

UDRAW SPRING 2021 PROJECTS

ART HISTORY/LATIN AMERICAN AND IBERIAN STUDIES

Research and Editorial Assistant

Job Description: The research and editorial assistant will work with Dr. Mónica Domínguez Torres in the final production stages of her book *Pearls for the Crown: European Courtly Art and the Atlantic Pearl Trade, 1498-1728*. The book discusses a selection of artworks related to the Atlantic pearl industry in order to show how these under-studied artifacts articulated early modern ideas about imperial expansion, providential wealth, and human mastery over nature, all notions of crucial importance in courtly circles linked to the Spanish Crown. Under Dr. Domínguez's direction, the Undergraduate Research Scholar will be responsible for conducting focused research in early modern inventories; completing bibliographic references; compiling a full bibliography; and creating a permissions log for all the images that illustrate the manuscript (about 150). Training will be provided.

Required Skills: interest in Art History, Material Culture Studies, and/or the Early Modern Iberian World; attention to detail; excellent organization skills; ability to work independently

Preferred Skills: reading knowledge of Spanish, German, Latin or Italian; familiarity with Google Sheets and Google Docs; good proofreading skills; willingness to work for two semesters.

Time Required: Approximately 5 to 10 hours per week, which can be organized according to the student's schedule. Meetings of about 30 min will be held via Zoom every two weeks.

To Apply: send a letter of interest listing two references, along with an unofficial transcript, to Prof. Mónica Domínguez Torres (monicadt@udel.edu).

ART AND DESIGN

Assistive Devices for People with Physical Disabilities

Position: Research Assistant

Job Description: Assisting Associate Professor Ashley John Pigford with his creative research, you will be responsible for myriad tasks including: internet research, preparing and processing user research, graphic/website design and maintenance, social media strategy/management and (potentially) electronics, physical computing and fabrication assistance (if applicable). Undergraduate and graduate students from any major are encouraged to apply. The most important skills you will need for this position are a strong work ethic, organized nature, self-motivation and a desire to help other people.

More information about Professor Pigford's research: <https://youtu.be/RSQTWi6K0bA>

Time commitment: Approximately 5-10 hours per week, on average.

To Apply: Send an email with your full name, major, expected graduation year and a brief statement describing your interest and aptitude for this position to Professor Pigford at design@udel.edu

BEHAVIORAL HEALTH AND NUTRITION

Dr. Kim's laboratory is conducting research projects related to diet and disease prevention (e.g., cancers, obesity, and type 2 diabetes). Under Dr. Kim's guidance, undergraduate researchers will be assisting a research project investigating preventive potential and underlying molecular mechanisms of apiaceous vegetables against a cigarette toxicant in genetically engineered mice. In addition, we are also conducting a research project to investigate how dietary fructose can compromise carcinogen metabolism using cell model and animal model. Depending upon their interest, student(s) will decide a project whichever they would like to embark.

The undergraduate researchers will be working with graduate students and/or post-doctoral researcher of our lab. Biochemistry/biology/nutritional biochemistry/toxicology background would be helpful. Previous lab experiences (such as cell culture, animal handling, gene and protein expression, analytical analyses) would be plus but not necessary. Interpersonal skills are necessary. Should be self-motivated and open to learn new techniques.

Approximately 10-12 hrs required per week. Contact Prof. Jae Kyeom Kim (jkkim@udel.edu) for more information.

BIOLOGICAL SCIENCES

The goal of this work study opportunity is to revise and develop spreadsheet modules for this website which is associated with the Biological ESTEEM Project: Excel Simulations and Tools for Exploratory, Experiential Mathematics. The project has succeeded over the past 15 years in helping many biologists and biology students appreciate the power and utility of mathematics as well as providing tools for analysis, modeling, and interpretation. These modules have been used by students and professors both nationally and internationally.

Previous students have been recruited for graduate school and work opportunities based on the modules that they developed as part of their portfolio. Students from any major may apply, and both art

and engineering students have done exceptional work on this project. (For samples of their work see <<http://bioquest.org/esteem>>. Applicants should have some experience in working with Microsoft EXCEL. Good high school algebra is the only math background required; some programming experience and more mathematics are helpful but not essential.

Please contact jungck@udel.edu with a copy of your CV and a description of why you would like to be involved with this project.

