

Spring 2024 Work Study Positions

Biomedical Engineering

Job Description:

Jason Gleghorn's lab in the Biomedical Engineering department strives to address complex physiological problems at the interface of engineering and medicine. His group is interested in working on complex problems using innovative and multi-disciplinary approaches, including engineering, biology, chemistry, and material science. The lab has worked to develop novel drug delivery vehicles for treatment of diseases that suffer from inefficient systemic delivery, such as cancer and HIV. Lab assays have been developed to assess carrier production and efficacy. UDRAW students are expected to learn the pipeline for assessing carrier optimization and aid in this process.

Several projects are open.

Project #1: Analysis of small molecule therapeutic concentrations in tissues via mass spectrometry analysis.

Project #2: Manufacturing microfluidic devices for vascular tissue modeling.

Project #3: Characterization of drug release profiles from various carrier formulations.

The research assistant will be included as a member of the Gleghorn group and would participate in weekly lab meetings and will talk multiple times per week with the graduate student mentor.

Required Skills:

- Be in good academic standing (GPA of 3.0 or above); GPA > 3.6 preferred.
- Some background and/or interest in biology, drug delivery, disease models, or engineering.
- Diligent, organized, and attentive to details
- Good time-management skills
- Students interested in graduate school are preferred

Time commitment: Approximately 10-12 hours per week, depending on the student's availability.

Contact: Prof. Jason Gleghorn via email (gleghorn@udel.edu)

Cellular Engineering and Applied Synthetic Biology / Chemical Engineering

Job Description

The Cellular Engineering & Applied Synthetic Biology Lab, led by Prof. Mark Blenner, engineers biological systems to solve problems in sustainability, human health, and national defense. The lab generates systems level data and creates synthetic biology tools to speed the design, build, test cycle for yeast, mammalian cells, and microbial communities. His group is interested in solving problems in complex environments, such as biomanufacturing, and wild environments outside the lab. UDRAW students are expected to learn the various microbiological, genetic

Several projects are open.

Project #1: Engineering mammalian cells for biopharmaceutical production.

Project #2: Engineering yeast for the production of sustainable chemicals and food products.

Project #3: Identifying insect gut microbes associated with increased plastic degradation.

Project #4: Study of plastic degrading enzymes and accessory proteins.

The research assistant will be included as a member of the Blenner group and would participate in weekly lab meetings and will talk multiple times per week with the graduate student mentor.

Required Skills:

- Be in good academic standing (GPA of 3.0 or above); GPA > 3.6 preferred.
- Some background and/or interest in biochemistry, microbiology, biomolecular, chemical engineering, or bioengineering
- Diligent, organized, and attentive to details
- Good time-management skills
- Students interested in graduate school are preferred

Time commitment: Approximately 10-12 hours per week, depending on the student's availability

Contact: Prof. Mark Blenner via email (blenner@udel.edu)

Cellular Engineering and Applied Synthetic Biology / Chemical Engineering

Title: Synthetic Biology Lab Manager / Administration

Lab: Cellular Engineering & Applied Synthetic Biology / Chemical Engineering

Job Description: The Cellular Engineering & Applied Synthetic Biology Lab, led by Prof. Mark Blenner, engineers biological systems to solve problems in sustainability, human health, and national defense. In some projects, the outcome is engineered microbes capable of making value added compounds in a renewable and petroleum-free manner. In other projects, we are applying synthetic biology to mammalian cell cultures to improve production of biopharmaceuticals, gene therapy vectors, and cell therapies. In yet other projects, we are discovering biological systems for waste plastic recovery, degradation, and upcycling.

Our lab is looking for someone to coordinate lab orders, stocking, general upkeep and standard common reagent preparation. The position does involve doing some amount of bench work, but focuses more on supporting the research activities of the lab.

Required Skills:

- Be in good academic standing (GPA of 3.0 or above)
- Some background and/or interest in laboratory operations.
- Diligent, very organized, and attentive to details
- Good time-management skills

Time commitment: Approximately 10 hours per week, depending on the student's availability

Contact: Prof. Mark Blenner via email (blenner@udel.edu)

Chemistry and Biochemistry

Project Description: High Throughput Experimentation (HTE) is a set of workflows to collect chemical reaction data in parallel to enable reaction optimization, data set generation, and new reaction discovery. Key to effective HTE is efficient and robust chemical data management, however existing tools are limited or very expensive. To standardize data formats and ensure routine indexing of data, we have developed a tandem set of workbooks and an indexing/visualization program, however, the vast majority of historical data generated in the lab is not currently stored according to the lab's schema, nor is it currently indexed. We are seeking undergraduate researchers to work on converting old data to this standard format and to help develop key tools for the program related to chemical inventory management and automation of data validation.

