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The Department of Food Science and Human Nutrition implements research, education, and outreach programs designed to promote a safe, nutritious, accessible, and affordable food supply that enhances human health. The basic human need for high-quality foods for optimal health and wellness drives the core of student education as stellar faculty and exceptional students work collectively toward learning, discovering, and disseminating new knowledge and in applying novel technologies in dietetics, food science, hospitality management, and human nutrition.

**SHELLEY NICKOLS-RICHARDSON** (professor and department head)
Dr. Nickols-Richardson helps individuals and families manage body weight and prevent obesity, metabolic syndrome, and osteoporosis through a variety of dietary, physical activity, and nutrition education approaches. She promotes dietary guidelines through community-based interventions and explores consumer behaviors around vegetable choice, preparation, and consumption.

**JAIME AMENGUAL TERRASA** (assistant professor)
Dr. Amengual contributes to the reduction of cardiovascular disease by examining how carotenoids and lipid metabolism interact to mediate atherosclerosis. Using animal models and cell culture techniques, he explores the structure and function of vitamin A and its metabolites to mitigate metabolic disease progression.

**JUAN ANDRADE** (assistant professor)
Dr. Andrade develops and implements technologies and strategies to reduce micronutrient deficiencies in food insecure countries worldwide. He designs and evaluates diagnostic tools to identify populations at risk, and then, develops cost-effective fortification strategies to address their nutrition needs. He leverages his work in different countries to create study abroad programs to train the next generation of competent leaders in food engineering and nutrition.

**ANNA ARTHUR PARKER** (assistant professor and Sylvia D. Stroup Scholar in Nutrition and Cancer)
Dr. Arthur works to improve overall health and longevity of adults with cancer through nutrition. She studies how diet influences health outcomes after cancer diagnosis. Her ultimate goal is to develop new and beneficial nutrition recommendations and medical nutrition therapies for cancer patients and survivors.

**HANS BLASCHEK** (professor emeritus)
Dr. Blaschek manipulates the genes of microorganisms for biotechnological applications, examines the feasibility of using food processing co-products as a raw material for value-added biotransformation, and develops integrated fermentation systems for biobutanol production and recovery. He is an expert in the commercialization of butanol fermentation using the solvent-producing clostridia.

**DAWN BOHN** (teaching assistant professor)
Dr. Bohn delivers award-winning instruction in the introductory food science and human nutrition course, advanced food science electives, and the senior capstone course in food product development. She directs the online Master’s of Science in food science program and teaches the online food chemistry course. Many of her student-centered instructional endeavors focus on creating opportunities to solve complex food science problems from raw material quality and handling through sensory exploration while developing novel food products.

**KEITH CADWALLADER** (professor)
Dr. Cadwallader contributes to the understanding of fundamental and applied flavor chemistry and analysis. He identifies and characterizes key flavor (aroma) compounds, determines the interaction of flavor compounds with food matrix components, and develops methods to stabilize labile potent flavor compounds for use in foods.

**KAREN CHAPMAN-NOVAKOFSKI** (professor and Extension specialist)
Dr. Chapman-Novakofski investigates how food choice impacts health. Through classes, web applications, and mobile apps, she demonstrates how understanding behavior is a key to supporting those with chronic diseases with making better choices. Her interests include diabetes, bone health, healthy aging, and consumer choices.
HONG CHEN (associate professor)
Dr. Chen focuses on molecular, biochemical, and nutrigenomic research that advances the knowledge of how diets affect each individual’s epigenome. Understanding nutrient regulation of genes during human development and carcinogenesis facilitates precision nutritional care for improved patient outcomes.

JILL CRAFT (clinical assistant professor)
Ms. Craft ensures that hospitality management students develop problem-solving skills to critically analyze managerial issues and implement practical solutions. She teaches, develops, mentors, and advises students to be successful managers and hospitality industry professionals.

