

DIETARY BIOACTIVE AGENTS & FUNCTIONAL FOODS



DEPARTMENT OF
FOOD SCIENCE
AND TECHNOLOGY

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.

DR. ROBERT HUTKINS

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Studies of bacteria important in fermented foods and in human health. Understanding the molecular basis for metabolism of prebiotic sugars by lactic acid bacteria and bifidobacteria (so-called probiotic bacteria). Study of the anti-adhesive properties of oligosaccharides and the molecular mechanisms involved in pathogen binding to the surface of host cells.

DR. KAUSTAV MAJUMDER

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Explore the food proteins to produce protein-derived peptides with health beneficial biological properties. Assessing the potential therapeutic values of those peptides for the treatment and prevention of hypertension, diabetes, and associated metabolic disorders.

DR. DEVIN ROSE

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Evaluation of quality and chemical composition of whole grains. Impact of whole grain and dietary fiber containing foods on diet related disease prevention. Determine how differences in chemical and physical properties of whole grains influence end-use quality.

DR. VICKI SCHLEGEL

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Characterize 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. JEYAM SUBBIAH

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Multiphysics modeling of food processes for improving food quality and safety. Improving safety of low moisture foods using radiofrequency processing, extrusion, and gaseous technologies. Pulsed electric field for enhancing extraction of bioactives from fruits, vegetables and food processing waste for chemoprevention. Hyperspectral and multispectral imaging for predicting food quality.

DR. CURTIS WELLER

foodsci.unl.edu/weller

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. Enhancing food safety through control of foodborne disease agents.

DR. CHANGMOU XU

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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.

DR. YUE ZHANG

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Fabricating and characterizing protein-based delivery systems for bioactive food components including phytochemicals, enzymes, lipids, and probiotics, addressing the needs to produce functional foods.

IMPACTING THE WORLD THREE TIMES A DAY

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