

**2021 Summer Undergraduate Research Fellowship (SURF) Program  
Faculty Projects**

**Project Number 1: Stream Ecology Research with Field Work at Area Volcanos**

<b>Faculty Name</b>	<b>Faculty Email</b>		
<b>Carri LeRoy</b>	leroyc@evergreen.edu		<b># of FELLOWS--- One</b>

This research experience will be focused on learning techniques used to understand the structure and functioning of stream and river ecosystems. Dr. LeRoy is a stream ecologist who has studied streams, rivers, and lakes in WA, UT, AZ, Chile, and Siberia (<http://academic.evergreen.edu/l/leroyc/>). Her research mainly focuses on the interactions between streams and their landscapes, as well as the input of terrestrial carbon to headwater streams through leaf litter fall. Fellows involved in this summer research experience will have the opportunity to work with her surveying streams that were newly formed after the 1980 eruption of Mt St Helens, doing research in the lab that is funded by a large grant from the National Science Foundation. In addition, there may be opportunities to do research at Mount Rainier and monitoring three watersheds on campus as part of the Evergreen Ecological Observation Network (EEON; <http://blogs.evergreen.edu/eeon/>).

**Description**

The specific measurements for this project include: 1) collecting algal samples and assessing algal production (chlorophyll-a analysis by spectroscopy), 2) collecting and identifying aquatic macroinvertebrates, 3) analysis of water quality including: nutrients (nitrate and phosphate), dissolved oxygen (DO), dissolved organic matter, alkalinity, pH, and temperature, 4) surveying riparian vegetation and canopy cover, 5) quantifying the amount of coarse and fine particulate organic matter, 6) construction, deployment, and processing of leaf litter bags, 7) determining the chemical composition of litter material (C:N ratios, tannins, lignin), 8) DNA extraction for analysis of microbial communities, and 9) acting as a visual observer during drone flights. Students will also learn to measure basic hydrological variables in streams (slope, sinuosity, substrate type, depth, discharge).

**Responsibilities of Fellows and Knowledge and Experience To Be Gained**

Fellows can expect to spend significant amounts of time in the field and the laboratory (if Covid-19 restrictions allow). Some of this time will be supervised and some will be independent. Fellows should be self-motivated, eager to learn and excited to participate in a variety of collaborative research projects.

**Number Of Fellows**

1

**Describe the Accomplishments hoped to Achieve of Undergraduate Fellows (anticipated progress)**

The SURF fellows will have opportunities to learn about field methods, experimental design, data collection and archiving, laboratory analyses, aquatic organism taxonomy, statistical analysis and scientific writing through interactions with faculty members, collaborators, and other fellows. Fellows will have the opportunity to take the lead on one aspect of the research in the field or lab as an independent research project. Successful research projects may be written and/or presented to diverse audiences at conferences and in scientific publications. Fellows will be expected to meet weekly with other fellows doing field ecology research to discuss progress, challenges and present findings.