BIOMEDICAL ENGINEERING

Biomechanical Engineering

Cartilage Bioengineering Laboratory

Job Description: This would be a great opportunity for a student interested in bioengineering research and practices. The project investigates whether resveratrol, an antioxidant in red wine, can prevent the occurring of osteoarthritis. Student will work with Dr. Lu and graduate students on the fabrication of nanoparticles for the release of resveratrol in knee joints. The student will receive all relevant lab trainings. The student can learn the fabrication of particles, evaluation of release profiles, and testing using animal models.

Required Skills: Background and interest in bioengineering. We will provide all necessary training. Students interested in graduate school application are preferred.

Time commitment: Approximately 3-8 hours per week, depending on the student's availability

Contact: X. Lucas Lu – xlu@udel.edu

BIOMEDICAL ENGINEERING

Biomechanical Engineering

Job Description: The Kiick laboratories design molecules, based largely on proteins in the tissues of mammals, for use in tissue engineering and drug delivery, with applications in treating cardiovascular disease, arthritis, and wounds. Remote work in these project areas is possible, in the form of literature searches and summaries, figure preparation, and data fitting. For in-person laboratory work, the student will receive all relevant lab training. Undergraduates would work with graduate students in the laboratory on a range of possible topics/methods, including solid-phase peptide synthesis, engineering bacteria to produce proteins, protein synthesis and characterization, measurement of drug delivery rates and fitting of data. The research assistant will be included as a member of the Kiick group, and would participate in weekly lab meetings via Zoom 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)
- Some background and/or interest in biochemistry and 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. Kristi Kiick via email (kiick@udel.edu)

BIOMEDICAL ENGINEERING

Job Description: This would be a great opportunity for a student interested in biomedical engineering and research. Student will work with Dr. Sambeeta Das on synthetically engineering mammalian cells. The purpose of this project is to make synthetically engineered cells and use microrobots to deliver drugs to the cells. The student will receive all relevant lab trainings. The student can learn mammalian cell culture, transfection protocols and also fabrication of microrobots.

Required Skills: Background and interest in bioengineering especially mammalian cell culture. Students interested in graduate school application are preferred.

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

Contact: Sambeeta Das at [samdas@udel.edu](mailto:samd@udel.edu)

COSTAL ECOLOGY

Lab: Coastal Ecology and Bio-geomorphology Group (CEBG)

Job description:

Salt marshes are important coastal ecosystems, which are under threat of accelerated sea level rise. Drowning of salt marsh initiated by the formation of shallow water bodies so-called ponds is a major issue. The undergraduate assistant will work in the CBEG to perform remote sensing analysis on measured existing (satellite and UAV) data sets of various salt marsh systems present across the US East Coast. This project does not require access to the lab and can be done remotely. The student will apply

algorithms available in ESRI packages (e.g. ArcMap or ArcGIS pro) to extract shallow inundated ponds from salt marsh across Delaware. Pond extraction will be carried out by image-classification and machine learning algorithms. The student will be responsible to independently work on the provided data under guidance of the supervisor and to attend weekly meetings with the supervisor. Knowledge in application of ESRI packages (e.g. ArcMap or ArcGIS pro) is required. We will train the student in additional data analysis techniques and their implications for coastal management. Approximately 3-8 hours per week.

Contact: Dr. Christian Schwarz at cschwarz@udel.edu for more information.

EARLY CHILDHOOD EDUCATION

Early Childhood Education Research Assistant and Science Curriculum Development

Dr. Gallo-Fox studies issues related to early childhood education, educator preparation, and early childhood science. All undergraduate research assistants will be part of my research team and receive relevant training for each project. Depending on project you will be involved in data collection and management, literature work, online-research, and curriculum writing. Work will occur remotely with weekly 30-minute Zoom research meetings. Weekly commitment: 5-10 hours weekly which can be organized around the student's schedule. All applicants must be organized, detail-oriented, self-starters with good time management skills and have access to a laptop and WiFi.

Contact Dr. Jennifer Gallo-Fox at gallofox@udel.edu for more information, or to apply. To apply send a resume/or a description of pertinent experiences/skills and describe your interest in a particular project.

Project 1: ECE Virtual Learning Experience Study, Research Assistant

This research assistant will work with Dr. Gallo-Fox on a research study of early childhood education student learning opportunities during virtual field experiences during the COVID-19 pandemic. You will gain experience doing mixed-methods research (surveys & focus groups).

