Summer Internship Program

Class of 2013

On May 20th, the 6th class of undergraduate students selected for the ACES Office of Research Summer Internship program, began an exciting summer of independent research. For the first time this summer, research is being conducted at three facilities, the Dixon Springs Agricultural Center (DSAC), the Orr Agricultural Research and Demonstration Center, and the University of Illinois at Chicago. Each research site hosted an initial meeting where the students were able to present their plans, carefully developed over the spring semester, to research advisors, research center mentors, stakeholders, and parents. The students will have eleven weeks to complete their research on-site. The results lead to poster presentations at the Undergraduate Research Symposium, peer-reviewed publications, and outcomes beneficial to the surrounding communities. At DSAC, Dr. de Mejia, Assistant Dean of Research, reminded the interns that they had an opportunity to work as a team to address real-life issues that are important for the region. Frank Ireland, DCAC animal scientist, gave the interns an overview of the largest research center for U of I that was dedicated in 1935 and has made both local and global impacts in agricultural research. Frank emphasized that it will be an exciting summer of research with many memorable experiences. This first newsletter will introduce to the fourteen outstanding interns of the 2013 class.
Improving Sensory Aspects of Food

Raspberry Jam

Karen Chen is a sophomore in Food Science and Human Nutrition and a James Scholar. She has a passion for research and began participating as an undergraduate research assistant her freshman year. Karen has worked in the Sensory Laboratory, where she has helped with sensory studies on chocolate, French fries, and tomato soup. This summer Karen will be making raspberry jam. She will study the effect of various gelling agents on the viscosity and sensory properties of jam. In previous research Karen has served in a supporting role, so she is excited about seeing a project from conception through to completion. She wants to use the skills she learns this summer to continue doing research that will help better the future of berry products.

Baked Goods

Rachel Cote has been tweaking recipes in order to improve them for as long as she can remember. Her interest in food has led her to pursue a degree in Food Science and Human Nutrition with a concentration in Food Science. Currently a junior, she has been actively involved and served as the President for the Cooking Club, an organization that sponsors cooking demonstrations and tours of local food establishments. This summer Rachel will be able to put her scientific, as well as cooking, skills to the test. She will be baking cookies and cakes in order to determine how the quality and acceptability of baked goods is influenced by agronomic practices that improve wheat yield, such as nitrogen application. Rachel is excited about solving research problems and being a part of the Dixon Springs intern team this summer.
Feasibility of On-Farm Tomato Processing

Ying Meng is obtaining a Professional Masters in Science (PMS) from Food Science and Human Nutrition. The PMS program combines strong science training with business skills, such as finance, marketing and project management. A native of China, Ying uses her language proficiency to help others by volunteering as an interpreter for the International Students and Scholar Services. Using her unique educational experience, this summer Ying will determine the feasibility and economic benefits of building an on-farm processing plant that will allow tomato farmers to directly process tomatoes during the surplus season into various shelf-stable products.

Effects of Invasive Plants on Soil Quality

Scott Cinel will be a senior in the Department of Natural Resources and Environmental Sciences. As an undergraduate he has participated in several research projects, including studying predator behaviors in largemouth bass, determining the consequences of prairie fires on grassland birds and, as part of the internship program last summer, elucidating the effects of invasive plants on songbird populations. Scott's experience last summer has helped him to focus his academic studies on wildlife conservation and confirmed his desire to pursue a doctoral degree in environmental sciences. He plans to put his prior experience and enthusiasm to good use this summer at DSAC, where he will study the difference in soil quality in areas overtaken by the invasive plant, Japanese stiltgrass. Scott is excited about another summer of performing professional-level research that can aid the economically-stressed southern Illinois region.
Cattle Nutrition

Forage Optimization

Mary West started job shadowing and working with local veterinarians during high school. She is currently a junior majoring in animal science with a minor in chemistry. Mary is actively involved in the Pre-Vet Club and helps direct their fund raising events. After hearing firsthand about the experiences a previous intern had in the program, Mary was convinced that she wanted to participate in a research project at Dixon Springs. She will continue and expand upon a study that began last summer on using alternate forages to reduce tall fescue toxicity in growing cattle. Mary hopes this summer will help her take a giant leap toward her goal of obtaining her doctorate in veterinary medicine.

Right: Mary pitches in at the cattle barns. Left: Nick tests his height in the Miscanthus fields.

Miscanthus Suitability

Nicolas Reitz is a junior in Food Science and Human Nutrition pursing a major in food science and a double minor in international agriculture and chemistry. Nick’s interests have led him to perform undergraduate research on phenols in corn, do a study abroad learning about vegetable and grain agriculture in France, and participate in intermural handball and soccer. This summer Nick will study the ability of the bioenergy crop Miscanthus to serve as a forage crop for cows. He plans to apply to graduate school so that he can pursue research and education in food science that will improve food and the overall quality of life for people around the world.
Optimizing Cattle Reproduction and Welfare

Bull Fertility

Growing up in Urbana, Sandra Jimenez has taken care of a wide variety of pets, including dogs, cats, parakeets, hamsters, chickens, and a sugar glider. Sandra's desire to become a veterinarian began with her interest in animals, but has been solidified with positive experiences as a high school student in the Research Apprentice Program and as an intern at the Veterinary Medicine Clinic. Currently a junior in the Animal Sciences department, Sandra serves as Vice President for student government and mentors Parkland Latino students. Her research will expand on a study that was started last summer on the effect of pyrethroid insecticides on bull fertility. In particular, she will use three different application methods, including pour on, ear tags, and premise sprays. Sandra is excited to apply the knowledge she's gained from the classroom to real world, hands-on experiences at Dixon Springs.