**2021 Summer Undergraduate Research Fellowship (SURF) Program  
Faculty Projects**

<b>Project Number 2: <i>Understanding Community through Qualitative Research &amp; Documentary Filmmaking</i></b>			
<b>Faculty Name(s)</b>	<b>Faculty Email</b>		
<b>Maria Isabel Morales and Suree Towfighnia</b>	moralema@evergreen.edu; towfighs@evergreen.edu		<b># of FELLOWS--- One</b>
<p>The student fellow will support the development of faculty research in Cultural Studies and Media Arts on a project centered around ideas of sustainable coffee production and children-centered knowledge in Southern Mexico (Nurturing Roots). The fellowship may include a variety of tasks related to the project, including: primary source research, transcription and/or translation of interviews conducted in Oaxaca, thematic analysis, post-production assistance and possible editing. This opportunity explores contemporary topics in social and environmental justice, indigenous sovereignty, migration studies, media representation, and womens history. Undergraduate fellows will gain practical experience working under the direction of both faculty members to accomplish a specific set of tasks that will be developed with each fellow. The fellows will be expected to meet with faculty to develop a plan and schedule, and then work in a self-directed environment with weekly phone/online check-ins. This fellowship provides experience for students interested in working on professional projects related to qualitative research and nonfiction projects. The fellow will have an active role in creating a practical fellowship that not only supports our ongoing Nurturing Roots research project, but also the fellows desired learning goals to advance their practice and academic interests.</p>			
<b>Description</b>			
<p>Specific research will be developed with fellow input, but roles may include:</p> <p>Cultural Studies Fellow- Research Assistant: Transcription and preliminary thematic organization. Support in the conceptual analysis of the interviews. Research peer-reviewed articles in: immigration studies, children studies, and Indigenous epistemology.</p> <p>Media Arts Fellow- Associate Producing: research and development on nonfiction films, historical research and idea development, scriptwriting, project management and organizing. Assistant Editing: translation, transcription and footage logging, organizing archive and media, assembling and editing footage in Premiere, researching and acquiring archive, working on a new trailer or work sample.</p>			
<b>Responsibilities of Fellows and Knowledge and Experience To Be Gained</b>			
<p>Fellows can expect to gain skills and knowledge related to qualitative research and documentary productions that may include:</p> <p>Practical experience completing interview transcription and thematic analysis Advancing knowledge of reading and interpreting academic sources Strengthened post-production project organization and file management practices in documentary post-production Potential editing of trailers or work samples</p>			
<b>Number Of Fellows</b>			
<b>1</b>			

## 2021 Summer Undergraduate Research Fellowship (SURF) Program Faculty Projects

### **Describe the Accomplishments hoped to Achieve of Undergraduate Fellows (anticipated progress)**

This fellowship provides experience for students interested in working on professional projects related to qualitative research and nonfiction projects. The fellow will have an active role in creating a practical fellowship that not only supports our ongoing Nurturing Roots research project, but also the fellows desired learning goals to advance their practice and academic interests.

**2021 Summer Undergraduate Research Fellowship (SURF) Program  
Faculty Projects**

<b>Project Number 3: <i>Evergreen in Context: An Archives Project</i></b>		
<b>Faculty Name</b>	<b>Faculty Email</b>	
<b>Nancy Koppelman</b>	koppelmn@evergreen.edu	<b># of FELLOWS--- One</b>
<p>I am working on a monograph about the first 50 years of The Evergreen State College. The text is structured around key themes in the history of the college, including the historical and cultural context which informed the work of inventing the college; the ongoing work of promoting and growing the college, and how the college's educational program and public service work has responded to and contributed to society and culture in the U.S. and the world over its five decades. I am already at work on the publication which I plan to complete during the Colleges' 50th anniversary year (2021-22).</p> <p>In my winter 2021 program, entitled "Evergreen in Context: An Archives Project," nine students are working on oral history papers, and completing project prospectuses about themes or issues that stem from their interest in the College. Their work is already contributing to the project, as is the work of my SURF Fellow from summer 2020.</p>		
<b>Description</b>		
<p>Students will be responsible for doing research both in Evergreen archives and in the library. In order to prepare for the internship, students will be required to read some background material selected by the faculty. Students will intersect with this work-in-progress in ways that bring it closer to completion.</p>		
<b>Responsibilities of Fellows and Knowledge and Experience To Be Gained</b>		
<p>This work may include learning how to conduct oral history interviews; interviewing retired faculty and staff; and following up on contacts with alumni who will make written contributions to the book. Other work will emerge as the project moves forward.</p>		
<b>Number Of Fellows</b>		
<b>1</b>		
<b>Describe the Accomplishments hoped to Achieve of Undergraduate Fellows (anticipated progress)</b>		
<p>I plan for us to work in the college's Archives (depending on Covid conditions) to find primary sources that flesh out the stories in the book. In addition, students may have the opportunity to interview narrators and thereby contribute primary sources to the Oral History Project archive.</p>		

