**UDRAW Project Descriptions**

* **Art History**

**Project:** Professor Jessica Horton in the Department of Art History is seeking a student with fluency in Japanese language to assist with primary research and translations into English concerning the reception of Native American art and culture in Japan in the 1960s and 1970s. Research topics will include Japanese collections of Native American art, Japanese novels featuring Indigenous themes, environmental justice in Japan, and Expo 70, a World Fair that took place in Osaka, Japan, in 1970. This research will support the publication of a scholarly book, *Earth Diplomacy: Indigenous American Art and Reciprocity, 1953-1973*, under contract with Duke University Press.

**Contact:  Dr. Jessica Horton** - jhorton@udel.edu

* **Biochemistry**

**Job Description:**A biochemistry laboratory is looking fora student to help us keep our research laboratory running. Responsibilities include: 1) cleaning chemical glassware, 2) sterilizing biochemical equipment and 3) restocking 4) keeping the lab organized. Chemicals used in our lab pose minimal risk, but safety training will be provided. We will teach you everything else you need to know about working in our lab. Most of the communication will be with the undergraduates and graduate students.

**Required Skills**: An interest in Science, good organizing and communication skills. Love of cleaning glassware.😃

  Approximately 4 hours of work are needed per week.

**Contact**: **Mariaa Kapitonova** for more information - [mariia@udel.edu](mailto:mariia@udel.edu)

* **Chemistry and Biochemistry**

**Project:** Development of new metal-catalyzed reactions for applications in pharmaceutical discovery and materials science

**Project description:** New methods for the synthesis of valuable organic molecules from readily available and inexpensive starting materials are needed to advance the discovery of new medicines and provide solutions to society’s plastic waste problem. The M. Watson group harnesses transition metal catalysts to enable such transformations. Research assistants will be trained in advanced synthetic organic chemistry techniques, laboratory safety, and scientific communication.

**Webpage:** <https://sites.udel.edu/mpwatson-lab/>

**Contact:** E**mail Dr. Mary P. Watson**, Professor, Department of Chemistry and Biochemistry at [mpwatson@udel.eu](mailto:mpwatson@udel.eu) with your CV, and description of your interest I the position, and the skills you would bring to the lab.

* **Civil and Environmental Engineering**

The prospective student would assist a graduate student in measuring plant roots' characteristics in samples collected from stormwater treatment systems. The work would be in the laboratory and would be supervised.

**Contact**: **Email Dr. Paul Imhoff** if interested – [imhoff@udel.edu](mailto:imhoff@udel.edu)

* **Computer Sciences**

**ML Research & Web Internship**

The Sensify Lab ([sensifylab.org](http://sensifylab.org/)), is looking for some part-time assistance on the Web Sense team.  As part of the team, interested students will research web-based API to help with processing data, write python scripts, and work with some of our existing Jupyter Notebooks. They will also have the opportunity to gain experience working on a small distributed team and learn more about basic Machine Learning and Data Science best practices. Depending on how many hours the student has available, they can also help with updating our lab's website and cultivate some basic web development skills. No experience required, just a willingness to learn new things and make iterative progress in a casual environment.

**Contact: Dr. Matthew Mauriello** - [mlm@udel.edu](mailto:mlm@udel.edu)

* **Early Childhood Education / History**

The UD Lab School has maintained a collection of historical documents and artifacts from the early 1930’s including administrative documents, publications, media communications, photos, video, children’s toys, books and more. There is a mix of electronic and physical materials.

Initial tasks include:

* organizing and cataloguing materials
* digitizing photos, video and fragile documents
* locating additional materials and resources in the University Archives and national databases
* Additional research tasks include:
* searching the collection for relevant data
* participating in document analysis and coding
* co-authoring research publications
* other research-related activities

The research assistant will be a member of the Gallo-Fox research group and will meet regularly with one or more members of the Lab School History Project to discuss progress, answer questions and provide additional support.  Members of the Project include HDFS faculty members, graduate students and former Lab School Directors.