Bull Wellness

Erica Navis found her life's passion while growing up on a family farm raising dairy goats. She has always enjoyed animals and as a sophomore in Animal Sciences plans to continue on to veterinary school. More recently, Erica has experienced both the challenges and rewards of research by working as an undergraduate research assistant on the Dairy Farm at the University of Illinois. She has experienced how fulfilling it is to use research to solve problems. This summer she will conduct studies to determine the welfare of bulls used for reproduction. Erica will mimic the standard procedures used by beef cattle farms for electroejaculation and determine the effect of the procedure on bull temperament over time.
Bioenergy Crop Conversion

Hoi Chun Ho is a junior transfer student in Agricultural and Biological Engineering. In his first year at Illinois, he has participated in undergraduate research studying algae growth in waste water, become a member of the Illini Algae Club that is working on a proposal to use campus food waste for conversion into crude oil, and helped build a stove for the Haiti Clean Stove Project that uses sugarcane as fuel. This summer Hoi Chun is going to be developing a system to convert the bioenergy crop Miscanthus into a biogas using anaerobic digestion. After graduation, Hoi plans to attend graduate school so that he can work to develop technologies that will help address the energy crisis and benefit people’s lives.

Hoi Chun tries out a tractor at the Dixon Springs Agricultural Center.

Water Quality and Conservation

Water Quality

Amanda Eich is a very talented senior in Agricultural and Biological Engineering with a concentration in Water and Soil Resources. She is also earning a degree in Clarinet Performance, plays in the University Symphony Orchestra, and gives lessons to young children. During her studies at Illinois, Amanda has helped design a drainage system for a local farmer, created a renewable energy system for a rural community, and planned the designs for managing the water resources in Tolono, IL. In order to develop methods for improving water quality, Amanda, in collaboration with the Council on Best Management Practices, will determine the profile of nitrogen movement within a field over the entire crop season.

Amanda (left) and Ferisca (right) are collecting soil samples in a test plot at the Orr Research and Demonstration Center.

Barge Traffic

Ferisca Putri is interested in renewable energy solutions and soil and water conservation. As a junior in Agricultural and Biological Engineering, Ferisca has participated in undergraduate research studying algae growth in waste water, helped with soil quality and crop harvest at the Bioenergy Farm, and served as the Vice President for the Illini Algae Club. This summer, in collaboration with the US Geological Survey, Ferisca will study the effect of barge traffic on sediment concentration and other water quality properties in the Illinois River. Ferisca is excited about gaining hands-on experience in conducting a research project from beginning to end.
Chicago School System Learning Gardens

Caroline Hoff is a junior transfer student in the Agricultural Education Program. Although she has only been at Illinois a short time, she rapidly got involved in undergraduate research studying thornless blackberries. She is also a member of Roots and Shoots, an organization that runs the Student Sustainable Farm and teaches children about the environment. Last summer Caroline was a farm intern for the Howard G. Buffet Foundation, where she worked with the Central Illinois Foodbank and learned how to harvest sweet corn. This summer Caroline will develop lesson plans for the Illinois school learning gardens. The spaces (pictured below) serve an outdoor learning and play area for kids. Caroline is interested in food programs that involve collaborative agricultural education and in the future wants to ensure eligible families know how to benefit from available programs.

Natasha Wilkins is interested in the economic viability of urban gardening, since an increasing amount of food will need to be produced in urban environments as the world grows. As a junior in Agricultural and Consumer Economics, she has chosen a focus on Public Policy and is obtaining a minor in Urban Planning. She has participated in providing aid to several urban environments, including East St. Louis, Cape Town, South Africa, and Choluteca, Honduras. This summer Natasha will be studying the bottlenecks that might limit the implementation of the Chicago Public School's Wellness Plan. The Wellness Plan is in response to legislation that requires schools to ensure students are active and receiving proper nutrition during the school day.

Jasmine Washington is a sophomore in Human and Community Development. Her participation through the Research Apprentice Program as a high school student helped Jasmine develop critical thinking skills, learn about the ethics of research, and gain a better understanding of the research process. She enjoys helping others at all stages of life and wants to find a job assisting communities in the future. This summer Jasmine will get to help the Chicago Public Schools by conducting a survey that will gather information and help to determine the education needs of learning gardens. The gardens allow children to take part in the process of growing food and give them a chance to learn life skills, such as teamwork.
Contributors

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Thank You!

The Office of Research would like to thank all of the advisors, mentors and stakeholders for their generous contributions to our Summer Internship Program past and present. This program is enriched because of you!

Sponsored by: The ACES Office of Research
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*Pictures contributed by the summer interns and Stephanie Henry