Undergraduate Research Opportunities  
Updated Spring 2018

Students are encouraged to include the following when inquiring about undergraduate research opportunities: 1) when they are interested in doing the research (i.e. – current semester, summer, etc.), 2) undergraduate major, 3) what year in school they are 4) previous experiences, 5) availability, and 6) contact information.

Additionally, faculty members receive a large volume of e-mails. Students are encouraged to follow-up on first messages and inquire with faculty members again if they do not receive a reply. They may simply have not had an opportunity to respond to the initial message.

This is not an exhaustive list of opportunities. If you find a research area you are interested in working, do not hesitate to contact the faculty.

Hong Chen (Molecular Nutrition, Nutrient-gene Interaction).
The Chen lab focuses on understanding how foods/nutrients are sensed by cellular metabolic, signaling, and epigenetic pathways and how these responses shape our body during early development, disease development, and aging. Specific training includes analysis of gene expression, histological imaging and analysis, and big data analysis of various tissues and cells in animal models, human specimens, and cell cultures. **Will consider accepting undergraduate students committed to 8 hours a week for one year.**

Elvira De Mejia (Food Chemistry, Food Analysis, Nutritional Toxicology).
Research in Dr. De Mejia's laboratory includes novel flavonoids, from herbal teas, and bioactive peptides that contribute to human health. A focus in her laboratory over the past 4 years has been the study of the mechanism of action of proteins and peptides in soybean genotypes and soy products with biological potential against transformed human cells. While other legumes also contain bioactive peptides and proteins, the presence of anticancer peptides, such as lunasin, in soy-products makes soybean unique. Fellows in her laboratory would obtain multidisciplinary training in biochemical toxicology, enzymology, protein biochemistry and food chemistry. **Will consider accepting undergraduate students in Spring 2018.**

John Erdman (Biochemical/Molecular Nutrition, Clinical Nutrition)
One focus of my laboratory has been to evaluate the effects of tomato and lycopene on the development and progression of prostate cancer using animal models. Another is evaluating the impact of lutein on brain and eye function. **Will consider accepting undergraduate students starting Spring 2018.**

Elizabeth Jeffery (Biochemical and Pharmacological Nutrition)
Dr. Jeffery studies the health benefits of cruciferous vegetables, particularly broccoli. Study opportunities include harvesting, freeze-drying and analyzing broccoli and related species for bioactive compounds and enzymes. There are also cancer prevention studies that require diet formulation and feeding of rodents. **Will consider accepting undergraduate students.**

Hannah Holscher (Clinical Nutrition; Nutrition and Human Microbiome)
Research in Dr. Holscher’s laboratory focuses on the clinical application of nutritional sciences in healthy and diseased populations across the lifespan with an overarching goal of improving human health through dietary modulation of the gastrointestinal microbiome. Undergraduate researchers will have the opportunity to be involved in all phases of the research: conducting dietary interviews, analyzing nutrition data, preparing menus and meals, sample collection, and laboratory analyses. Undergraduates will have the opportunity to gain experience with a variety of research techniques ranging from molecular methods to bioinformatics. Interested students should send their resume when inquiring. An interview is required. **We are currently accepting students who will be committed for at least one year, including summer.**

**Yong-Su Jin** (Food Science)
Dr. Jin’s research focuses on discovery and understanding of genetic and environmental perturbations which elicit beneficial phenotypes of microorganism in the context of biotransformation of biomass into value-added products, such as biofuels, biochemical, and nutraceuticals. We will provide undergraduate students with training opportunities in microbiology, molecular biology, biochemistry, and fermentations technology in the course of performing specific projects relevant to the aforementioned themes. For more information of our group, visit our lab website at [http://jin.operwetware.org/](http://jin.operwetware.org/). More information can be found at [http://jin.operwetware.org/under_grad.html](http://jin.operwetware.org/under_grad.html) **Currently accepting undergraduate students.**

**Zeynep Madak-Erdogan**
Dr. Madak Erdogan studies how obesity drives chronic diseases like cancer and metabolic syndrome. We are using analysis of big data sets from ChIP-Seq, RNA-Seq, metabolomics experiments and various public databases, mouse models, and basic molecular and cell biology techniques. Interview and complete biosafety training are required. **Accepting 1 student who can contribute 10 hours/week that can commit for at least 2 years.**

**Manabu Nakamura** (Molecular Nutrition, Clinical Nutrition)
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. A few students will be considered for an on-going dietary weight loss trial (a clinical nutrition project). Typically, a commitment of 3-6 hours per week for 2 semesters or longer is expected **The opportunity is available Spring 2018 and beyond.**

**M. Yanina Pepino** (Ingestive Behavior)
Research in Dr. Pepino laboratory focuses on the analysis of individual differences in human taste perception and preferences, with an emphasis on sensory control of food and alcohol consumption. Dr Pepino's overall goal is to establish a research program that integrates analyses of taste perception with nutrient metabolism and the impact of dietary choices on health and disease. By using a combination of psychometrically sound validated sensory assessment methods, and metabolic research methods, we are currently studying: a) the effects of bariatric surgery-induced weight loss on flavor perception, eating behavior and alcohol drinking; b) the effects of non-nutritive sweeteners on taste preferences and glucose homeostasis; c) fat taste perception;and d) taste dysfunction in cancer survivors. We are currently accepting students who will be committed to work for at least 8 hrs. per week, for at least one year. Interview and complete biosafety training
are required. The opportunity is available Spring 2018.

Matthew Stasiewicz (Food Microbiology, Food Safety)
Dr. Stasiewicz’s laboratory studies applied problems in food safety microbiology. In particular, ways to track and control bacterial pathogens that persist in food associated environments, and ways to removing fungal toxins from cereals and other seeds. On these core topics, we are looking for undergraduates who would be willing to pair with graduate students to assist with project design, data collection, and analysis. For students interested in data analysis and statistics, there are also some projects available working with public data related to food recalls, outbreaks, and restaurant inspection data. Will consider accepting undergraduate students starting Spring 2018.
Related resources:

**FSHN 195 Introduction to Undergraduate Research**
Learn about research opportunities available to undergraduate students in the FSHN department, and find a laboratory that fits a student’s interests and education goals. Guest faculty members present research opportunities in their laboratory and then give a laboratory tour for students to learn more about the research activities there. Approved for S/U grading only. Offered in the spring semester.

[https://courses.illinois.edu/schedule/terms/FSHN/195](https://courses.illinois.edu/schedule/terms/FSHN/195)

**ACES Undergraduate Research Scholarship Program**
A $500 scholarship plus up to $1,000 for research expenses. Applications will be reviewed on a rolling basis

[http://academics.aces.illinois.edu/honors/undergraduate-research](http://academics.aces.illinois.edu/honors/undergraduate-research)