Required Skills:

- Good skills in Excel and Python
- Knowledge of SQL
- Willingness to occasionally work in a chemical lab and with instruments for chemical handling, though very limited chemical handling will be involved
- Some background in organic chemistry will be helpful

Time Commitment: 5-10 hours/week, depending on availability

Contact: Jessica Sampson (jrsampso@udel.edu) for more information and to apply.
More information about the UD HTE center can be found at <https://sites.udel.edu/htecenter/>

Communication and Media

Project Description: Dr. Ellithorpe's lab conducts research related to media use and media effects, especially topics such as video games and decision making, health behaviors, and media enjoyment. Research assistants will work with Dr. Ellithorpe and the graduate students in the lab to run lab studies, assign credit in SONA for online studies, and help design, create, and test stimuli for studies. RAs will also be expected to attend the biweekly lab meetings (schedule allowing).

Required skills: Interest in communication and media, familiarity with video game controls (console and/or PC). Further training will be provided.

Preferred skills: Experience with video and photo editing software is a plus, but not necessary.

Time required: Up to 10 hours per week, flexible.

Contact: Email Dr. Ellithorpe at mellitho@udel.edu with your CV, a description of your interest in the position, and the skills you would bring to the lab.

Education

Project Description: We are looking for motivated and responsible students to join our team as undergraduate research assistants for our project, Paving the Way for Fractions: Exploring Foundational Concepts in First Grade (PI: Dr. Nancy Jordan). RAs will be able to conduct research directly in local elementary schools with first graders. This experience will be especially beneficial to students pursuing a career in education, psychology, or cognitive science; however, students from all majors are welcome to apply.

Qualifications: Some daytime availability (8a-2p), experience working with/caring for children, and an interest in how children learn early math concepts.

Time commitment: Up to 10 hours/week

Contact: Eva Redican (evared@udel.edu) for more information or to apply.

English

Project Description: Prof. Siobhan Carroll is researching the history of creative writing in the 20th and 21st Century. She is looking for a research assistant to read through archived copies of Writer's Digest magazine from 1970-2001 to identify articles on plot and summarize their advice. The project is aimed at uncovering how attitudes toward "proper" plot structure and character agency has changed over time.

Preferred Skills: Research assistants should be well-organized and self-motivated. The ability to read quickly is a valued skill for this position.

Time Commitment: 5 hours / week, arranged around the student's other commitments. Payment is the standard Work Study hourly rate.

Contact: Prof. Carroll at sicarrol@udel.edu

Entomology and Wildlife Ecology

Position description: The [Agricultural Entomology Lab](#) at University of Delaware is seeking undergraduate students to assist with projects aiming to develop AI-based tools to monitor insect pests of specialty crops (e.g., lima beans, mushrooms, tomatoes, watermelons). Undergraduate student researchers will assist with identifying and labeling insects on photos of sticky cards used to monitor insect pests. These labeled images will ultimately be used to train a deep learning algorithm to automate the detection of insect pests on sticky cards. Ample training will be provided to accomplish these tasks. Any students interested in biology, ecology, and/or insects are strongly encouraged to apply.

Time commitment: Flexible; must be able to work for short blocks of time 2-3 days a week, but probably not more than 10 hours/week.

Contact: To apply, please contact Dr. Mike Crossley at crossley@udel.edu.





Human Development and Family Sciences

University of Delaware work study students are needed to help establish, maintain, and strengthen community-engagement and participation in anti-racism research in K-8 schools across Delaware. **Community Ambassadors** will be supervised by Tia Barnes, PhD. Ambassadors will also work closely with Danielle Hatchimonji, PhD, Kira Branch, PsyD, and other members of the Actions Against Racism team from Nemours Children's Health in addition to collaborators and staff members in Delaware schools.

This position is an opportunity for students interested in a youth-serving profession like teaching or social work, or for those interested in healthcare professions, like medicine, public health, counseling, or psychology. Community Ambassadors can choose to focus on clinical/teaching skill development, research skill development, or both.

The position is available immediately and is in-person across schools in Delaware.

Job Duties:

1. Community Ambassadors will make approximately one visit per week to a specific Delaware school to support classroom teachers and observe school practices that support social-emotional and anti-racist development among staff and students.
2. The time requirement is approximately 10 hours per week, including transportation to/from school, school visit, and supervision meetings with research and clinical staff from the Actions Against Racism team.
3. If accepted as a Community Ambassador, students will need to complete the appropriate onboarding in a timely manner to be able to visit schools.

Position Requirements:

- Work study student enrolled at the University of Delaware.
- Effective verbal and written communication skills.
- Comfortable establishing rapport with new people.
- Must be able to coordinate and establish priorities among diverse tasks.
- Previous experience with schools or working with children is preferred.
- Must have reliable transportation to schools.

