

HFHL Institute
3-yr grants awarded (January 1, 2008-December 31, 2010)

LARGE GRANT PRIORITY AREA: PREVENTION OF DIET-RELATED CHRONIC DISEASE AND OBESITY

“Identifying Bioactive Food Components with Anti-Inflammatory and Anti-Obesogenic Effects”

[Doug Mashek](#) and [David Bernlohr](#)

Funding: \$300,000

Co-Investigators: Xiaoli Chen (CFANS); Howard C. Towle (BMBB)

The goal of this research is to facilitate the discovery of novel food-derived compounds that affect adipose (i.e. fat) tissue metabolism. Specifically, we will screen thousands of compounds isolated from herbs and other foods with medicinal properties that possess the ability to decrease inflammation and accumulation of adipose tissue. By doing so, we hope to identify food components that may be used to prevent or treat metabolic diseases such as obesity and diabetes.

“Reduction in Colon and Liver Cancer Risk by Combined Consumption of Cruciferous and Apiaceous Vegetables”

Sabrina Peterson and [Dan Gallaher](#)

Funding: \$297,834

Co-Investigators: Joellen Feirtag (Extension); Myron Gross (Medicine); Will Thomas (SPH)
Colorectal cancer is one of the most common cancers diagnosed. Liver cancer rates have been increasing in the United States. We will be studying how the carrot-family of vegetables (carrots, celery, parsnips, etc.) and the broccoli-family of vegetables (broccoli, cabbage, cauliflower, etc.) may prevent colon and liver cancer. Each vegetable family contains a different group of natural compounds that influence two different processes for detoxifying cancer-causing toxins. Using rats, we will determine if the combination of purified compounds from both vegetable groups is more protective against toxins than one group. We will also compare if intact, whole food sources of the compounds are more protective than the purified compounds.

LARGE GRANT PRIORITY AREA: FOOD SAFETY, FROM FARM TO TABLE

“Microbial Ecology, Control and Consumer Perception of Foodborne Pathogens Associated with Fresh Vegetables”

[Francisco Diez-Gonzalez](#)

Funding: \$587,005

Co-Investigators: Jeffrey Bender (VPM, CVM); Craig Hedberg (EHS, SPH); Michael Sadowsky (SWC, CFANS); Cindy Tong (Horticulture, CFANS)

Recent food poisoning outbreaks have been caused by eating vegetables contaminated with harmful strains of *E. coli* and *Salmonella*. In order to prevent these outbreaks we need a better understanding of how current farm practices lead to or prevent contamination and what unique characteristics of these pathogenic bacteria allow them to survive on vegetables. This project involves microbiologists, horticulturists, and public health and food safety experts working together to identify farm practices, environmental conditions, and specific genes that allow pathogenic *E. coli* and *Salmonella* to contaminate and grow on vegetables such as lettuce, spinach, and tomatoes. The project’s findings will help us develop effective control measures to reduce the number of food poisoning outbreaks and enhance consumer confidence in the safety of fresh fruits and vegetables.