Dietary Bioactive Agents and Functional Foods

DEPARTMENT OF FOOD SCIENCE AND TECHNOLOGY

IMPACTING THE WORLD THREE TIMES A DAY

DIETARY BIOACTIVE AGENTS & FUNCTIONAL FOODS

In the presence of declining health among the US population, there is a critical need for the development of foods that improve health and quality of life. Faculty in this emphasis area work toward reducing the prevalence of preventable, diet-related disease through the development of "healthy foods", with an emphasis on Nebraska commodities. Research involves understanding the disease preventing mechanisms of foods or isolated compounds from foods and the development of approaches to efficiently deliver these foods or compounds to the site of the body where they will do the most good.

	RESEARCH ACTIVITIES
DR. DEVIN ROSE *foodsci.unl.edu/drose*	The Rose Lab investigates the quality and chemical composition of whole grains. It also researches the impact of whole grain and dietary fiber containing foods on diet related disease prevention and determines how differences in chemical and physical properties of whole grains influence end-use quality.
DR. VICKI SCHLEGEL *foodsci.unl.edu/schlegel*	The Schlegel Lab characterizes natural bioactive agents and synergistic interactions within their natural matrix and other delivery matrices to promote a healthy cellular phenotype, (e.g., be it a non-virulent to virulent state in pathogens, or inflammatory state or anti-inflammatory state in macrophages.) This information is used to add value to an existing product or develop new functional foods.
DR. CURTIS WELLER *foodsci.unl.edu/weller*	The Weller Lab researches bioproducts engineering including the processing of agricultural commodities and physical properties determination. Concentration of research effort has been on refining of grain sorghum to recover high-value lipids and enhancing food safety through control of foodborne disease agents.
DR. JEYAM SUBBIAH *foodsci.unl.edu/subbiah*	The Subbiah Lab researches hyperspectral imaging and near-infrared spectroscopy systems for food safety applications. It also studies non-thermal preservation technologies such as pulsed electric field pasteurization. Dr. Subbiah is also working on predictive microbiology and risk assessment models.
DR. OZAN CIFTCI *foodsci.unl.edu/ciftci*	The Ciftci lab investigates particle formation using supercritical fluid technology to produce novel "natural" lipid-based micro and nanoparticles as controlled delivery systems of bioactives and functional food ingredients. Enzymatic production of structured lipids in supercritical fluids and the evaluation of functional properties and product applications of the developed products.

University of Nebraska Lincoln

Learn more at
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DR. YUE ZHANG *foodsci.unl.edu/zhang*	The research in Dr.Zhang's Lab is focused on the fabrication and characterization of food-grade delivery systems of bioactive food components and additives. Dr. Zhang has a particular interest on the encapsulation of bioactive peptides to achieve control release and related applications in food products.
DR. CHANGMOU XU *foodsci.unl.edu/xu*	Exploring functional ingredients (phytochemicals) in fruits, berries, and vegetables, and evaluating their bioactivities. Investigating the impact of factors (e.g. genetic variation, climates, processing technologies) on the composition of these phytochemicals. Developing fortified food products or innovational applications using phytochemicals in the laboratory bench scale.

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