**2021 Summer Undergraduate Research Fellowship (SURF) Program  
Faculty Projects**

<b>Project Number 4: <i>Genomic Data Mining of Arrow Worm Biochemistry</i></b>		
<b>Faculty Name</b>	<b>Faculty Email</b>	
<b>Erik V. Thuesen</b>	thuesene@evergreen.edu	<b># of FELLOWS--- One</b>
<p>Arrow worms (phylum Chaetognatha) are often the second most abundant animal in pelagic ecosystems in marine environments. These predatory worms use burst swimming actions in order to capture prey with their grasping spines and teeth. Their abundance in the water column highlights their importance in marine pelagic food webs, and chaetognaths utilize burst swimming to avoid predators such as squids and fishes. Two previous laboratory investigations using gel electrophoresis and spectrophotometric biochemical analyses failed to find evidence of glycolytic enzymes (LDH, -opineDHs, etc.) in chaetognaths. The absence of terminal enzymes in the glycolytic pathway is very puzzling. This project will look through published chaetognath genomes and transcriptomic data sets (~10) in public databases to identify orthologs of enzymes involved in glycolysis.</p>		
<b>Description</b>		
<p>If time and working conditions allow, enzymatic activities will be measured in the lab, modifying traditional assays as needed. All of the data mining can be done while working off campus or using a computer on campus if necessary. This work can safely be carried out while working alone. If COVID protocols allow on-campus lab work before the end of summer, enzyme assay work will be carried out in my research space (Lab I 3060) on campus.</p>		
<b>Responsibilities of Fellows and Knowledge and Experience To Be Gained</b>		
<p>The fellow will work with the faculty to choose data mining software, transcriptomic data sources and target orthologs. The Fellow and faculty will work together to design a search protocol using adequate controls. The fellow will need to keep meticulous notes about all specific procedures used to scour the data.</p>		
<b>Number Of Fellows</b>		
<b>1</b>		
<b>Describe the Accomplishments hoped to Achieve of Undergraduate Fellows (anticipated progress)</b>		
<p>A report will need to be written before the end of the summer that describes the exact methods and summarizes the results using figures and tables. The fellow will become comfortable working with molecular data and associated software while improving their knowledge of molecular biology and biochemistry.</p>		

**2021 Summer Undergraduate Research Fellowship (SURF) Program  
Faculty Projects**

**Project Number 5: *The EDURange project***

Faculty Name	Faculty Email		
<b>Richard Weiss</b>	weissr@evergreen.edu		<b># of FELLOWS--- One</b>

The EDURange project was designed as a collection of hands-on cybersecurity exercises and a framework for creating them. Now it includes tools for an instructor to see how students are doing as they complete an exercise (Mirkovic 2020, Weiss 2017). One of the challenges for both online and in-person instruction is to be able to give students meaningful feedback on their lab work while they are doing a lab assignment. The instructor could go around the lab and asking each student how they are doing, but that could interrupt the ones who are doing well and it doesn't allow the instructor to focus on the ones who are struggling and need it most. The challenge is that the amount of data produced is typically thousands of lines even for a class of 25.

**Description**

The students are expected to gain experience in computer science research, including machine learning and cybersecurity. The goal of this project is to apply machine learning to analyze data from students engaged in a lab assignment and present the results visually to the instructor for prompt intervention. EDURange already has assignments (exercises) where students are interacting with a computer and can collect data from each student.

**Responsibilities of Fellows and Knowledge and Experience To Be Gained**

The research objective is to analyze the data and present them to the instructor for rapid identification of students who are struggling.

