



What we do & Why it matters

Animal Sciences | ansc.illinois.edu

The Department of Animal Sciences' graduates and discoveries contribute to a safe, nutritious, sustainable, and affordable food supply and enhance the well-being of humans and animals.

RODNEY JOHNSON (professor and department head)

Dr. Johnson promotes, protects, and maintains brain health by studying communication pathways between the immune system and the brain. He investigates how infection, nutrition, and birth weight affect brain and cognitive development. He also studies how aging causes deterioration in brain health.

JANICE BAHR (professor emerita)

Dr. Bahr uses the laying hen, the only animal that gets ovarian cancer identical to humans, to develop techniques for the early detection of ovarian cancer. She evaluates the dietary influences of anti-inflammatory Indian spices, such as curcumin and ashwagandha, on the incidence and severity of ovarian cancer. She also studies how the elevation of follicle stimulating hormone in postmenopausal women may cause the disease.

ISAAC CANN (professor)

Dr. Cann examines genes and corresponding enzymes that catalyze efficient conversion of biomass cellulose to sugars in order to help develop sustainable renewable energy for the world. He advances knowledge in plant cell wall hydrolysis in ruminants, fiber digestion in the human gut, and also DNA replication/repair in single-celled microorganisms to reduce greenhouse gas emissions.

FELIPE CARDOSO (associate professor)

Dr. Cardoso addresses the most important challenges faced by the dairy industry through his research in nutrition and reproduction. He engages dairy producers to implement data-driven best management practices into their operation. He studies the mechanisms of metabolic adaptation from gestation to lactation and the impact of nutrition on metabolism, reproduction, and health.

ISABELLA CONDOTTA (assistant professor)

Dr. Condotta reduces animal stress, improves animal well-being and environmental sustainability, and helps farmers make better and more efficient management decisions by developing precision management systems for animals. Her interdisciplinary research applies advanced technologies, such as image and audio processing and machine learning algorithms, to acquire and analyze individual animals' electronic data, allowing continuous and automatic monitoring of their behavior, health, and well-being.

MARIA R.C. DE GODOY (assistant professor)

Dr. Godoy improves the quality of life and wellness of companion animals through research focusing on ingredient evaluation and foodomics, pet food technology, and therapeutic nutrition.

MATTHEW DEAN (assistant professor)

Dr. Dean works to increase reproductive efficiency in humans and animals by increasing our understanding of the ovary, oviduct, and uterus. Projects in his lab include understanding how the uterus stores nutrients to support early pregnancy, how endocrine disruption chemicals (EDCs) affect the function of the oviduct, and the early events in the development of ovarian cancer.

ANNA DILGER (associate professor)

Dr. Dilger advances the use of performance-enhancing technologies in livestock production to provide high-quality meat products to consumers. Her research examines the molecular mechanisms related to increased animal growth, efficiency, and effects on meat quality.

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RYAN DILGER (associate professor)

Dr. Dilger conducts interdisciplinary research involving nutrition, immunology, and neuroscience. Working with pig and chicken models, his research solves practical nutrition issues faced by modern animal agriculture and uses a translational pig model to study early-life effects of nutrition on the microbiome, immune system, and brain to improve both human and animal health and well-being.

JAMES DRACKLEY (professor)

Dr. Drackley works extensively with dairy and feed industry groups around the world to improve the health and productivity of dairy cattle. He focuses much of his nutrition and metabolism research on the transition period from pregnancy to lactation in cows and the transition from milk feeding to solid feed intake in calves.

MICHAEL ELLIS (professor)

Dr. Ellis advances swine production operations around the world through his applied swine research program. His research tackles a range of production and management issues including managing growth of pigs in wean-to-finish facilities, animal handling and transportation, and pork quality.

JASON EMMERT (professor)

Dr. Emmert seeks nutritional strategies to improve efficiency of nutrient utilization in broiler chicken diets, with the goal of reducing production costs and nutrient excretion. He actively contributes to the department's teaching program and uses his interactions with animal sciences students to help them understand the depth and breadth of opportunities in the field.

GEORGE FAHEY (professor emeritus)

Dr. Fahey works with both the pet and human food industries at the interface of nutrition, health, and safety to provide new technologies and nutritional interventions for the betterment of pet and human health and well-being.