Additional Requirements: Early childhood or Education major preferred

Project 2: Early Childhood Education Curriculum Study, Research Assistant

Dr. Gallo-Fox and Dr Radnai-Griffin are seeking a research assistant to help manage a data set of classroom curriculum and communications for an early childhood program, and work on an on-going curriculum study of nature programming.

Additional Requirements: Early childhood or Education major preferred

EDUCATION

Faculty Mentor(s): Christina Areizaga Barbieri

Hours/Week: 8-10

Dr. Barbieri's research program centers broadly on instruction for students who struggle in math. Specifically, her work focuses on the evaluation and application of learning principles to improve mathematical competencies and motivation for math, especially for students at risk for low mathematics achievement. Dr. Barbieri studies mathematical competencies from preschool to adulthood. A core part of her work aims to understand how common mathematical errors can be used most effectively to reduce misconceptions and improve learning in math content areas that students commonly struggle with. Recently this has involved both algebra and fractions, both gateway topics for success in STEM disciplines and careers. Dr. Barbieri also considers the role of motivation and attitudes towards mathematics in student learning.

In Spring 2021, Dr. Barbieri's various projects on mathematical cognition and learning will have a range of remote activities for an undergraduate scholar to receive mentoring in, such as analyzing students' problem-solving skills and explanations, reading and coding/note-taking literature, creating databases, and preparing conference submissions. This apprenticeship will be fully remote and mainly asynchronous for Spring 2021, with the exception of about one 1-hour Zoom meeting per week.

Please contact Dr. Christina Barbieri – barbieri@udel.edu for more information.

More information about Dr. Barbieri's lab can be found here: <https://sites.udel.edu/barbieri/>

Required Skills

- Be in good academic standing (GPA of 3.0 or higher)
- interested in student thinking and learning
- Diligent, organized and attentive to detail
- Have good time-management skills
- Have a stable Wifi connection and access to a laptop
- Be able to commit to at least 8 hours a week (up to 10) of work (excluding finals week).

Recommended Skills

The following are **preferred** but not required:

- Education, Psychology, or other Social Sciences majors preferred.
 - Have experience using Excel.
 - Have experience using SPSS or another statistics software.
 - Some experience tutoring mathematics (at any grade level)
 - Comfortable thinking and talking about mathematics (at various grade levels)
 - Interest in attending graduate school
 - Availability to stay on for fall 2021 if in good standing
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EDUCATION

Liticultural Education and Literacy Development Lab, MELD

Adrian Pasquarella, Lab Director

The MELD lab engages in collaborative and cutting-edge research intended to improve the educational opportunities, experiences, and outcomes for students from diverse cultural and linguistic backgrounds. If you join our research lab, you will have the opportunity to learn about language and literacy development and instruction for monolingual and multilingual learners. You can gain hands-on research experience with eye-tracking, different types of assessments (cognitive, linguistic, psychological, educational), as well as research design and statistical analysis. Contact apasq@udel.edu to learn how to join the MELD lab.

We are looking for a student with interest in literacy development for culturally and linguistically diverse students, who can work approximately 10 hours per week. Interest or experience in teaching and learning, or educational and development psychology is desired. Proficiency in a language other than English is considered an asset. Responsibilities include: attending weekly meetings to discuss the current research projects, administering assessments to children and adolescents, data collection and entry, report writing and knowledge dissemination efforts.

Contact apasq@udel.edu to learn more about our current research projects.

ENGINEERING

MATERIALS GROWTH FACILITY, UNIVERSITY OF DELAWARE

The Materials Growth Facility (MGF) is a Delaware Institute for Materials Research (DIMR) core-facility, along with the UD Nanofabrication Facility (UDNF), **UD Advanced Materials Characterization Lab (MCL)**, and The W. M. Keck Center for Advanced Microscopy and Microanalysis (CAMM). The MGF offers growth of a wide variety of epitaxial semiconductor films using ultra-high vacuum molecular beam epitaxy systems (and soon a magnetic sputtering system).

Job Summary: The Materials Growth Facility (MGF) at the University of Delaware is looking for an ***undergraduate Engineering Assistant***. The job will involve assisting with designing and building ultra-high vacuum equipment (for leak checking components and/or for degassing materials). Some experience with mechanical tools and working in a scientific laboratory is

preferred, but not essential. The Engineering Assistant will work closely with the MGF Engineer and be taught everything they need to know.