The components of the project are

1. Clean and organize the data from EDURange
2. Implement clustering and classification algorithms
3. Analyze the results to identify the most promising approaches
4. Write a paper with the findings and present them

**Number Of Fellows**

**1**

**Describe the Accomplishments hoped to Achieve of Undergraduate Fellows (anticipated progress)**

The students will be expected to read background literature on the topic (provided by faculty), meet with faculty regularly to provide updates and seek guidance, design experiments and produce a written report by the end of the summer. The students should also create a poster communicating their research and results to a general audience.

Students will be welcome to continue to work on this project after they summer if they should choose and could have the opportunity to work on a journal manuscript in the future.

**2021 Summer Undergraduate Research Fellowship (SURF) Program  
Faculty Projects**

**Project Number 6: *Being Human: Human Development Recommendations from Traditional Cultures.***

<b>Faculty Name</b>	<b>Faculty Email</b>	
<b>Hirsh Diamant</b>	diamanth@evergreen.edu	<b># of FELLOWS--- One</b>

What a piece of work is a (human being)!  
 How noble in reason, how infinite in faculty!  
 In form and moving how express and admirable!  
 In action how like an angel, in apprehension how like a god!  
 ("Hamlet" by William Shakespeare)

Contemporary cultures assign great importance to technological development. Traditional cultures by comparison placed greater value on development of good human beings. For example, traditional Chinese culture developed the concept of Zhenren 真人. Zhenren that can be translated as true, or authentic human being. Chinese culture also developed the concept or Ren 仁. Ren can be translated as human-heartedness, humaneness, benevolence, and goodness. Can these concepts be cultivated and practiced? What are the recommendations of Chinese and other traditional cultures on human development?

**Description**

Specifically, SURF Fellows will read and translate from Daodejing, Huangdi Neijing, and Analects to create artworks, films, and animations illuminating cultivation of good (authentic) human beings. The researchers will develop a thesis that an understanding of traditional practices can help students on their own journey of learning and transformation.

**Responsibilities of Fellows and Knowledge and Experience To Be Gained**

The fellows will gain research skills, intermediate to advanced levels of cultural competency, and experience in working with animation.

**Number Of Fellows**

**1**

**Describe the Accomplishments hoped to Achieve of Undergraduate Fellows (anticipated progress)**

SURF Fellows will survey traditional Chinese Daoist and Confucian texts and compare recommendations of Chinese culture with recommendations from other cultures, including Native American, Hebrew, and Indian cultures. We will consider a question: Can recommendations from traditional cultures help us to re-imagine human development and foster development of a healthier relationship to ourselves and the world?