Send resume/CV and cover letter outlining your qualifications and experience, including why you are interested in the position and how it fits with your future career goals to actionsagainstracism@nemours.org with the subject line: Community Ambassador Position.

Marine Science and Policy

Job Description

The Carlisle Lab in the School of Marine Science and Policy (College of Earth, Ocean, and the Environment) is seeking an undergraduate student to work on projects using stable isotope analysis (SIA) to investigate a variety of marine ecological questions. Some of the current SIA projects include investigating the ecological role of sharks in coastal Delaware and Virginia as well as building a food web model of an oyster reef within Delaware Bay. We are seeking an undergraduate student to assist in the laboratory processing of tissue samples for SIA. This work will include all steps needed to prepare SIA samples for processing including fish ID/dissection, chemical treatments on samples, and boating samples for SIA analysis. The undergraduate student will not only work directly on active research, but they will also develop valuable laboratory skills and learn relevant theory. The expected time commitment for this position is 5-10 hours/week and the laboratory work will take place at UD's marine campus in Lewes.

Qualifications

- Able to work on the Lewes campus at least 1 day a week
- Strong organizational skills
- Background or interest in marine ecology

Contact: Dr. Aaron Carlisle (carlisle@udel.edu)

Plant and Soil Science

Project Description: We are seeking a student who is interested in environmental science and sustainable agriculture to assist with a data synthesis project on greenhouse gas emissions and winter cover crops. This is a collaborative research project that will involve reading through the scientific literature and extracting data from papers, organizing data, and regularly sharing findings with a group of researchers. Additional tasks may include field work such as collecting and processing soil or greenhouse gas samples or wet lab chemistry work.

Required Skills: Ability to read scientific papers and extract key information, attention to detail, and good organizational skills.

Time required: Up to 10 hours per week, flexible.

Contact: Email Alex Huddell at ahuddell@udel.edu with the subject line "**UDRAW position application**". Please send the following information:

1. Resume/CV
2. Short description of your interest in the position
3. Weekday availability

Plant and Soil Science

Department of Plant and Soil Sciences: Greenhouse/Indoor/Space Crop Production

Project description: Research at the Delaware Indoor Ag Lab (DIAL, <https://www.indooraglab.com/>) is supported by agencies including NASA and USDA. We aim to better understand how environmental factors (e.g., light, humidity, carbon dioxide, and nutrient inputs) affect the growth and quality attributes of food and flower crops. The Undergraduate Research Assistant will facilitate controlled-environment agriculture research

tasks (e.g., experimental setup, routine plant care, data collection, and lab maintenance) in greenhouse/indoor/space crop production.

Requirements: You are self-motivated, interested in controlled-environment plant research, punctual, trustworthy, willing to learn, meticulous with great attention to detail, excellent at time management skills, experienced with data entry and organization in Excel, able to move heavy objects (up to 50 lbs.), able to work on some weekends and holidays, able to work well with others, and responsive and adaptive to work needs.

Time commitment: The position requires daily routine plant checks during experiments and approximately 10 to 15 hours of work per week, which can fluctuate depending on tasks and research needs. Work will be performed on South Campus in Fischer Greenhouse and Townsend Hall.

Contact: Dr. Qingwu Meng (qwmeng@udel.edu). Include in your email a statement of interest and experience, a resume/CV, an unofficial transcript, and contact information of two references.

Psychology

Project Description:

Do you want to take part in *engaging projects* while being mentored? Are you interested in the interdisciplinary studies of *education, psychology, learning, mathematics, cognitive science, and motivation*? Join M³ Lab as an Undergraduate Research Assistant!

In the M³ (“M-Cubed”) Lab, Dr. Christina Barbieri’s various projects have a range of remote and in-person activities, such as analyzing students’ problem-solving skills, working with children to collect data, creating databases, and assisting the lab with projects. Much of our research focuses on improving equitable math learning strategies and classroom belonging for students at risk for low math achievement (e.g., underrepresented minority students, low SES students). To learn more about our lab, visit <https://sites.udel.edu/m3-lab/>.

Required Skills

- Eligible for work study – If you are not sure, please contact financial aid.
- Good academic standing (GPA of 3.0 or higher)
- Have a stable Wifi connection & access to a laptop
- Interested in student thinking and learning
- Diligent, organized and attentive to detail
- Good time-management skills

Recommended Skills:

Experience using Excel and/or R and/or SPSS and experience tutoring mathematics (any grade level) is a plus. Students able to think about and discuss mathematics, who are interested in

collecting data with kids in a local school or students interested in graduate school are encouraged to apply. Preference given to students available for more than one semester.

Time Commitment: 8-10 hours per week, excluding finals and breaks. Summer opportunities are also available.

Contact: Email Gabby Morra (gmorra@udel.edu) for more information or to apply.