Qualifications:

UD student (preferably working toward an engineering or science degree)

Detail oriented and organized

Ability to work independently

Willingness to learn new skills

(Preferably) Some experience with mechanical tools and working in a science lab

Medium work: exerting up to 50 pounds of force occasionally and/or a negligible amount of force constantly to move objects.

Essential Duties:

Learn the basic function(s) and layout of the equipment to be designed.

With oversight by the MGF Engineer, design a helium leak detector and a degassing station.

Assist building the equipment.

Approximately 8 hours/week.

Contact: Dr. Christopher Schuck - cschuck@udel.edu

ENVIRONMENTAL STUDIES

Dr. McKay Jenkins is seeking a student to help with the design, development and chronicling of the full-scale ecological restoration of Stillmeadow Peace Park, a major interdisciplinary and inter-agency environmental justice, reforestation and community restoration project in West Baltimore. In partnership with the federal United States Forest Service; Maryland State Department of Natural Resources; local watershed restoration nonprofits in Baltimore; and the congregation of a local African-American church, the research assistant will play major roles in the rehabilitation of a highly degraded urban forest ecosystem in the midst of an historically red-lined and economically underserved majority Black neighborhood that suffers from intensive flooding; the urban heat-island effect from lack of tree cover; and high rates of public health issues, especially asthma, resulting from poor air quality. Primary outcomes will include the practical (such as designing spaces for reforestation) and the journalistic (including reporting on these efforts for articles to be published in student news outlets). Complementary outcomes might include laying the groundwork for the creation of undergraduate-driven oral histories and environmental journalism projects in both digital and print formats. Other duties

will include helping organize undergraduate volunteers for a variety of tasks including: addressing profound levels of ecological damage caused by invasive insects such as the emerald ash borer; repairing the forest through the planting of some 3,000 native trees; creating a trail network, and meditation gardens for community fellowship.

Some background in journalism and/or environmental studies desirable.

Time commitment: approximately 4-6 hours per week.

Contact: Professor McKay Jenkins at mckay@udel.edu

EPIDEMIOLOGY

Impacts of COVID-19 on Domestic Violence in the U.S.

The prolonged response to the COVID-19 pandemic has dramatically impacted the public's health. As we enter the second year of the pandemic and begin a vaccination campaign, the pressures placed on the public health system and workforce are intensifying. We are interested in a student to assist with data collection as part of a longitudinal project studying the impacts of COVID-19 on domestic violence services. The student should have experience working with websites and online data as well as familiarity with qualitative or quantitative data analysis software.

To apply: Contact Jennifer Horney – horney@udel.edu

FASHION AND APPAREL STUDIES

Fashion and Apparel Studies

Job description: The student will support a research project exploring fashion apparel companies' shifting sourcing strategies during the pandemic. The student will get involved in doing literature reviews, collecting and processing data, and conducting data analysis. The project will provide a great learning opportunity for the student to improve their critical thinking, data analysis, and communication skills. Through the project, the student will also have the chance to build valuable industry connections and access exclusive industry databases/learning resources.

Required Skills:

- Good academic standing (GPA of 3.0 or above)
- Have taken FASH455 (Global Apparel and Textiles Trade and Sourcing) or with basic knowable about international trade and apparel sourcing
- Diligent, organized, and attentive to details; Good time management skills
- Have a stable Wifi connection and access to a laptop/PC installed with Excel

- Junior or senior Fashion and apparel studies majors/minors preferred
- **Time commitment:** about 6-10 hours/week on average
- **To Apply:** Please email Dr. Sheng Lu (shenglu@udel.edu) with a brief description of why you are interested in the opportunity and your CV/resume.

FASHION AND APPAREL STUDIES

Project 1:

The Department of Fashion and Apparel Studies Associate Professor Kelly Cobb is seeking work study virtual lab assistants for Fall 2020 in the **Sustainable Textile RAD lab** for Research and Applied Discovery. Cobb's current research threads are listed below-please reach out if you are interested.

Kcobb@udel.edu

<https://www.fashion.udel.edu/people/faculty/kcobb>

Fashion Hacking for Healthcare: This research involves market/consumer analysis of virtual fitting Room technology, subscription services and other emerging tools that engage consumers and clothing. Our goal with this research is to hack the emerging tools to create a way for contactless design fitting of healthcare wearables during COVID.

