

SPRING 2023 PAID RESEARCH OPPORTUNITIES IN THE COLLEGE OF AGRICULTURE, FOOD AND ENVIRONMENT

| UK DEPARTMENT | FACULTY CONTACT | PROJECT DESCRIPTION | REQUIRED EXPERIENCE |
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| Biosystems and Agricultural Engineering | Jian Shi, j.shi@uky.edu | Waste is a terrible thing to waste! We are looking for passionate undergraduate interns to research biofuels and bioproducts from waste materials. The project is about converting municipal solid wastes (paper, plastics, food waste) to sustainable aviation fuel. The students will help to characterize the waste samples using wet chemistry/imaging-based techniques and use fast-pyrolysis to produce fuel molecules from the waste. | Training will be provided, and previous experience in a lab setting is preferred but not required. The position is most suitable to students majoring in engineering or science, but we are open to anyone who has the interest to learn! |
| Biosystems and Agricultural Engineering | Tiffany Messer, Tiffany.Messer@uky.edu | We have multiple openings for Spring 2023 and Summer 2023 for undergraduate research assistants interested in working on research projects related to water quality. Projects involve laboratory chemistry sample analysis, laboratory based experiments related to emerging contaminants in water, installing outdoor river and weather monitoring equipment, collecting water samples around Kentucky, and collecting stormwater samples in the Lexington area. | Previous experience working in a chemistry lab is preferred, but not required. Ability and interest to work in teams is vital. |
| Biosystems and Agricultural Engineering | Joseph Dvorak, joe.dvorak@uky.edu | I am searching for undergraduates who would like to work on designing parts for hybrid drivetrains and designing improved components for aquaculture systems (cleaning systems for oxygen sensors, slow rotating paddle wheels, raceway structures, etc.). While these efforts are part of larger group projects, much of the day-to-day work is completing designs and ensuring that the parts that you commit to build are built properly. Work can include everything from drawing new designs to fabricating designs to working with professional staff to fabricate complex parts to installing and testing the design in final intended usage. | Engineering major or considerable experience with operating machine shop tools. |
| Entomology | Julian Dupuis, julian.dupuis@uky.edu | We have ongoing research projects using specimen data from the University of Kentucky Insect Collection, which is the largest collection of insect specimens in the state. These projects involve digitizing and databasing specimen records and using these data to answer evolutionary and ecological questions about insect diversity. | The only prerequisite is an interest in insects! This will be specimen-based research so experience with pinned insects is beneficial. |
| Entomology | Jeff Howell, jeff.howell@uky.edu | The Palli lab is seeking a motivated undergraduate student to assist with our research. Our work largely focuses on insect physiology and pest management using novel genetic approaches, such as gene silencing and editing. Primary responsibilities will include insect rearing, laboratory maintenance, and assisting with experiments (i.e. insect bioassays) under the supervision of the lab manager and/or postdoctoral scholars. Interested students will also have opportunities to develop skills in molecular techniques and cell culture, and may eventually have the ability to work on their own independent research project. | Training will be provided and previous experience is not required. |
| Plant and Soil Science | Lauren Brzozowski, lauren.brzozowski@uky.edu | The Brzozowski Lab works on breeding and genetics of crop plants for sustainable agricultural systems. We currently work with oats and rye, and are interested in understanding the genes that contribute to nutrition, flavor and stress resilience, as well as breeding new plant varieties. In this work, we integrate a variety of techniques, including genetics, genomics, transcriptomics and metabolomics, that complement our field-based research. Work in the semester will include working with plants and seeds in the greenhouse and field (research farm), and summer research will primarily be conducted on the research farm. Opportunities for molecular lab work are also available for students with molecular biology experience. " | No previous experience required. |
| Plant and Soil Sciences | Hanna Poffenbarger, hanna.poffenbarger@uky.edu | The Agroecosystem Nutrient Cycling Lab in the Department of Plant and Soil Sciences is hiring research assistants. The students will assist with research testing the effects of management practices on root growth, cover crop growth, and soil carbon and nitrogen dynamics. Work will be conducted in the laboratory and in the field. Read more at www.poffenbargerlab.com | The ideal applicant will have a strong interest in soil science and agroecology, experience conducting lab and/or field research, good attention to detail, and the ability to work outside in all conditions. English proficiency and a valid driver's license are required. |
| *Plant and Soil Sciences | Erin Haramoto, erin.haramoto@uky.edu | We research cover crops -- an important component of agroecosystems that help to improve sustainability. Specifically, we study cover crop agronomy (how our management influences their growth) and how cover crops interact with weeds. Our research is primarily at North Farm, with some campus lab work during the spring semester. Join us to learn more about how this important practice works in Kentucky and across our region! | No specific experience is needed. Students should have good attention to detail, interest in learning, and be responsible. |
| *Plant and Soil Sciences | Chad Lee, Chad.Lee@uky.edu | Field research project(s) in corn, soybean, and/or rye agronomic management studies. | An initial crops course, soils course, or related subject material is helpful but not required. |
| Veterinary Science - Gluck Equine Research Center | Allen Page, a.page@uky.edu | The focus of our research group is on the inflammatory response to exercise and injury in equine athletes. Most of our work looks at messenger RNA expression using real-time PCR, so this would be a great opportunity to learn more about molecular biology. We currently have multiple projects working on a variety of different questions along these lines and are looking for at least one student to help with sample organization, processing, and analysis. We also have a project this Spring at the research farm where a student would be able to get hands-on research experience with our departmental horses. | Lab experience is preferred but not required. If there is an interest in helping with the hands-on horse project, horse handling experience is strongly preferred but not required. |
| *Veterinary Science - Gluck Equine Research Center | Lutz Goehring, l.goehring@uky.edu | It is a surveillance project for equine respiratory tract pathogens similar to waste water testing during the Covid-19 pandemic. | Experience with horses is required, we'll teach the rest. |

***project will be under way later this semester (Spring 2023); all other labs have immediate openings**