**Time commitment:** Up to 10 hours per week, flexible.

**Contact:** **Email Dr. Jennifer Gallo-Fox** - [gallofox@udel.edu](mailto:gallofox@udel.edu) if interested. Send your current CV with a description of your interest in the position and the skills that you will bring to the project.

* **Education**

**Project:** Paving the Way for Fractions: Exploring Foundational Concepts in First Grade (PI: Dr. Nancy Jordan, School of Education)

**Position Details**: We are seeking organized and responsible undergraduate students to assist in data collection related to early math and fraction learning! Students will be trained to administer tasks, closely follow protocols, and enter data. Data collection will occur directly with children in local elementary schools.

**Preferred Qualifications:**

* Experience working with children
* Valid DE criminal background check/fingerprints are a plus, but not necessary.
* Daytime availability to travel to local schools. Having your own transportation is a plus, but not necessary.

**Time Commitment:** 5-10 hours/week, depending on weekly scheduling needs.

**Contact: Eva Redican** ([evared@udel.edu](mailto:evared@udel.edu)) for more information and to apply.

* **Education**

Faculty Mentor(s): Nancy Jordan and Nancy Dyson

**Project Description**: Dr. Jordan and Dr. Dyson's research centers primarily on helping students with math learning disabilities. Currently, we are looking for students to assist with our Fraction Sense Intervention lab. This lab focuses on evaluating the efficacy of our fraction sense intervention as it is tested in public school 6th-grade classrooms by real teachers. We collect student data through a pretest, a posttest, and student workbooks throughout the intervention period. We also observe classroom sessions and keep audio recordings of every lesson. Most (if not all) tasks will require students to come to the lab (Willard 211) in person. Responsibilities could include (but are not limited to):

1. assembling and organizing student materials

2. transcribing lesson recordings

3. entering student data

4. attending weekly lab meetings

5. assisting graduate students with related projects

**Required skills:**

1. Be in good academic standing (GPA of 3.0 or higher)

2. Be interested in student learning

3. Be organized

4. have good time management skills

5. Have good communication skills

6. Be attentive to detail

7. Be able to commit to at least 5 hours of work per week (limit of up to 10 hours)

8. Be interested in learning about the research process

**Recommended Skills:**

The following are preferred but not required:

1. Education, Psychology, Cognitive Science, or other Social Sciences majors preferred.

2. Have experience using Excel and other Microsoft Office products.

3. Have experience using statistics software.

4. Comfortable thinking and talking about mathematics (at various grade levels)

5. Interest in attending graduate school

6. Availability to stay on for spring 2023 if in good standing.

**Contact: Heather Suchanec-Cooper** by email, [hsuchan@udel.edu](mailto:hsuchan@udel.edu), with the Subject Line: **FSI Research Assistant** and the following information:

1. Name

2. Hours of Availability on Tuesdays and Wednesdays

3. Cell phone number

4. Preferred email address

5. a short statement about why you are interested in working in our lab

Hours/Week: 5-10

* **Education**

**Project:** Project PAC (Pre-Algebra Competence)

PI: Dr. Jessica Namkung, School of Education

**Position Details**: We are looking for responsible undergraduate students to work on our project as research assistants . The project aims at identifying explicit links among cognitive (e.g., executive functions), language, and foundational math (e.g., number sense) processes that underlie pre-algebra competence for students with and without math learning difficulties. You can help us administer various cognitive, language, and math assessments to local middle school students and gain paid research experience.

**Preferred Qualifications:**

* Experience working with children/students
* Reliable transportation to travel to local middle schools
* Daytime availability (at least 3 hour between 8:00-3:00 on 2 days a week)

**Time Commitment:** 10-15 hours/week, depending on weekly scheduling needs.

**Contact: Dan Osgood** ([dosgood@udel.edu](mailto:evared@udel.edu)) for more information and email a resume/CV to apply.

* **Education**

**Project**: Comprehensive Description of Lead in the Water of US Public Schools

**Description**: I am looking for one to two project managers that will help in the development of a large database documenting the prevalence of lead in the water of US public schools.