Tasks: Market/Consumer research: desktop research, google scholar, reading articles, creating an annotated bibliography and research matrix (Faculty will guide this process.)

Context: Kangaroo care (KC), bare skin to skin contact between infant and caregiver, has known short- and long-term health benefits for healthy infants and infants receiving care in neonatal intensive care units (NICUs). An interdisciplinary team of researchers are working on prototype design of a "Snuggle Time Garment" will be conducted first via a virtual fit testing platform by adopting virtual fitting room (VFR) technology used in fashion "hacking" the capability for health-care related device fit testing.

Required Skills: We will teach you everything you need to know to work on our research projects. What we really want is for you to have an interest in fashion and the time and ability to analyze emerging writing and concepts. You will need to be able to work independently.

Time request: Approximately 5-10 hours of work required per week.

Project 2:

Re/Cover Textile Product Creation. This creative design research will focus on sampling (AKA making stuff) textiles from post-consumer waste, product development and consumer education around waste. Outputs of this research will include several prototypes trend research reporting, moodboarding and sketchbook process. And video tutorials of re/cover textile production processes.

Tasks: Research assistant will disassemble clothing such as shredding, cutting, and rag processing and to bind fibers such as wet and dry felting, papermaking, knitting, and weaving (this will require assistant has access to creative workspace-nothing is toxic so a home space is fine.) Assistant will conduct trend research, creative process and iteration (from pinterest to little textile sample book) this will require some studio (art, design, textile, fashion, ID) skill in making things and motivation.

Context: Redesigning fashion's future offers a vision of a fashion system that is circular, ideally creating no waste by design, while strategically capturing value from recycled content. Radical improvement of recycling by transforming clothing design, collection and reprocessing is the focus of this research as well as determining post-market manufacturing opportunities that re-define the textile waste stream (i.e. deadstock textile and post-consumer garments) as a value stream.

Required skills: We will teach you everything you need to know to work on our research projects. This job requires some knowledge and desire to make things (art, design, fashion, other.) This will require (1) trend research and (2) textile sampling. Materials will be provided.

Time request: Approximately 5-10 hours of work required per week.

HUMAN DEVELOPMENT AND FAMILY STUDIES

Job Description:

Preventing Expulsion And Suspension through Policy Alignment and Cohesion (PEASPAC) is a research project focused on examining state level policies governing early childhood care and education services put in place to prevent exclusionary discipline in the form of suspensions and expulsions. Policies that prevent suspension and expulsion are really important to have in place because boys and children of color, especially African American children are disproportionately targeted by exclusionary discipline practices. The policies that prevent this from happening are found in state Child Care Development Funds (CCDF) plans, State Child Care Licensing regulations, State Quality Rating and Improvement Systems standards, and State Pre-K Policies.

Working with a faculty mentor, the undergraduate student on this project area will participate in creating research databases, data collection, developing data codes, coding data and research discussions with faculty and graduate students. The student will be responsible for finding state level policies, entering the data into data bases, and attending regular research meetings. We are

looking for a student who is punctual, a self-started, and interested in learning new policy and research skills. You must have a working internet connection so that you can participate in Zoom meetings. While our team will mentor you with what you need to know, we can move faster if you have a working proficiency of Microsoft Word and Excel. Moreover, while not required, we'd hope you have an interest in young children or public policy or both. All are welcome!

Approximately 8-12 hrs required per week.

Contact Prof. Martha Buell mjbuell@udel.edu for more information

MARINE SCIENCE

Job Description: I am looking to provide a series of opportunities for a student to actively engage in the fields of aquaculture and fisheries through the implementation of several field-based research activities. The potential student will assist with ongoing externally funded, research initiatives including a derelict Blue Crab pot monitoring study in the Inland Bays, a survey of diadromous fishes on Brandywine Creek, remote set oyster and demonstration farm operations and maintaining an educational exhibit on invasive fish species at the Hugh R. Sharp marine science campus in Lewes, DE.

Required Skills: We will provide all necessary training. However, the capability to lift heavy objects, work odd hours, as well as work in diverse groups is required.