ELVIRA DE MEJIA (professor)
Dr. de Mejia investigates bioactive peptides and proteins in foods that promote health benefits for reducing inflammation, markers of type 2 diabetes, cancer, and cardiovascular disease risk. She identifies and characterizes the functional properties of food components, notably flavonoids in ethnic teas, herbs, and berries.

SHARON DONOVAN (professor and Melissa M. Noel Endowed Chair in Nutrition and Health)
Dr. Donovan investigates dietary approaches to improve intestinal and brain development and the gut microbiome. She works with researchers in other fields to find ways to prevent childhood obesity and picky eating behaviors and to reduce the severity of symptoms in children with autism.

NICKI ENGESETH (professor)
Dr. Engeseth works to ensure optimal food quality and nutritional value of the food supply by investigating the impact of environmental growing conditions, processing, and storage on produce and oilseed quality, with emphasis on enzymatic action, lipids, and natural antioxidants.

JOHN ERDMAN (professor emeritus)
Dr. Erdman reduces the risk of prostate cancer by conducting studies on the bioavailability of carotenoids, biological effects of carotenoid metabolites, and use of ultrasound techniques for early detection of prostate cancer and its progression as related to atherosclerosis and non-alcohol liver disease. His work has helped establish dietary reference intakes for humans, as well as recommendations for food intake and dietary patterns to lower cancer risk and improve brain function during aging.

HAO FENG (professor)
Dr. Feng investigates new physical and chemical treatments to increase food safety and quality. He explores how innovative food processing methods contribute to enhanced nutrition in edible plants and seeds, and how novel engineering approaches improve processing efficiency and food quality.

BILL HELFERICH (professor and Diet, Women’s Health, and Aging Professor)
Dr. Helferich investigates diet and breast cancer growth and progression with a specific interest on botanical estrogens from soy and other dietary supplemental sources. He also has interest in how thermally abused oil can alter breast cancer metastasis using preclinical models.

HANNAH HOLSCHER (assistant professor)
Dr. Holscher studies how diet influences gut microbes. Using big data approaches, she studies the link between diet, gut microbes, and health and disease.

ELIZABETH JEFFERY (professor emerita)
Dr. Jeffery has identified many mechanisms by which cruciferous vegetables, such as broccoli and Brussels sprouts, lowers the risk of developing liver, prostate, and colorectal cancer in humans. She has shown that bioactive components of crucifers alter the production of certain enzymes, allowing for rapid removal of harmful compounds from the body before toxicity or carcinogenicity can occur.

YONG-SU JIN (associate professor)
Dr. Jin is pioneering the use of engineered microorganisms to deliver bioactive molecules and therapeutic proteins into the gut to prevent and treat gastrointestinal disease. He advances the use of engineered microorganisms for safe and sustainable production of value-added products from renewable biomass. He also optimizes genetic and metabolic processes within cells for enhanced production of target products while minimizing production of byproducts and waste.
JUSTINE KARDUCK (clinical assistant professor)
Ms. Karduck directs a top-ranked accredited Dietetics Education Program whose alumni achieve a 98% first-time pass rate on the national Registered Dietitian Certification Exam. As a former clinical dietitian and diabetes educator, she utilizes years of experience in the field to train future dietitians.

SOO-YEUN LEE (professor)
Dr. S-Y Lee investigates food systems intended for enhancing consumer health, such as low sodium and low sugar foods. She relates mealtime behavior and genetic predisposition to picky eating, develops nutritional therapies for population with gastrointestinal distress, and identifies context effect in sensory testing.

YOUNGSOO LEE (assistant professor)
Dr. Y Lee designs healthier food products by studying food processing and food engineering. His current research focuses on the food structure-sodium release relationship to develop sodium reduction strategies and novel technologies to deliver bioactive compounds to improve intestinal health. He is also an expert in spray drying and extrusion processes.