**2021 Summer Undergraduate Research Fellowship (SURF) Program  
Faculty Projects**

<b>Project Number 7: Study of organic farming practices/Food and Agriculture</b>			
<b>Faculty Names</b>	<b>Faculty Email (s)</b>		
<b>Martha Rosemeyer, Sarah Williams, Steve Scheuerell</b>	rosemeym@evergreen.edu; williasa@evergreen.edu; scheuers@evergreen.edu		<b># of FELLOWS--- One</b>
<p>In this project, student(s) will first participate in a field study according to specifications from the Northern Organic Vegetable Improvement Collaborative (NOVIC) to address organic farmers seed and plant breeding needs. The student will gather data on tomato varieties (<i>Lycopersicon</i> spp.) and chicory (<i>radicchio</i>, <i>Cichorium intybus</i>) varieties concerning growth habits, disease and insect pest infestations, yield and flavor. NOVIC partners with more than 30 organic farmers throughout the country to breed and identify the best performing varieties for organic agriculture, and educate farmers on organic seed production and plant variety improvement. Varieties are also evaluated by the national Culinary Breeding Network for taste and flavor.</p> <p>This field study will be a continuation from the successful variety trial studies conducted at the Organic Farm of The Evergreen State College in 2017, 2018, 2019 and 2020 (see below under Anticipated Accomplishments).</p>			
<b>Description</b>			
<p>Student(s) will have different duties as the season progresses; workload is commensurate with an engaged student over a cropping season. Students will be first expected to design and plant the field experiment at our campus Organic Farm. Early meetings will be necessary to lay out the research design, schedules, and proper use of lab and field equipment and communicate with the farm manager. Fellows will be expected to spend up to 5h/week studying relevant reading material, writing and analyzing gathered data, and logging the activities online so that other members of the university and other NOVIC partners can access. Faculty will provide an ePortfolio template for data collection, weekly reporting, and project documentation, as well as guidance for all necessary procedures and methodologies. Members of the faculty team will meet with the students to discuss data reports, consult on data analysis and documentation of the project.</p>			
<b>Responsibilities of Fellows and Knowledge and Experience To Be Gained</b>			
<p>The student will plant seeds, care for seedlings, and transplant seedlings and then maintain the field plots including irrigation, weed management, trellis installation, and plant pruning/training. Students will spend approximately 15 hrs./week monitoring the field experiment and documenting all necessary data. Students will gain experience in basic ecological data collection, data analysis and writing.</p>			
<b>Number Of Fellows</b>			
<b>1</b>			
<b>Describe the Accomplishments hoped to Achieve of Undergraduate Fellows (anticipated progress)</b>			
<p>This project will become a capstone example of organic farming practices for the SURF student(s) as well as the Food and Agriculture Path of Study, including collaboration with academic programs that Drs. Rosemeyer, Williams and Scheuerell will offer throughout the growing season 2021.</p> <p>Our participation in a national field trial will enhance the Food and Agriculture Path of Study curriculum in multiple ways including creating connections with participating institutions, being able to offer sensory evaluation labs for on-going programs, and having an on-campus field research project for demonstrating study design, plot maintenance, data collection, and data analysis within academic programs.</p>			

**2021 Summer Undergraduate Research Fellowship (SURF) Program  
Faculty Projects**

**Project Number 8: *Olympia Oyster Restoration at the Evergreen Beach Feasibility Study, Proposal Development and Shellfish Husbandry***

<b>Faculty Name</b>	<b>Faculty Email</b>		
<b>Pauline C. Yu</b>	yup@evergreen.edu		<b># of FELLOWS--- One</b>

The Olympia oyster is the native oyster to the Pacific Coast of the US and was a staple food for Native Americans all throughout their habitat. The fellow will research and document the feasibility of restoring-reintroducing Olympia oysters at the Evergreen Beach, where there is a mix of native bivalves and introduced aquaculture species. The fellow would be building on the research by past Shellfish Club members and providing documentation of habitat suitability and feasibility for Olympia oyster establishment. The background research would incorporate a beach survey to look for evidence of current Olympia oyster presence, researching of historical evidence, and compiling documentation of current Olympia oyster aquaculture and restoration in the area toward the goal of writing a research report.

Faculty member Pauline Yu along with Sarah Williams and Steve Schuerell reseeded the Evergreen Shellfish Garden last summer with the assistance of a SURF Fellow, and the student is continuing to steward the growth of the oysters until her graduation. The proposed SURF Fellow will further the revitalization of the Shellfish Garden but turning more attention to the potential of having Olympia oysters at the beach.

**Description**

In this project, the fellow will work with faculty Pauline Yu on stewarding the Evergreen Shellfish Garden and will help develop a feasibility proposal for the introduction of Olympia oyster (*Ostrea conchiphila*) culture to the Evergreen Shellfish Garden. The summer season will provide ideal access to the tidal flats of the Evergreen Beach during daytime low tides.

**Responsibilities of Fellows and Knowledge and Experience To Be Gained**

The fellow will conduct research using both electronic library resources and through conducting some interviews with relevant experts. They will amass a bibliography of reference materials and also collect qualitative data from the interviews, and serve as data custodians for the summer. I will expect the fellow to write up a report at the end of the summer summarizing the literature and the information necessary to develop a more detailed proposal for a Olympia oyster restoration. They will develop and refine their skills in scientific writing and presentation.