Preferred Skills: Knowledge of ichthyology, coastal ecology, and concepts of fisheries and aquaculture

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

Contact: Ed Hale at ehale@udel.edu

MARINE SCIENCE AND POLICY

Job Description: The student will support the work on a model of climate change economics, as part of Dr. James Rising's Open Modeling Group. The model, called PAGE, has been used by the U.S. EPA to estimate the social cost of carbon emissions. The goal of the project is to develop a new version of this model with country-level estimates of climate risk, economic growth, and potential for adaptation and emissions reduction. To do so, the student will draw upon and analyse economic and climate risk data, update model numbers and assumptions, and visualize model results. As part of the job, the student will learn about the model and underlying research, as well as activities to develop future climate and social projections.

Required Skills: Quantitative data processing and programming experience. Capacity to self-start.

Time Required: 5 - 10 hours per week, with half-hour meetings every week or two.

To Apply: Send a letter of interest to James Rising <jrising@udel.edu>

MATERIALS SCIENCE

Job description: The undergraduate assistant will work with the Law lab graduate students to take data on thin film samples. This will include performing atomic force microscopy scans to measure surface topography, x-ray diffraction scans to determine crystal structure, x-ray reflection scans to measure film thickness, Hall effect to measure electron density and mobility, and other characterization techniques as needed. All characterization techniques are available in the Advanced Materials Characterization Lab, the Keck Microscopy Facility, or other shared MSEG labs. The student will be responsible for maintaining a lab notebook, presenting results clearly, backing up data on the group network share, and attending meetings. We will train the student in all measurement techniques so no previous knowledge is required, though an interest in materials science or related disciplines is preferred. There is a potential for the student to stay on for a summer research internship.

Approximately 5-10 hours per week in person on campus. Contact Prof. Stephanie Law at slaw@udel.edu for more information.

MICROBIOLOGY AND BIOCHEMISTRY

Project Description: Background: Research in the Sutherland lab focuses on understanding the molecular mechanisms of cytochrome *c* biogenesis in bacteria using microbial genetics and biochemistry techniques. What are cytochromes *c*? They are proteins found in nearly all organisms including humans, plants, and bacteria that function in diverse electron transport chains for cellular respiration. What is cytochrome *c* biogenesis? Biogenesis is the attachment of heme to cytochrome *c*, which is required for their function. While cytochromes *c* are found in nearly all organisms, there are only three pathways that can perform heme attachment. Understanding how these pathways work is a fundamental biological process. The Sutherland Lab studies the two pathways that are found in bacteria.

What you will do: The student will work directly with a graduate student and/or Dr. Sutherland to learn basic research skills. The student will assist on a project characterizing mutants in the active site of a cytochrome c biogenesis protein. The student will learn basic microbiology and molecular biology skills.

Required Skills: Background and interest in microbiology or biochemistry. Technical training will be provided. Students interested in graduate school are encouraged to apply.

Time commitment: Student will commit to a schedule of ~8-10 hours per week in the lab, to attend a weekly lab-meeting, and to a bi-weekly individual meeting with Dr. Sutherland.

To apply: Please email Dr. Sutherland (msuther@udel.edu) with a brief description of why you would like to gain research experience, an unofficial copy of your transcript and your CV/resume.

MUSIC THEORY

Music Theory ("Database Creation: A Corpus Approach to Contra Dance Tunes")

Job Description: The undergraduate research assistants on this project will assist with creating a database of contra dance tunes using a symbolic music encoding system (training will be provided). Students will work independently to encode tunes and will confer with their teammate(s) as needed to deal with the more subjective portions of the encoding. Each student or team of students will have a bi-weekly check-in with the project supervisor, either by email or by videoconference. A hard copy of the sheet music to be worked with will be provided to each student, to be returned when the project is completed.

Required skills: Computer data entry (training on music encoding will be provided), ability to read music (single-line textures, treble clef). Since work will primarily be independent and remote, applicants should be motivated self-starters with the ability to problem solve on their own when possible, and able to clearly communicate about problems when help is needed. Data entry will need to be done in Notepad or another similar program, and files will be shared via Google Drive.

Preferred skills (not all research assistants will need to have these skills): Ability to recognize motivic structures and phrase structures (in relatively simple and short pieces) and to translate lead sheet notation into Roman numeral notation. Recognition of a shift in tonal center indicated by changes in Roman numerals is also preferred; coaching can be provided on this skill.