AMY FISHER (teaching associate professor)

Dr. Fischer teaches courses pertaining to companion animal science, policy, and animal shelter management. Her teaching program includes coordination of experiential learning opportunities with a variety of animal service agencies. Her extension program focuses on animal shelter practices, pet retention, and humane population management of cats and dogs, including nonsurgical contraceptive methods.

REX GASKINS (professor)

Dr. Gaskins studies cancer metabolism. His current research investigates the biological basis of colorectal cancer risk associated with diets high in red meat and saturated fat, and the role of mitochondria in tumor cell migration in patients with brain cancer.

BRANDON KLEHM (instructor)

Brandon Klehm teaches the techniques and reasoning behind evaluating commercial carcasses of major U.S. commodity meat species to better understand industry standards and production methods that enhance marketing to consumers. He coaches the meat judging team, a student group that competes nationally and awards students for accurate analysis of products at each contest.

KEVIN KLINE (professor)

Dr. Kline's research focuses on the detection of illegal substances in race horses; the effects of feed processing on growth and feed efficiency in young horses; stallion fertility; and detecting osteochondritis in foals. He serves as a consultant for state racing commissions and race tracks to maintain the integrity of horse racing.

ROBERT KNOX (professor)

Dr. Knox helps swine producers around the world provide high-quality pork to consumers. A national and international leader in applied swine reproductive management, his research focuses on swine fertility, stress, reproductive diagnostics, hormonal control of reproduction, and fertility of cryopreserved swine sperm.

KENNETH KOELKEBECK (professor)

Dr. Koelkebeck helps poultry producers across the globe provide high-quality eggs and meat for consumers. His research in poultry production, environmental management, waste management, nutrition, and biosecurity impacts small flock and commercial poultry producers.

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ANNA KUKEKOVA (associate professor)

Dr. Kukekova studies genetics of social behaviors. She works with unconventional animal models that hold a significant potential for understanding genetic regulation of affiliation, aggression, anxiety, and fear, social behaviors that are consistently associated with human neurological disorders. The identification of genes and gene networks involved in regulation of these behaviors is also a subject of interest for animal breeding programs focused on selection for behavioral traits.

JUAN LOOR (professor)

Dr. Loor is an international leader in his field, advancing knowledge to better understand cattle development while helping feed a growing world population. He studies nutritional and physiological genomics during the neonatal, lactation, and rapid growth periods in both beef and dairy cattle.

RODERICK MACKIE (professor)

Dr. Mackie advances animal health, biofuel production, and food safety through his research in microbiology. His work focuses on anaerobic microbiology and fermentations, molecular microbial ecology in gut ecosystems, degradation of plant cell wall polymers and biomass, nitrogen metabolism, anaerobic waste digestion, and antibiotic resistance genes.

JOSH McCANN (assistant professor)

Dr. McCann studies the influence of nutrition on metabolism and growth of feedlot cattle by characterizing ruminal fermentation and the gut microbiome. His work contributes to the sustainability and profitability of feedlot cattle operations that provide high-quality beef to consumers.

DANIEL MCKIM (assistant professor)

Dr. McKim studies how neuroendocrine regulation of immune cell production contributes to health and disease. His research addresses how bidirectional signaling between the immune system and the brain contribute to changes in behavior during psychological stress and inflammation. His work also has implications for health conditions that are exacerbated by inflammation, including cardiovascular and infectious disease.

DAVID MILLER (professor)

Dr. Miller advances knowledge in mammalian fertilization and early development. His work has led to novel ways of storing sperm outside the reproductive tract and greater accuracy in estimating male fertility, allowing livestock producers to improve and control farm animal fertility. His research also helps human medical professionals provide better services to their patients.

DEREK NOLAN (teaching assistant professor)

Dr. Nolan helps dairy producers reach their goals by providing tools to make informed management decisions and improve milk quality. He focuses on providing hands-on experiences that help youth better understand the dairy cow and dairy production system.

JAN NOVAKOFSKI (professor)

Dr. Novakofski studies prion diseases in animals, such as “mad cow disease” and scrapie. His efforts lead to better understanding the genetics and transmission of these types of diseases to protect the health of animals and humans.