**Responsibilities**:

1. documentation of available data,
2. identifying and marking PDF documents to indicate where data are located,
3. communicating with state and federal representatives,
4. communicating with data analysts about project goals,
5. documenting project milestones and progress, and
6. weekly meetings with Dr. Kenneth Shores (CV here: <https://www.cehd.udel.edu/wp-content/uploads/2020/09/Shores_CV.pdf>)

**Minimum Qualifications:**

1. Organization
2. Professional communication
3. Facility with PDF tools and Microsoft packages

**Benefits:** This project will provide undergraduates with a unique experience Interacting with state and federal representatives at different levels of governance and developing large datasets. Opportunities to continue the project across years are available, depending on eligibility. The results of this study are very important for public policy—at local, state, and federal levels—and are likely to generate considerable public attention once completed. This project will be especially attractive to students that are interested in the intersection of health, education, and equity.

**Contact:** Interested parties can reach out to **Kenenth Shores** - kshores@udel.edu) with questions.

* **Engineering**

**Position Description**: From a heartbeat sensor embedded in a t-shirt to a soft robot picking up wounded soldiers on the battlefield, interacting with soft and squishy biological systems (i.e. humans) requires new electronic materials and structures able to stretch by tens or even hundreds of percent without damage. The Soft Electronics and Robotics Lab is looking for enthusiastic undergraduate researchers interested in joining a variety of projects on making electromagnetic devices for wearable wireless power systems and soft robotic actuators.

Although specific background/preparation is not necessary, past experience with one or more of Matlab, COMSOL, Autocad, Solidworks, cleanroom fabrication, or 3D printing will be considered favorably.

Time Commitment: 10 hours a week

**Contact: Dr. Lazarus** at [nlazarus@udel.edu](mailto:nlazarus@udel.edu) with a copy of your CV and a description of your interest in the position.

* **Fashion and Apparel Studies**

**Project Description: 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.

**Contact: Dr. Kelly Cobb** – kcobb@udel.edu

* **Fashion and Apparel Studies**

**Project Description: Re/Cover Textile Product Creation.** This creative design research will focus on sampling (AKA making stuff) textiles form 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.

**Contact: Dr. Kelly Cobb** – [kcobb@udel.edu](mailto:kcobb@udel.edu)

* **Fashion and Apparel Studies**

**Project Description:**  Join our team on research that combines the Fashion and Textile Collection with 3D visualization technology in a project Fashion CSI: Exploring the Application of Virtual Design Software in the Fashion and Textile Collection (FTC). Work with fashion scholars to recreate digitally a group of material culture artifacts from the 1920s.

Specifically, work hands-on in the collection learning how to do in-depth analysis of primary sources, 1920s artifacts in the FTC, as well as from other collections (i.e. museums, historical societies, universities, etc.) Work with virtual design software: Optitex to develop avatars based on common body measurements of the 1920s, create digital patterns of the, texture maps will be created to a 3D avatar. Contribute toward the development of a virtual exhibition. The results of the research will be used as a source of information and inspiration for the fashion history and design classes and the creation of costumes in theatrical performances, as well as part of a historic clothing exhibition on the 1920s.

Looking for students with an experience and interest in material culture, historic dress and technology.

**Contact: Dr. Kelly Cobb** – kcobb@udel.edu

* **Languages, Literatures and Cultures**

Area: European studies

**Project Description:** Working with Dr. Ana Oancea to identify primary and secondary sources relevant to a research project on 19th century women doctors in Europe. I am looking for a student who is detail-oriented, with a strong sense of responsibility and possesses good communication skills. Undergraduates who plan to major in the humanities, or pursue advanced degrees in any of its fields will find this an excellent opportunity to develop research and bibliographic skills. Knowledge of French is a plus, but not necessary. I estimate the task at about 100 hours (10 hr / week).

