CAHNRS – ERI Internal Seed Funding Program

The Emerging Research Issues in Washington Agriculture (ERI) internal seed funding program has supported 48 projects since its inception as part of the 2007 Industry-Based Unified Agriculture Initiative. Below is a summary of grant titles, along with the Principal Investigator of record.

2018
- Manipulating Lipid Metabolism in Plants as Novel Plant Parasitic Nematode Control Measure  
  **Cynthia Gleason**, Plant Pathology
- Identifying Bulb Fennel Cultivars Suitable for Production in Northwest Washington  
  **Carol Miles**, Horticulture
- Enhancing Food System Sustainability through Effective Social Media Uses by Small-Scale Food and Farm Businesses  
  **Jihyeong Son**, Apparel, Merchandising, Design & Textiles

2017
- Late Maturity Alpha-Amylase, an emerging cause of low falling numbers in PNW wheat  
  **Michael Pumphrey**, Crop & Soil Sciences
  **Troy Peters**, Biological Systems Engineering
- Integration of Large-Scale Genomics, Phenomics, and Systems-Level Modeling for Next-Generation Biomarkers in Breeding  
  **Stephen Ficklin**, Horticulture
- Plant Microbiome Promotes Soil Disease Suppression in Response to Genotype  
  **Tarah Sullivan**, Crop & Soil Sciences

2016
- Elucidating roles of flavin cofactor availability in regulating metabolism in response to environmental cues  
  **Sanja Roje**, Institute of Biological Chemistry
- Sensor-Based Precision Orchard Management  
  **David Brown**, Crop & Soil Sciences
- Mechanisms beyond Preventive Effect of Fruit Consumption on Colorectal Cancer  
  **Mei-Jun Zhu**, School of Food Science
• A Proof of Concept System using Autonomous Unmanned Aerial Systems for Mitigating Bird Damage in Fruit and Berry Crops  
  Manoj Karkee, Biological Systems Engineering

• Development of procedures and techniques to utilize CRISPR/Cas9 technology in wheat research  
  Ian Burke, Crop & Soil Sciences

2015

• Characterizing cider apple juice and varietal cider sensory characteristics to support new market development  
  Carol Miles, Horticulture

• Biodegradable agriculture mulches: Assessing potential for chemical migration in horticultural crops and their role in organic agriculture  
  Lisa Wasko DeVetter, Horticulture

• Development of foods with modified textures for infants and children with feeding difficulties  
  Carolyn Ross, School of Food Science

• Using a stable calcium isotope tracer to measure uptake and distribution of calcium in deciduous tree fruit  
  Lee Kalcsits, Horticulture

• Encapsulating micronutrients for developing functional foods  
  Shyam Sablani, Biological Systems Engineering

• A single-step method to map genes underlying phenotypes in multiple environment  
  Zhiwu Zhang, Crop & Soil Sciences

• Multi-scale Assessment of Phosphorus Pollution Potential in the Increasingly Urbanized Puget Sound Region  
  Joan Wu, Biological Systems Engineering

• Implications of Increased Northern Corridor Oil and Coal Movement on Washington Agriculture  
  Jeremy Sage, School of Economic Sciences

2014

• How will the Affordable Care Act Affect Health Coverage and Employment in the Agricultural Industry in the State of Washington  
  Bidisha Mandal, School of Economic Sciences

• Modeling the Recycle of Treated Wastewater as Dilution Water for a More Sustainable, Water-Balanced Anaerobic Digestion Process  
  Craig Frear, Center for Sustaining Agriculture & Natural Resources

• Exploring the Next Generation of Manure Treatment Technologies for Sustainable Animal Agriculture and Enhanced Environmental Quality  
  Pius Ndegwa, Biological Systems Engineering
• Deep Irrigation to Conserve Water and Advance Vineyard Management
  **Pete Jacoby**, Crop & Soil Sciences

• Developing high-throughput sensor technologies to screen water use efficiency in model crops
  **Sindhuja Sankaran**, Biological Systems Engineering

• Commercialization of New Crop Varieties
  **Jill McCluskey**, School of Economic Sciences

• Protective effects of apple against obesity and associated complications through modulation of gut microbiota
  **Giuliana Noratto**, School of Food Sciences

• Understanding of Food and Microbiological Properties at Elevated Temperatures to Improve Low-moisture Food Safety
  **Juming Tang**, Biological Systems Engineering

• Introducing Organic Quinoa Production Systems in the Palouse
  **John Reganold**, Crop & Soil Sciences

• Modulation of Rhizosphere Ecology and its Impacts on Crop Productivity
  **Joe Poovaiah**, Horticulture

• In-field Sensing and Decision Support System to Prevent Cherry Fruit Cracking due to Rainwater
  **Lav Khot**, Biological Systems Engineering

• Microbial Contribution to Organic Carbon Sequestration in Mineral Soil
  **Zhenqing Shi**, Crop & Soil Sciences

• Using biochar to sequester antibiotic residues during food animal production
  **Doug Call**, Veterinary Microbiology & Pathology

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2013

• Estimating Wheat Yield through Image Analysis and Spectral Estimation of Juvenile Plants
  **Arron Carter**, Crop & Soil Sciences

• Functional Foods Targeting AMPK and Sirt1 to Reduce Adiposity
  **Min Du**, Animal Science

• Phylogeography to Improve Resistance Breeding Against Columbia Root-Knot Nematode
  **Axel Elling**, Plant Pathology

• Bio-oil Stabilization and Blending with Vacuum Residual Oil for the Production of Aviation Fuels in Petroleum Refineries
  **Manuel Garcia-Perez**, Biological Systems Engineering

• Investing in Agricultural Sustainability through the Creation of Novel, Low Cost, Smart System to Measure Fluxes of Methane, Nitrous Oxide and Ammonia from Agricultural Ecosystems
  **Kristen Johnson**, Animal Science

• The Genetic Characterization and Field Utility of a New Indeterminate Species of Cool Season Grain
  **Stephen Jones**, Crop & Soil Sciences
• Grafting Watermelon: A New Sustainable Management Practice for Soilborne Disease and A New Value-added Enterprise for Washington
  Carol Miles, Horticulture

• Field Phenomics Platform Development
  Michael Pumphrey, Crop & Soil Sciences

• Survey of the Pacific Northwest for Incidence of Gumming Disease of Wheat and Grasses: Isolation of the Casual Agents and Vectors
  Brenda Schroeder, Plant Pathology

• Identifying Molecular Markers for Insecticide Resistance in Arthropod Pests
  Doug Walsh, Entomology

• Role of Flavin in Rhizobium-Legume Association
  Sanja Roje, Institute of Biological Chemistry

• Stress Resistance and Cross Protection in Foodborne Pathogens
  Mei-Jun Zhu, School of Food Science

2009

• Development of Novel Crop Varieties to Battle Wind and Water Erosion in the Palouse
  Scot Hulbert, Plant Pathology

• Cover Crops to Enhance Soil Productivity and Nitrogen Management In Organic and Transition Vegetable Production Systems
  Craig Cogger, Crop & Soil Sciences

• Influence of Nitrogen Fertility on the Susceptibility of Rhododendrons To Phytophthora Ramorum
  Rita Hummel, Center for Sustaining Agriculture & Natural Resources