ROMANA NOWAK (professor)

Dr. Nowak finds new therapeutic strategies to address reproductive diseases in women. Using the chicken as a model, she studies dietary interventions to prevent and treat uterine fibroids. Her research provides insight into important aspects of reproductive biology, including how environmental factors impact reproductive diseases and infertility in women.

DOUG PARRETT (professor emeritus)

Dr. Parrett works with beef producers to identify more predictable genetics to improve the sustainability and quality of beef and beef production enterprises. His teaching in introductory animal sciences informs students to the breadth of animal production and research and helps them discover pathways and opportunities to meet their career goals.

CARL PARSONS (professor)

Dr. Parsons develops high-quality feeds to enhance the growth and health of humans and animals. Although his primary focus is on poultry nutrition, he also studies nutrition of humans, ruminants, companion animals, fish, and zoo animals with an emphasis on feed ingredient and foodstuffs evaluation.

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SARAH RICHARDSON (instructor)

Sarah Richardson teaches courses pertaining to companion animals, the human-animal bond, and our interactions and relationships with many other animals. She also coordinates a variety of experiential learning opportunities with state and local animal organizations and businesses, along with the annual companion animal spring break trip that gives undergraduate students the chance to explore companion animal career opportunities available around the country.

JASON RIDLON (assistant professor)

Dr. Ridlon finds treatment strategies to improve human health and animal well-being. He studies gut microbiology, specifically the biochemistry and molecular biology of steroid and bile acid biotransformations by the gut microbiota. He works to understand how microbial metabolites promote gastrointestinal tract diseases, such as liver and colorectal cancers, as well as essential hypertension.

LEE RINCKER (instructor)

Lee Rincker coaches the intercollegiate livestock judging team and co-teaches livestock production and evaluation courses. He teaches students how to apply livestock evaluation principles in a real-world setting, fostering essential life skills and offering unique opportunities to network with industry leaders. His extension provides youth with hands-on opportunities to enhance livestock production interest and knowledge.

ALFRED ROCA (professor)

Dr. Roca conducts genetic studies on wildlife and domesticated animals. He uses DNA from elephants to determine conservation priorities for the species and to establish the geographic origins of confiscated ivory. He also studies “endogenous” retroviruses, which are retroviral copies that have become permanent components of the DNA of humans and animals, and can impact their health.

SANDRA RODRIGUEZ-ZAS (professor)

Dr. Rodriguez-Zas finds ways to prevent and cure diseases in both livestock and humans. She uses biostatistics and computational approaches to identify biomarkers and molecular pathways associated with health, reproduction, and performance in livestock species and cancers in humans.

LAWRENCE SCHOOK (professor)

Dr. Schook uses the pig as a biomedical cancer model to help medical professionals better understand and treat this life-threatening disease. An international scholar in comparative genomics, he led the pig genome-sequencing project that provided many insights into human cancer and other chronic diseases.

DAN SHIKE (associate professor)

Dr. Shike identifies management and nutritional strategies that not only improve the reproduction and longevity of beef cows, but also optimize growth, efficiency, and carcass traits of the cow's offspring. Collectively this work leads to the efficient, sustainable production of an affordable, abundant food supply.

ANDREW STEELMAN (assistant professor)

Dr. Steelman investigates the impact of environmental factors such as infection, nutrition, and environmental and psychological stress on the intercellular communication pathways between cells of the brain and the immune system.

HANS STEIN (professor)

Dr. Stein determines energy and nutrient digestibility and metabolism in monogastric animals and humans. He conducts research in the areas of energy, mineral, carbohydrate, and amino acid digestibility and utilization, with applications for pigs and humans.

KELLY SWANSON (professor)

Dr. Swanson's research contributes to development of quality feeds for companion animals and dietary guidelines to prevent obesity and other human health issues. He studies the effects of nutritional intervention on health outcomes, identifying mechanisms by which nutrients impact gene expression and host physiology, with primary emphases on gastrointestinal health and obesity.

MATTHEW WHEELER (professor)

Dr. Wheeler tirelessly advocates for the use of embryo technologies to improve livestock genetics in order to reduce food insecurity and feed hungry people throughout the world. He advances technology in both livestock production and human medicine through his research on embryo/developmental biology, stem cells, cloning, transgenic livestock, reproduction, genomics, and regenerative biology.