**Contact:** Dr. Ana Oancea ([aio@udel.edu](mailto:aio@udel.edu)) for more information and to apply.

* **Material Sciences**

**Available student project** - Optical characterization of 2D materials and heterostructures

**Research Field**: Materials Science/Optics/Physics/Chemical Engineering/Electrical Engineering/Mechanical engineering

**Project details:**

2D materials, such as graphene and transition metal dichalcogenides, exhibit extraordinary optoelectronic and mechanical properties compared to their bulk counterparts.  These properties depend on the crystal structure of the material and, as such, are affected by local environment and structural defects. This project will investigate the structure and defects in 2D materials and various 2D material based electrical and mechanical devices by optical spectroscopy and material simulation.

Both in-person and remote project activities will be available.

Through the project, the student will develop skills in the area(s) of:

2D material transfer technique

Building optical setup

Materials processing and characterization

Semiconductor clean-room technology

Multiphysics modeling of complex physical phenomena

Data acquisition, analysis and interpretation

Critical thinking

**Required:**

Working toward an engineering or science degree

Organized and excellent time management skills

Ability to work independently

Willingness to learn new things

Some experience with working in a science lab will be preferred

Time commitment of approximately 8-10 hours per week

**Preferred Major**: Physics, Chemistry, Materials Science and Engineering, Electrical Engineering, Chemical Engineering, Computer Science

**Contact: Dr. Chakraborty** ([cchakrab@udel.edu](mailto:cchakrab@udel.edu))

Website: [https://sites.udel.edu/cchakrab/](https://sites.udel.edu/cchakrab/ )

* **Material Sciences**

**Available Project:** 2D Materials exfoliation, identification, and transfer

Description: Two-dimensional (2D) materials, in the form of thin films with one or few-atom layer thickness, exhibit extraordinary electrical, optical, mechanical, and thermal properties. High quality 2D materials are typically prepared by mechanical exfoliation from their bulk crystals. Then, they are transferred to desired substrates for subsequent fabrication or characterizations. The undergraduate student will contribute to the

exfoliation of two-dimensional (2D) materials. The student will use the optical microscope and the micro-Raman system to identify exfoliated 2D materials, and practice the transfer procedure. The student will be involved in procedure development to figure out ways to improve yield. In addition, the student, if interested in, will participate in the production of outreach videos.

**Preferred Skills:** Image/video processing and programming are preferred but not required.

**Contact:** Dr. Wang – [wangxi@udel.edu](mailto:wangxi@udel.edu)

* **Nursing**

**Position Description Research Assistant for the Sleep and Circadian Health Research Program :** The undergraduate research scholar will work with Dr. Lauren Covington on her study “Family Stress and Sleep” looking at the day- to-day associations between stressful family environments and sleep in caregivers and toddlers living in socioeconomically disadvantaged families. The scholar will assist with recruitment, data collection and data management efforts.

Specifically, they will (1) meet with families to conduct in-person (or zoom) assessments to administer REDCap surveys, (2) remotely monitor the families’ participation over 2-weeks and, (3) complete a follow-up session with the family at the end of the 2-week data collection period. The scholar will become a part of a multi-disciplinary team and participant in weekly team meetings, and gain proficiency in REDCap, Excel and research ethics. This job will require 10 hours/week and schedule flexibility to meet with families during evenings and weekends, as needed.

**Contact: Dr. Covington** if interested: [lcovingt@udel.edu](mailto:lcovingt@udel.edu)

* **Political Science and International Relations**

**Project:** Coalition Building on Short Term Health Insurance Plans' Federal Regulations During Obama-Trump-Biden Presidencies

**Project Description:** Students will work with public comments on federal regulations regarding short term plans. Students will have to skim comments and work on dataset building. Attention to detail is a must. Students will be trained to perform data collection, data entry.

**Contact: Dr Sergei Kostiaev**, Department of Political Science and International Relations  [kostiaev@udel.edu](mailto:kostiaev@udel.edu)

* **Physical Therapy**

**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; individuals with experience using sewing machines are preferred for some of the tasks.