**Number Of Fellows**

**1**

**Describe the Accomplishments hoped to Achieve of Undergraduate Fellows (anticipated progress)**

The fellow will also be responsible for conducting field research on bivalves and animal husbandry. The fellow will gain experience with observing and identifying both the wild and seeded shellfish, as well as develop the knowledge of relevant shellfish aquaculture.

**2021 Summer Undergraduate Research Fellowship (SURF) Program  
Faculty Projects**

<b>Project Number 9: <i>Oral Stereotypic Behavior in Dairy Cattle</i></b>		
<b>Faculty Name</b>	<b>Faculty Email</b>	
<b>Mike Paros</b>	parosm@evergreen.edu	<b># of FELLOWS--- One</b>
<p>Stereotypies are defined as repetitive, invariant behaviors without an obvious goal or function. The appearance of such behaviors in a population can indicate a problem in the environment that has led to frustration or boredom. To our knowledge, oral stereotypic behavior in dairy cattle on U.S. farms has not been studied. Anecdotally, tongue rolling is common on many dairies across the U.S., with a significant higher rate observed in the Jersey Breed. A prospective study nested with case-control design will assess any genetic association with oral stereotypy behavior. A genome-wide association study (GWAS) will be conducted comparing cases (animals that oral stereotypy) with controls.</p>		
<b>Description</b>		
<p>We will conduct an observational study at Three Mile Canyon Farms in Boardman Oregon. Instantaneous scan sampling will be used to observe behaviors in recently weaned calves and older heifers. An ethogram will be created in order to quantify and describe oral stereotypies in calves and heifers. The dairy milks approximately 12,000 cows twice a day on a double rotary milk parlor, each with 80 stalls.</p> <p>We will place high-resolution cameras in both rotaries so that indirect instantaneous scan sampling can identify individual animals that tongue roll. Total number of animals and individual information on calves, heifers, and milking cows in each pen will be converted to an Excel spreadsheet from the farms herd management record keeping system corresponding to direct and indirect behavioral observations. Prevalence of animals classified as tongue rolling and/or high oral stereotypy and controls will be compared between sires and pedigrees.</p>		
<b>Responsibilities of Fellows and Knowledge and Experience To Be Gained</b>		
<p>The fellow(s) must be able to spend some time in Boardman Oregon. Housing will be provided. Fellow(s) will gain valuable experience in experimental design and data analysis while preparing for graduate work in the fields of Animal Behavior, Animal Welfare Science, Genomics, Dairy Science, and Veterinary Medicine</p>		
<b>Number Of Fellows</b>		
<b>1</b>		
<b>Describe the Accomplishments hoped to Achieve of Undergraduate Fellows (anticipated progress)</b>		
<p>The fellow will also be responsible for conducting field research on bivalves and animal husbandry. The fellow will gain experience with observing and identifying both the wild and seeded shellfish, as well as develop the knowledge of relevant shellfish aquaculture.</p>		

