/or milk production.

Theresa Casey
Research Assistant Professor
theresa-casey@purdue.edu

Heng-Wei Cheng
Adjunct Associate Professor, USDA-ARS
Heng-wei.Cheng@ars.usda.gov
Poultry well-being; neuroanatomy

Research is to study the cellular and molecular mechanisms of stress-induced neuronal plasticity and behavioral adaptation; and to develop neuroanatomical and neurophysiological quantitative indicators of animal well-being. Integrated morphological, molecular biological, pharmacological and behavioral approaches to the goal have been designed.

Matt Claeyts
Programmatic A/P
claeyts@purdue.edu
Livestock judging and beef cattle management

Research is on evaluation of the use of by-product grains on cattle performance, product quality, and reproduction, and development of management systems for the Midwest U.S. environment.

Research is to develop new strategies to more safely reduce pathogen load in food animals prior to slaughter.

Research is to determine factors that mediate the insulin resistant phenotype that occurs in the adipose tissue as it transitions from an insulin sensitive tissue to the insulin resistant state in obesity, and how nutritional manipulation can be used to prevent this transformation.

Layi Adeola
Professor of Animal Sciences
ladeola@purdue.edu
Monogastric nutrition; amino acid nutrition

Research emphasizes amino acid nutrition, utilization of energy, and mineral utilization by nonruminants. The total program is aimed at improving the efficiency of lean meat production in nonruminant animals and minimizing nutrient impacts on the environment.

Kolapo (Kola) Ajuwon
Associate Professor of Animal Sciences
kajuwon@purdue.edu
Adipose biology; metabolism

Research is to determine factors that mediate the insulin resistant state in obesity, and how nutritional manipulation can be used to prevent this transformation.

Rod Allrich
Associate Professor of Animal Sciences
rallrich@purdue.edu
Reproductive physiology; immunology

Development of innovative educational programs in Animal Sciences.

Chris Bidwell
Professor of Animal Sciences
cbidwell@purdue.edu
Molecular genetics; genetics of muscle development

Using the tools of molecular and cellular biology, research is to identify and isolate genes that are directly involved in growth in mammals based on biochemical properties, tissue-specific expression, and chromosomal location. In fish, research is on the genetics of polyploids and interspecific hybrids as well as genes involved in reproduction.

Jackie Boudreaux
Academic Advisor
jboudreaux@purdue.edu
Advises Animal Sciences students with plans of study, class registration, and recruitment of new students.

Research integrates cell biology, molecular biology techniques and whole animal approaches to understand the processes which determine the fate of metabolizable nutrients with a goal of devising practices and technologies to enhance the efficiency of animal growth and/or milk production.

Shawn Donkin
Professor of Animal Sciences
sdonkin@purdue.edu
Ruminant nutrition and metabolism

Research is to determine factors which constrain the productive efficiency of livestock at the level of nutrient metabolism and to devise methods to circumvent such factors. Research integrates cell biology, molecular biology techniques and whole animal approaches to understand the processes which determine the fate of metabolizable nutrients with a goal of devising practices and technologies to enhance the efficiency of animal growth and/or milk production.

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claeyts@purdue.edu
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Research is on evaluation of the use of by-product grains on cattle performance, product quality, and reproduction, and development of management systems for the Midwest U.S. environment.

Research is to develop new strategies to more safely reduce pathogen load in food animals prior to slaughter.

Research is primarily in molecular microbiology. A major focus is on pre-harvest food safety issues, such as the impact of antibiotic use on antibiotic resistance development in pathogenic bacteria. Research is to develop new strategies to more safely reduce pathogen load in food animals prior to slaughter.

Candace Croney
Associate Professor of Animal Sciences
ccroney@purdue.edu
Director, Purdue Univ. Center for Animal Welfare Science

Research interests include the interactions between animal behavior, cognition and well-being; the ethical implications of animal care and use decisions; and public perceptions of animal agriculture.

Barry Delks
Programmatic A/P
delks@purdue.edu
Career Services Coordinator

Development of leadership educational programs and career educational materials.