ZEYNEP MADAK-ERDOGAN (assistant professor)
Dr. Madak-Erdogan improves the quality of life for postmenopausal women and breast cancer survivors by understanding how diet and nutrition affect hormone action. Her lab uses multiscale modeling of –omics data from patient samples, animal models, and cell lines to understand the molecular basis of metabolic regulation by estrogen receptors and endocrine resistance.

JESSICA MADSON (clinical assistant professor)
Ms. Madson mentors graduate students who participate in the dietetic internship and are pursuing the career pathway to registered dietitian nutritionist credentialing. She makes sure all interns receive the highest level of practical work-related experiences to achieve all learning competencies for success in future careers. She secures supervised practice sites that meet and exceed standards set forth by the accrediting body for the profession.

MICHAEL MILLER (associate professor)
Dr. Miller solves problems related to various aspects of fermentation, in part to develop contamination solutions for industrial fermentations. He develops strategies to improve the safety of fermented dairy products, especially Hispanic-style cheeses. He evaluates the microbial metabolism of dietary components in the gut to maximize health benefits for humans.

MARCIA MONACO SIEGEL (research assistant professor)
Dr. Monaco Siegel develops strategies to optimize infant health to prevent diseases later in life by studying the benefits of breast milk and how it impacts the gut and the immune system.

SCOTT MORRIS (associate professor)
Dr. Morris investigates optical and acoustic Non-Destructive Evaluation in materials and in processes, and works with the optimization and security of production systems, namely food packaging systems. He analyzes data for production efficiency increases, reduction of supply chain diversion, and loss and counterfeiting in the food, pharmaceutical, and consumer product goods sectors.

MANABU NAKAMURA (associate professor)
Dr. Nakamura investigates the role of dietary essential fats on reducing infertility, inflammation, and chronic diseases. He studies how human bodies adapt their gene expression in response to positive or negative energy balances, as well as to varying macronutrient compositions for translation into effective obesity prevention strategies.

GRACIELA PADUA (research professor)
Dr. Padua advances the understanding of nano-scale protein organization and its applications in food, agricultural, and biomedical fields. She has developed nanoencapsulation systems to increase nutrient bioavailability and to retain the taste of fresh fruits.

YUAN-XIANG PAN (associate professor)
Dr. Pan investigates how molecular mechanisms of epigenetic regulation control physiological functions and chronic disease processes. He identifies novel epigenomic mechanisms that will lead to individualized nutritional interventions for specific health outcomes to enhance the well-being of humans.
M. YANINA PEPINO (assistant professor)
Dr. Pepino advances the understanding of the effects of taste perception on ingestive behavior and nutrient metabolism. She investigates bariatric surgery-induced weight loss on taste perception, eating and drinking, and the effects of consuming nonnutritive sweeteners on taste preference and blood sugar balance.

MELISSA PFLUGH PRESCOTT (assistant professor)
Dr. Prescott determines the impact of farm-to-school programs on farmers and food supply chain businesses, household consumptions patterns, and school choice, consumption, and plate waste. Using student-driven food systems campaigns promoting meal participation, vegetable consumption, and plate waste reduction, she promotes child nutrition through school-based programming.

SHELLY SCHMIDT (professor)
Dr. Schmidt develops strategies for the food industry to process shelf-stable, high-quality food products. She utilizes food materials science (i.e. water activity, isotherms, glass transition temperatures, and nuclear magnetic resonance spectroscopy) to identify relationships to the physical, chemical, and microbial stability and quality of food systems.

MATT STASIEWICZ (assistant professor)
Dr. Stasiewicz applies new tools in genomics and data science to food safety microbiology. He develops methods to identify when bacterial pathogens persist in food-associated environments and to clean corn that has been contaminated with toxins produced by fungi. His work takes global strides toward building risk-based food safety systems.

PAWAN TAKHAR (associate professor)
Dr. Takhar explores polymer mechanics coupled with movement of heat, moisture, and oil in porous foods to improve their quality during processing. He designs and solves complex mathematical models to optimize energy use and improve food processing and engineering methods.