



United States  
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## PROJECT DESCRIPTIONS

# NIFA AWARDS MORE THAN \$4 MILLION IN SUPPORT OF NUTRITION RESEARCH

**T**HE U.S. DEPARTMENT OF AGRICULTURE'S (USDA) NATIONAL INSTITUTE OF FOOD AND AGRICULTURE (NIFA) announced on April 23, 2015 more than \$4 million in research grants that seek to improve the functional role of food in human health and nutrition. These awards were made through NIFA's Agriculture and Food Research Initiative (AFRI), which is authorized by the 2014 Farm Bill.

### **University of Arizona, Tucson, AZ**

**\$26,212** | Conference grant to bring together scientists, nutritionists, and clinicians, as well as agricultural, state, and federal agency representatives to discuss the impact of diet and nutrition on the etiology of chronic diseases at the 2015 Research Frontiers in Nutritional Sciences Conference.

### **University of Arizona, Tucson, AZ**

**\$499,993** | Collaborate with Purdue University to test hypoallergenic soybeans in swine to discover the potential and protocols by which hypoallergenic lines of soybeans can be used to build immunotolerance to later exposure to conventional food soybeans.

### **Colorado State University, Fort Collins, CO**

**\$499,978** | Establish the influence of Fads2 expression on the dietary effects of n6 and n3 polyunsaturated fatty acids (PUFA) on inflammation and cardio metabolic risk and distinguish the independent and interaction effects of these PUFA derived from both exogenous and endogenous sources through the use of standardized diets and novel Fads2 gain and loss of function mouse models.

### **University of Connecticut, Storrs, CT**

**\$149,857** | Further understand how diet influences chronic disease through regulating HDL metabolism and function and identify novel dietary approaches aimed at preventing the HDL dysfunction associated with chronic diseases, such as atherosclerosis and type 2 diabetes.

### **University of Florida, Gainesville, FL**

**\$499,348** | Study the combined effects of natural food phytophenols found

in blueberries, and *L. johnsonii* N6.2 on the inflammatory status of the host GI tract and its systemic consequences by evaluating the host response by following local and systematic relevant biomarkers.

### **Tufts University, Medford, MA**

**\$499,989** | Provide critical information regarding common and distinctive roles of eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA), the omega-3 fatty acids in fish and fish oil, in systemic inflammation and lipid metabolism.

### **Tufts University, Medford, MA**

**\$496,113** | Determine the role of bioactive components in tomato and tomato products in preventing obesity-related inflammation and cancer development and increase understanding of common and distinct molecular mechanisms by which tomato carotenoids, their metabolites, and different organs protect against inflammation and cancer risk.

### **University of Nebraska, Lincoln, NE**

**\$499,812** | Asses the bioavailability of milk-borne micorRNAs in humans, characterize the delivery of these microRNAs by endothelial cells to immune cells, analyze the impact immune gene expression, and assess markers of intestinal inflammation in Mcr1a<sup>-/-</sup> mice fed a microRNA-define diet.

### **Rutgers University, New Brunswick, NJ**

**\$35,000** | Conference grant to bring together scientists to advance knowledge of the function and efficacy of nutrients and other dietary bioactive components in promoting health. Featured speakers will be leaders in the fields of nutrition, metabolism, immunity, microbiology, endocrinology, biochemistry, and molecular biology.

### **Ohio State University, Columbus, OH**

**\$500,000** | Investigate the potential of maize-based flavone-rich diets in inflammation-induced obesity by determining the bioavailability of flavones from whole-maize based flavone rich foods in vivo and evaluating the effects of these diets in inflammation-induced obesity using animal models and transgenic mice.

### **Oklahoma State University, Stillwater, OK**

**\$149,998** | Test the hypothesis that whole eggs and the bioactive xanthophylls prevent chronic inflammation through activation of mitochondrial AMP-activated protein, which in turn restores mitochondria turnover, and leads to the suppression of a signaling pathway and subsequent amelioration of chronic inflammation in diabetic mice.

### **Pennsylvania State University,**

*University Park, PA*

**\$447,790** | Test whether broccoli can functionally alter the gut microbiota in part through inducing host Ah receptor signaling via in situ generation of broccoli-derived Ah receptor activators and whether the observed changes in the microbiome would improve healthy through overall reduced gut inflammation.

### **Utah State University, Logan, UT**

**\$74,606** | Enhance research capabilities for understanding the effects of diet on health, particularly the role of polyunsaturated fatty acids in controlling inflammation, with an emphasis on high sensitivity analysis of LPS and related protein in serum; lipid omics analysis using liquid chromatography-tandem mass spectrometry; and stable isotope methodology of analysis of dietary fatty acids.