Time commitment: 2-10 hours per week

Contact Dr. Jennifer Shafer: shafer@udel.edu

NEUROSCIENCE

Social Neuroscience Research

The Impression Formation Social Neuroscience Lab (ifsnlab.org) investigates how we form impressions of people. The lab uses both neuroscience and behavioral research methods. The lab seeks a student for virtual work in the fall to help conduct research online. The student's responsibilities will include: (1) creating stimuli, (2) conducting online research, (3) cleaning and analyzing data, (4) programming studies, and (5) other miscellaneous tasks.

Required Skills: High GPA, attending lab meetings, and a 10 hour a week commitment.

Email: jtkubota@udel.edu

NEUROSCIENCE

Cognitive Neuropsychology Lab

Job Description: The undergraduate research assistant is responsible for collecting and analyzing data in the laboratory. Responsibilities include assisting with participant recruitment, running experiments, coding data from neurologically-intact and brain-damaged individuals, analysis of structural and functional neuroimaging data, and other day-to-day research needs. The benefits of the position include working closely with graduate students and faculty in a cognitive neuroscience lab, learning about brain stimulation and studying individuals with brain damage, attending weekly lab meetings, and learning more about our cognitive neuroscience research.

Contact Dr. Medina – jmedina@udel.edu

PHYSICS AND ASTRONOMY

Approximately 5-10 hours of work required per week

The student will work with the 100 Earths Project, a team of astronomers with the ambitious goal of discovering 100 earthlike planets orbiting sunlike stars. Our flagship piece of equipment, the EXPRES spectrometer at the Discovery Channel Telescope, can observe planet-induced star wobbles with enough precision to measure the walking speed of a human from dozens of light years away. But to fully exploit the technical advances of EXPRES, we must be able to distinguish between wobbling caused by planet gravity and gas motion in star atmospheres. There have been several uncomfortable incidents

when publicized "planet" discoveries turned out to be misinterpreted signals coming from star rotation. Noise from convection - rising and falling bubbles of gas in the star's atmosphere - is even more mathematically difficult than rotation. The student will help test algorithms that differentiate between true planet discoveries and parasitic signals from target stars.

Contact Dr. Dodson-Robinson at sdr@udel.edu

PHYSICAL THERAPY

Research assistant for Move to Learn Innovation Lab - UDRAW

Job Description:

The Move to Learn Innovation Lab is located in Star Campus. Our Super Suits FUNctional Fashion and Wearable Technology Program focuses on designing garments to help improve quality of life for people with disabilities.

We are seeking one or two undergraduate research assistants to engage in a variety of research activities with our team. Our team's current projects focus on early intervention, parent education, and rehabilitation technology. Students will assist in a variety of tasks, including coding of data from videos of parent-child activity or apps about child development and play, digitally gathering scientific articles, and data processing and organization. No prior experience with these tasks is required as training will be provided. Training and work can be performed remotely as necessary during the Covid-19 crisis.

The benefits of the position include working with our interdisciplinary team members to learn more about how to scientifically design interventions and clothing that support and assist movement for children with disabilities and participation in a supportive environment with students pursuing a variety of careers in health sciences.

Approximately 8-10 hours of work required per week.

Contact Michele Lobo at malobo@udel.edu

PLANT AND SOIL SCIENCES

Delaware Indoor Ag Lab – Research Assistant

Job description: [Delaware Indoor Ag Lab](#) – Research Assistant (RA). A new indoor farming laboratory is currently under development to enable research on hydroponic crop production in controlled environments. The RA will engage in environmental plant physiology research on light, mineral nutrition, and other environmental factors and run hydroponic systems to grow leafy greens, culinary herbs, and microgreens. The RA will work directly with the principal investigator to 1) help set up and test hydroponic systems (e.g., installing system components and conducting plant trial runs); 2) provide plant care (e.g., watering, making and refilling nutrient solutions, and measuring pH and EC); 3) maintain lab cleanliness (e.g., cleaning hydroponic components); 4) help with experimental setup; and 5) collect and enter research data for analysis. The RA will gain interdisciplinary experience in both research and operation capacities in preparation of graduate studies or industry work in the realm of agriculture, plant science, and engineering.