Heng-Wei Cheng
Adjunct Associate Professor, USDA-ARS
Heng-wei.Cheng@ars.usda.gov
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Career Services Coordinator

Development of leadership educational programs and career educational materials.

Paul Ebner
Associate Professor of Animal Sciences
pebner@purdue.edu
Microbiology; pre-harvest food safety

Research is primarily in molecular microbiology. A major focus is on pre-harvest food safety issues, such as the impact of antibiotic use on antibiotic resistance development in pathogenic bacteria. Research is to develop new strategies to more safely reduce pathogen load in food animals prior to slaughter.
Department of Animal Sciences
Faculty and Programmatic Administrative/Professional (A/P) Staff

Lynette Musselman
Public Relations Coordinator
griffl89@purdue.edu

Responsible for public relations and social media for the department, website maintenance, departmental communications/announcements and award nominations.

Mike Neary
Programmatic A/P
mneary@purdue.edu
Small ruminant management

Research areas include lamb carcass composition, grazing systems, sheep nutrition and management, and the use of by-product feeds in small ruminant diets.

John Patterson
Associate Professor of Animal Sciences
jpatters@purdue.edu
Intestinal microbiology

Research is on the influence of dietary additions and stressors on the intestinal microbial community structure and microbial interactions influencing anaerobic digestion of waste biomass and production of hydrogen and methane. Research also is addressing the influence of diet and stressors on interactions between the intestinal microbiota, the mucosal epithelium and the mucosal immune system.

Scott Radcliffe
Associate Professor of Animal Sciences
jradcliffe@purdue.edu
Swine nutrition

Research focuses on “environmental nutrition” in swine and poultry. Specifically, research is investigating dietary additives that reduce nutrient excretion and that might serve as potential replacements for subtherapeutic levels of antibiotics in the diet.

Brian Richert
Associate Professor of Animal Sciences
brichert@purdue.edu
Swine nutrition and management

Research is on the use of energy by-product feeds on pig performance, products, nutrient excretion, and odor production. In addition, research is on environmental nutrition impacts and alternatives to antibiotics.

Allan Schinckel
Professor of Animal Sciences
aschinck@purdue.edu
Swine breeding and genetics

Research is to genetically increase swine lean growth and model the optimal nutrition and environment to maximize lean efficiency; the evaluation of genotypes for lean growth rate, feed intake, and carcass composition; alternative methods to estimate whole body and carcass composition; and statistical methods to increase the accuracy of compositional growth curves and reduce genotype prediction biases.

Jon Schoonmaker
Associate Professor of Animal Sciences
jschoonm@purdue.edu
Beef cattle nutrition

Research is on lifetime nutritional factors affecting intramuscular fat deposition, muscle growth, health status, and production efficiency in beef cattle.

Mike Schutz
Professor of Animal Sciences
mschutz@purdue.edu
Dairy management, breeding and genetics

Research is to reduce incidence of mastitis, especially in first lactation heifers, and to improve disease resistance of dairy cattle and milk quality for consumers; to determine the relationships among mastitis, somatic cell counts in milk, and milk yield in first-calf heifers; conformation and health traits in breeding programs, and investigation of disease prevalence in dairy heifers.

Kara Stewart
Assistant Professor of Animal Sciences
krstewart@purdue.edu
Reproductive Physiology

Research focus is gestation and neonatal effects on long-term process performance.

Terry Stewart
Professor of Animal Sciences
tstewart@purdue.edu
Quantitative genetics

Research is on the optimization of genetic evaluation systems and the definition of breeding objectives to maximize the rate of improvement of domestic livestock.

Ashley York
Programmatic A/P
Director of Academic Advising & Student Services
ashleyyork@purdue.edu

Coordinates the leadership for directing academic advising plans of study, class registration, and recruitment of new students.

Stacy Zuelly
Assistant Professor of Animal Sciences
szuelly@purdue.edu
Meat Scientist

Teaching focus is processed meats and the relationship between carcass composition, processing, and product quality. Extension focus is educational opportunities for processors and consumers to help optimize meat quality and palatability.

For more information about Purdue Animal Sciences, please visit: http://www.ag.purdue.edu/ansc/