FOODS FOR HEALTH
2018 Seed Grant Awards

The Foods for Health Seed Grant program is a university-wide initiative with a primary goal of advancing transdisciplinary collaboration and scientific approaches integrating foods and nutrition, metabolomics, and health. Five multidisciplinary teams, representing nine departments across three colleges, were awarded a total of $125,000 in Spring 2018.

Metabolomic signature of beef consumption in the context of a healthy dietary pattern in cancer survivors.

**PI:** Steven Clinton, MD, PhD, Department of Internal Medicine, College of Medicine  
**Co-PIs:** Colleen Spees, PhD, MEd, RDN, LD, FAND, School of Health and Rehabilitation Sciences, College of Medicine; Eric England, Department of Animal Sciences, College of Food, Agriculture, and Environmental Sciences (CFAES); Rishi Jain, MD, MS, Department of Internal Medicine, College of Medicine

Epidemiologic studies implicate red meat as a cause for multiple cancers. Our study is designed to examine how the intake of lean red meat impacts metabolism. This data will be integral to future efforts which aim to clarify both the benefits and risk of red meat in cancer survivors.

Linking apple genomics and metabolomics for nutrition-driven germplasm improvement.

**PI:** Jessica Cooperstone, PhD, Departments of Horticulture and Crop Science & Food Science and Technology, CFAES  
**Co-PIs:** Jonathan Fresnedo Ramirez, PhD, Department of Horticulture and Crop Science, CFAES; Emmanuel Hatzakis, PhD, Department of Food Science and Technology, CFAES; Diane Miller, PhD, OARDC Horticulture and Crop Science, CFAES

We aim to develop a platform to simultaneously integrate data about the beneficial phytochemicals and the genetics of apples. Thus, this platform will enable plant breeders to generate apple varieties more efficiently and with enhanced nutritional qualities.
From agricultural waste products to colon health: Producing prebiotics from apple pomace.

PI: Emmanuel Hatzakis, PhD, Department of Food Science and Technology, CFAES
Co-PIs: Michael Bailey, PhD, Department of Pediatrics, College of Medicine; Joshua Blakeslee, Department of Horticulture and Crop Science, CFAES

We will develop novel prebiotics from apple pomace and assess their prebiotic effects on fecal bacterial composition of healthy children and children with Crohn’s disease (CD). This may lead to the production of low cost prebiotics and the development of therapeutic approaches for restoring microbial homeostasis to the inflamed CD intestines.

Metabolomic and microbial factors of postpartum weight retention.

PI: Matthias S. Klein, Dr. rer. nat., Department of Food Science and Technology, CFAES
Co-PIs: Lisa M. Christian, PhD, Department of Psychiatry and Behavioral Health, College of Medicine

Retaining weight gained during pregnancy is a health risk and worsens obesity in our communities. We will analyze small molecules (metabolites) in serum and feces to identify metabolic and gut microbial contributions to weight retention. This will allow early interventions for women at risk, improving individual and community health.

Effects of rotaviral infections and probiotic bacteria on host metabolome.

PI: Gireesh Rajashekara, DVM, PhD, Food Animal Health Research Program, OARDC
Co-PIs: Anastasia Vlasova, DVM, PhD, Food Animal Health Research Program, OARDC; Linda Saif, PhD, Food Animal Health Research Program, OARDC; Vicki Wysocki, PhD, Department of Chemistry and Biochemistry, College of Arts and Sciences

Human rotavirus (RV) is a major cause of diarrhea in children. Using malnourished gnotobiotic pigs transplanted with infant fecal microbiota (humanized) we will study metabolic responses to RV infection/probiotic E. coli Nissle supplementation. Our studies will identify biomarkers of RV/probiotic treatment and lead to novel practical dietary interventions for RV diarrhea.

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