Requirements: The motivated individual is interested in this research, punctual, willing to learn, meticulous with great attention to detail, handy with building tools and technical equipment, skilled at solving problems, experienced with data entry and organization in Excel, able to move heavy objects (up to 50 lbs.), and able to work on weekends. Direct plant experience is preferable but not required.

Time commitment: The position requires 3 to 10 hours of work per week, which can fluctuate depending on tasks.

Contact: Dr. Qingwu Meng (qwmeng@udel.edu). Please include a letter of interest, an unofficial transcript, and two references.

PSYCHOLOGICAL AND BRAIN SCIENCES

Project: Dozier Lab

Job Description: The undergraduate research assistant will be responsible for preparing salivary cortisol samples for assay, and/or assisting with magnetic resonance imaging (MRI) scanning of infants and adolescents. We conduct randomized clinical trials examining the efficacy of a parenting program developed in our lab, and examine behavioral and biological outcomes of the program. Undergraduate research assistants are needed to help with data collection, and preparation of data for analyses.

Required Skills: High GPA; interest in neuroscience.

Time commitment: 10 hours per week.

Contact mkorom@udel.edu

PLANT AND SOIL SCIENCES

Wanted: Student Intern with an interest in Edible Forest Gardens/ Food Forests and Outdoor Learning Environments!

The UD Center for Food Systems and Sustainability has made possible the installation of an Edible Forest Garden at the UD Children's Campus. There are a significant number of new gardens at the UD Early Learning Center and Lab School, located off of Wyoming Road in Newark, DE, which creates an opportunity for a student **approved for work-study** to gain experience in plant maintenance and management, edible forest gardens, youth education about where food comes from, and landscape architecture. This campus is accessible via UD buses and is a short walk from campus.

This position will be a hybrid experience (incorporating remote work and in-person activities, following CDC recommended social distancing guidelines,) incorporating these tasks and others as determined by mentors:

1. Plant maintenance and management (including watering/ weeding/ planting/ plant health evaluation);
2. Assisting Lab and ELC teachers and Professor Wik with garden interpretation, grant writing, design, educational resource development and other tasks.

Students will gain experience in plant maintenance processes, landscape architecture/ garden design, outdoor learning environments and working on a collaborative team.

Students must be able to work in all weather conditions and to lift 30 pounds on a regular basis. Students must complete background checks to work in an educational environment. Estimate approximately 5-10 hours per week. Start date of March 15th or earlier (once on-boarded into UDRAW system).

Required skills:

- Highly organized
- Detail oriented
- Self-motivated
- Comfortable working independently and in a team
- Eager to share ideas and knowledge
- Responsive to team and supervisor communications

- Interest in sustainability
- Able to lift 30 pounds
- Successfully complete background check*

* If interfacing with children at ELC/ Lab School

Desirable:

- Experience/ coursework related to plant ID & maintenance, horticulture, permaculture, vegetable gardening.
- Experience planning developmentally appropriate activities for young children
- Experience with Google Docs, Excel and web forms

Please send a resume and one-page letter of interest via email **by March 5, 2021**, including current and any previous experience with garden maintenance, horticulture, early childhood education, food forests, and project management. In addition, provide names of a faculty sponsor or external employers/

supervisors with familiarity of your academic or extracurricular activities who we may contact as a reference to:

Anna Wik
Assistant Professor of Landscape Architecture
Plant and Soil Sciences University of Delaware
annawik@udel.edu

PUBLIC POLICY AND ADMINISTRATION

Isett/Toth Policy Lab – Biden School of Public Policy and Administration

Job description: The Isett and Toth Policy Lab focuses on, but is limited to, issues around healthcare access and racial and gender disparities. We have a number of projects that are in need of data collection and data tabulation. Students will likely work on a number of different projects throughout the year. Our lab's current projects include:

1. Physician capacity in Delaware and access to languages other than English
2. Collaboration among community organizations responding to the opioid epidemic in North Carolina
3. Race and gender patterns in academic research
4. Delivery of vaccines in low and middle income countries
5. Use of scientific knowledge in policy making
6. Profiles of productivity in academic research

Required skills: Most skills needed will be taught in the lab setting, but attention to detail is extremely important. Some introductory statistics is preferred. Need to work independently.

Time commitment: 2 students at 10 hours per week each. UDRAW students will work collaboratively with students at all levels of education within UD.

Contact: Please contact Drs. Isett (kri@udel.edu) and Toth (tibi@udel.edu) if interested.