**2021 Summer Undergraduate Research Fellowship (SURF) Program  
Faculty Projects**

<b>Project Number 10: <i>Digital / Haptic/ Domestic: Supporting Tactile Learning Online</i></b>		
Faculty Name	Faculty Email	
<b>Julia Heineccius</b>	heineccj@evergreen.edu	<b># of FELLOWS--- One</b>
<p>Faculty and student research fellow will develop a series of up to 3 modules that combine 3D “craft” techniques (such as metalsmithing/woodworking fiber arts/ ceramics with “new media” (film/digital/audio/virtual reality spaces). This reasearch will work towards investigating the following: Information about tactile art making is flourishing online through free (You Tube) and paywall- based educational videos. As we work within and towards a new educational norm that includes students establishing 3D art, craft, and design practices within a variety of domestic environments, how can we enhance student learning through a more customized and immersive multimedia experience?</p>		
<b>Description</b>		
<p>Intermediate knowledge of digital filming techniques and editing software for short form videos (such as Adobe Premiere). Strong interest of beginning experience in audio recording. Strong interest in combining 3D “craft” techniques (such as metalsmithing/woodworking/fiber arts/ceramics) with “new media” (film/digital/audio/virtual reality spaces). Interest in developing hybrid educational experiences that enhance current online models. Student fellow will need to have requisite proficiencies in video and audio recording equipment, and be able to obtain Evergreen Media Services loan approval for equipment as needed.</p>		
<b>Responsibilities of Fellows and Knowledge and Experience To Be Gained</b>		
<p>Fellow responsibilities: develop modules with faculty, filming and editing.</p> <p style="padding-left: 40px;">Developing multi-media modules with faculty will be done remotely, and would occur from late June into July. Development activities could include:</p> <ul style="list-style-type: none"> <li>- Discussion between faculty and fellow of ways that video, audio, and virtual 3D spaces could be best used describe and simulate working with 3D materials,</li> <li>- Scripting at least one, and up to three, short video projects (5-15 minutes) that will show a particular 3D material technique,</li> <li>- Other project development work, including research into new software that may allow for unique visual, audio, or virtual 3D effects.</li> </ul> <p style="padding-left: 40px;">Filming will be done in Evergreen Olympia Campus studios and would occur from late July into August.</p> <ul style="list-style-type: none"> <li>- Primary project filming work will be done in the fine metals studio, with possible secondary projects occurring in the other 3D studios on campus (large metals, wood, ceramics),</li> <li>- Filming work will be done with COVID protocols in place, using tripods and other peripherals as needed to film close-up shots with social distancing.</li> </ul> <p style="padding-left: 40px;">Editing of short-form videos will be done remotely and would occur from late August into the first week of September.</p> <ul style="list-style-type: none"> <li>- Anticipating that on-campus media labs will not yet be available due to COVID restrictions, the faculty and student fellow will work together to make sure the student fellow has access to the necessary equipment and software to engage in film and audio editing processes.</li> </ul> <p>Knowledge and experience to be gained: Student fellow will collaborate on developing project content, enabling them to complete a set of short-form multimedia works that could be shared in future portfolios. Student will gain a greater understanding of several art, craft, and design techniques. By engaging in designing cross-disciplinary educational art experiences, the student fellow will also gain an understanding of how hands-on learning can be communicated via non-tactile digital media.</p>		

## 2021 Summer Undergraduate Research Fellowship (SURF) Program Faculty Projects

Number Of Fellows
1
<b>Describe the Accomplishments hoped to Achieve of Undergraduate Fellows (anticipated progress)</b>
<p>Development of this project with the assistance of an undergraduate research fellow would result in the development of flipped classroom possibilities that could allow the college experience of 3D art, craft, and design to be more flexible than what is currently offered in the marketplace.</p> <p>High-impact hands-on learning experiences in the academic spheres of 3D art, craft, and design currently require students to spend a considerable amount of time in the studio - outside of class time - to hone their technical abilities and produce work that will allow them to successfully engage with professional opportunities or postgraduate studies after they achieve their undergraduate degree.</p> <p>Developing learning tools that can be accessed online would enable faculty to work more intensively with students one-on-one while they are in class, increasing equity and access for students that cannot spend 20+ additional hours outside of class in campus studios.</p> <p>Watching an expert in a well-shot video with sophisticated editing can allow the viewer (or student) to begin to learn about certain technical aspects of art and design, but these videos can also hide the amount of time needed to develop the skills they see in the video. To move from a beginning understanding to expertise requires hours of hands-on work with materials and techniques.</p> <p>Online-ready multimedia content on 3D subject matter will not replace the amount of hands-on time needed to develop real skill and understanding, but could virtually connect student domestic spaces - where thinking and tinkering can begin - with campus studios where students can continue to develop their skills using campus technology, equipment, and staff expertise. Exploring combinatory modes of virtual and hands-on learning could open up increasingly flexible opportunities for students to engage with 3D art, craft, and design fields.</p>