

ANSC Lab Research

See What Some of the ANSC Faculty and Students Are Studying Now

Dr. Sarah Reed, Dr. Steven Zinn and Dr. Kristen Govoni



As part of a large collaborative project Dr. Zinn, Dr. Govoni, and Dr. Reed along with their undergraduate and graduate students are working to determine the effects of poor maternal nutrition during gestation on the growth and development of the fetus using sheep as a model. Dr. Reed's lab has focused on how poor maternal nutrition during gestation affects muscle fiber composition, muscle fiber size, as well as expression of key factors involved in myogenesis. Additionally, Ph.D. candidate Amanda Jones has been working to identify how poor maternal nutrition during gestation affects the inflammatory status of the mother and the offspring. Dominique Martin, a Master's student, is investigating how poor maternal nutrition alters muscle metabolism. In Dr. Govoni's lab, Ph.D. candidate Sambhu M. Pillai is performing an RNA-seq analysis using next generation sequencing to identify key mechanisms and pathways involved in mediating the effects of poor maternal nutrition on muscle development. Dr. Maria Hoffman, a post-doctoral fellow in the Govoni lab, is researching the effects of maternal diet on pancreas development and DNA methylation. By working to understand the key mechanisms that are involved in mediating the effects of poor maternal nutrition on offspring development this research can be used to improve current livestock management practices as well as determine some of the long term effects across multiple species including humans.

Dr. Jenifer Nadeau

Dr. Nadeau's lab is collaborating with Dr. Reed and undergrads taking body and hoof measurements on horses between the ages of one and five. They are also utilizing GPS tracking to see how much distance the horses travel in different seasons. This study will help determine how horses are affected by seasons and growth.





Dr. Michael Darre

Dr. Darre is currently working on testing LED lamps for chicken cages at commercial poultry farms in conjunction with Overdrive lighting and a local poultry producer. His graduate student, Laura Burban, is currently researching the effects of noise, odors, light levels and ventilation on animals in shelters and how improving the environment has an effect on behavior and overall well-being. Dr. Darre is also collaborating with Dr. Venkitanarayanan on their Salmonella project.

Dr. Amy Safran

Students enrolled in SAAS 272: Sustainable Animal Management (Fall 2014) designed a sheep pasture management study with the goal of increasing soil carbon content, thereby reducing atmospheric greenhouse gases, using rotationally grazed sheep and fertilization with compost. This method will be compared to a pasture using only rotationally grazed sheep. Soil carbon changes occur slowly over time so this project will continue with summer sheep grazing and fall soil sampling for the following ten years. Evaluation of results made by the final group of students and the impact to sequestration of carbon by the soil will be revealed upon completion of this study in 2025. Data from this project will be included in a larger national project entitled the “Soil Carbon Challenge.” Practices that have had the largest positive impact around the country on soil carbon will be communicated to others. These practices, having been measured under many different conditions throughout the country (and hopefully internationally, too) can be applied locally as management techniques for improving soil carbon and will vary with location and type of farm etc.



Dr. Mary Anne Amalaradjou

Dr. Mary Anne Amalaradjou along with her graduate and undergraduate students are researching the efficacy of wash water disinfectants in reducing pathogen contamination on mangoes. This project is being conducted in collaboration with the Center for Produce Safety and the National Mango Board. They are currently evaluating the use of common water disinfectants including chlorine in its ability to inactivate and eliminate Salmonella from mango wash water to prevent cross contamination of the fruit. The results from the study are expected to identify most effective wash water disinfectants that can be employed to control Salmonella and other pathogens on mangoes. Further, this study will provide science-based results to help improve best management practices



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in the post-harvest handling of mangoes thereby promoting food safety and quality. Additionally, through funding from the US Department of Agriculture, Amalaradjou's lab group is also studying the potential use of cheese as a dietary intervention in the prevention and control of inflammatory bowel disease.

Dr. Dennis D'Amico

Dr. Dennis D'Amico's research focuses on improving the safety and quality of milk and value-added dairy products. In particular, he works with specialty and artisan cheesemakers to evaluate the presence, ecology, and diversity of pathogens in the cheesemaking continuum. Other projects in the D'Amico lab are focused on identifying and optimizing natural and novel means of controlling pathogens in cheese. These include the use of GRAS antimicrobials (e.g. hydrogen peroxide, lauric arginate ethyl ester, polylysine, and acidified calcium sulfate) applied alone or in combination as dip and edible coating treatments. Dr. D'Amico's lab is also evaluating "clean label" approaches through the application of protective cultures of lactic acid bacteria to control the pathogen *Listeria monocytogenes* in milk and cheese. The lab is also evaluating the application of modified atmosphere packaging to enhance the shelf life and safety of fresh soft cheeses. Additional collaborative projects are focused on characterizing the microbial ecosystems of traditional farmstead cheese production and their roles in microbial transfer and population succession as well as linking the consumption of cheese to health benefits including the beneficial role of cheese starter cultures in the prevention of inflammatory bowel disease.