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** – [malobo@udel.edu](mailto:malobo@udel.edu)

* **Psychological and Brain Sciences**

**Job Description**: In a study examining the effectiveness of an early parenting Intervention on adolescents’ brain and behavioral development, we are assessing brain functioning through functional magnetic resonance imaging (fMRI). We seek a student to assist in imaging adolescents, performing quality checks (QC) of imaging data, and developing and testing research ideas.

**Contact: Mary Dozier** – [mdozier@udel.edu](mailto:mdozier@udel.edu )

* **Psychological and Brain Sciences**

Project: Effect of prenatal immune activation on brain development and risk of neurodevelopmental disorder

**Job Description**:   Prenatal infection is a major risk factor for many

neurodevelopmental disorders, including schizophrenia and autism. We use a

rat model of prenatal immune activation, then we allow the pups to grow up

at which point we test learning behaviors and examine how differences in the

brain developed.  Students will perform molecular biology, histology, and

some animal behaviors, thus should feel comfortable with animal research

models.

Lab Website:  [https://www.psych.udel.edu/lab-sub-site/jschwarz-sub-](https://www.psych.udel.edu/lab-sub-site/jschwarz-sub-site/Pages/Jaclyn-Schwarz.aspx) site/Pages/Jaclyn-Schwarz.aspx

**Contact: Dr. Jaclyn Schwarz**, Associate Professor; Department of Psychological & Brain Sciences Email:  [jschwarz@udel.edu](mailto:jschwarz@udel.edu )

* **Psychology and Education**

**Job Description**: The Rutherford Lab researches student learning and motivation in online contexts for Pre-K through university students. Current projects include examining how teachers support upper elementary students’ emotions while they work through an online mathematics software; determining how features of a coding game relate to performance between experts and novices; researching how student motivation changes throughout elementary and middle school and across classes and years in college; exploring how eye movements and biometrics relate to regulation during problem solving; and examining how motivation relates to desired careers.

The lab is a vibrant research community with postdocs, doctoral students, and undergrads working together toward shared research goals. Weekly lab meetings facilitate problem-solving and sharing across projects. We work hard to develop a work environment (even virtually) that is fun, collaborative, and productive, and is one that supports undergraduate researchers in learning content, skills, and professional norms for Psychology and Education research.

**Contact: Teya Rutherford** - [teomara@udel.edu](mailto:teomara@udel.edu )

* **Psychology and Health**

Professor Regina Wright, a psychologist in the School of Nursing, is looking for a research assistant to assist with Qualtrics data set-up, collection, and analysis. She will be administering a survey that focuses on the health and cognitive effects of neighborhood-level socioeconomic disadvantage, with respect to neighborhood income, education, employment, and housing quality in Black adults. Prior research suggests that neighborhood-level characteristics have an influence on physical and cognitive health independently of individual socioeconomic resources. However, little is known about whether Black adults have unique patterns of association. With this survey, we will seek to examine     how neighborhood characteristics relate to subjective and objective measures of physical and cognitive health.

**Contact: Dr. Regina Wright** – [rsims@udel.edu](mailto:rsims@udel.edu )

* **Social Neuroscience**

**Job Description:** The Impression Formation Social Neuroscience Lab ([ifsnlab.org](http://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.

**Contact: Jeni Kubota** - [jtkubota@udel.edu](mailto:jtkubota@udel.edu )

* **Women and Gender Studies**

**Project Description:** Violence Against Women: [1 position] Working alongside Women & Gender Studies faculty Professors Angela J. Hattery, Patricia Sloane-White and Earl Smith, the student hired will assist with analyzing qualitative data from interviews with both victims/survivors and abusers in violent intimate relationships. Student will support the development and implementation of a survey on IPV, and assist with reviewing the relevant research literature as well. Other tasks may include designing social media and powerpoint presentations.    
   **Contact: Dr. Angela Hattery** – [hatterya@udel.edu](mailto:hatterya@udel.edu) for more information