



# Spring 2019 UConn IDEA Grant Award Recipients

Congratulations to the 33 UConn undergraduates who have been awarded UConn IDEA Grants! 23 of the award recipients will be completing individual projects, and 10 will be working on collaborative group projects.

The award recipients represent a variety of disciplines, from anthropology to animal science, and from biomedical engineering to art. They will conduct independent research, develop creative works in different media, and lay the groundwork for entrepreneurial ventures.

Special thanks to the faculty and staff who supported student applications to the UConn IDEA Grant and to those who will be mentoring the award recipients as they complete their projects.

## Individual Projects

**Marlene Abouaassi '20** (Molecular & Cell Biology, CLAS; Sociology, CLAS)

*Study of Putative Niche Adapting Operon in Microbes Inhabiting the Gut of Blood Digesting Animals*

Mentor: Peter Gogarten, Molecular & Cell Biology, CLAS

- Marlene is examining the sialic acid utilization gene operon, which facilitates survival and propagation of bacteria in the presence of erythrocytes. She will study how gene acquisition allows specific bacterial lineages to utilize sialic acid as an alternate source of carbon and nitrogen.

**Alyssa Adesso '20** (Molecular & Cell Biology, CLAS)

*Exploring the Relationship Between the Microbiome and Immune System in Zebrafish*

Mentor: Sarah Knutie, Ecology & Evolutionary Biology, CLAS

- Alyssa will explore the impact the microbiome has on the development of the adaptive immune response in zebrafish by experimentally manipulating the fish's microbiome.

**Sarah Arnett '20** (Cognitive Science, CLAS; Speech, Language & Hearing Sciences, CLAS)

*Evaluating the Verbal Language Use of People with Aphasia in Non-Clinical Settings: A Feasibility Study using LENA Technology*

Mentor: Jennifer Mozeiko, Speech, Language & Hearing Sciences, CLAS

- Sarah will analyze the verbal language output of people with aphasia and non-brain injured participants in their home environments using the Language Environment Analysis (LENA) software. Identifying trends correlated with greater language gains may have clinical implications for better patient outcomes.

**Austin Carfi '20** (Digital Media & Design, SFA)

*AuVi: Promoting Undiscovered Music and Visual Content*

Mentor: John Murphy, Digital Media & Design, SFA

- Austin is developing and launching a content blog – AuVi - showcasing the work of recording and visual artists. AuVi will be an online community for up-and-coming, co-dependent artists to be seen and heard by one another, as well as the outside world.

**Danielle Cross '22** (Psychological Sciences, CLAS; Political Science, CLAS)

*The Effect of Race-Based Stereotypes on Diversity in Superhero Films*

Mentor: Felicia Pratto, Psychological Sciences, CLAS

- Danielle is exploring the underrepresentation of people of color in mass media by examining perceptions of stereotypical and counter-stereotypical superhero portrayals by black individuals.

**Donny Davino, Dec. '21** (Mathematics/Physics, CLAS)  
*Superconductivity and Quantum Critical Point Research*  
Mentor: Ilya Sochnikov, Physics, CLAS

- Donny aims to discover more efficient and higher temperature superconductors. Specifically, SrTiO<sub>3</sub> will be experimented with using variations of strain and Nb doping in order to map a low temperature phase diagram of SrTiO<sub>3</sub>.

**Margaret Fitzpatrick '20** (Nursing, NUR)  
*Uncovering the Lived Experiences of Latina Adolescent Mothers during Their Pregnancy*  
Mentor: Ruth Lucas, Nursing NUR

- Margaret will conduct a phenomenological study to unveil individual experiences of Latina adolescent mothers. Themes revealed after analysis may inform further studies, elucidate educational opportunities, and identify potential improvements in health care for this population.

**Nathalia Hernandez '20** (Molecular & Cell Biology, CLAS; Spanish, CLAS)  
*Identifying Electrode Placement in the Hippocampus Using the Microorganism *Bacillus subtilis**  
Mentor: Etan Markus, Psychological Sciences, CLAS

- Nathalia will use the microorganism, *Bacillus subtilis*, as a marker to locate electrode tips that were inserted in the hippocampus region of the brain, aiding in experiments that work with extracellular recordings.

**Daria Larson '20** (Animal Science, CAHNR; Environmental Studies, CAHNR)  
*Effect of Feeding Probiotics on Muscle Growth in Chicken*  
Mentor: Mary Anne Amalaradjou, Animal Science, CAHNR

- For this study, Daria will investigate the effect of probiotics in the feed on the muscle growth in broiler chickens with the goal of finding a suitable replacement to antibiotics in animal feed.

**Daniel McCloskey '20** (Anthropology, CLAS)  
*Brothers as Men: Masculinity, Homosociality, and Violence Among Fraternity Men*  
Mentor: Francoise Dussart, Anthropology, CLAS

- Daniel will employ qualitative research methods to engage fraternity men about their constructions of masculinity as well as ideas about homosociality and sexual violence.

**Alex Oddo '20** (Chemistry, CLAS)  
*The Design of Bio-Derived Solar Technology: Coupling Protein Hydrogels to Light Harvesting Upconversion Systems*  
Mentor: Challa Kumar, Chemistry, CLAS

- Solar cells struggle to convert low-energy light into electrical energy. The goal of Alex's project is to synthesize, optimize, and analyze a protein hydrogel capable of sustaining "upconversion," a phenomenon that can convert otherwise wasted light into higher-energy light for improved solar intake.

**Amanda Pan '20** (Pharmacy Studies, PHR; Molecular & Cell Biology, CLAS)  
*Formulation of Acetaminophen for Rapid Dissolution and Absorption Sublingually*  
Mentor: Diane Burgess, Pharmaceutical Sciences, PHR

- Amanda strives to develop a thin, fast dissolving film that incorporates the painkiller acetaminophen that can be administered under the tongue to provide quick pain relief.

**Jeffrey Rasmussen '20** (Physiology & Neurobiology, CLAS)  
*Investigating the Role of Adipose Tissue in the Prognosis of Amyotrophic Lateral Sclerosis*  
Mentor: Rahul Kanadia, Physiology & Neurobiology, CLAS

- To better understand the role of fat in delaying the severity of amyotrophic lateral sclerosis (ALS) pathology, Jeffrey will investigate the metabolic baseline of mice with ALS to determine the relationship between adipose tissue and longevity in mice with ALS.

**Esme Roszel '20** (Puppetry, SFA)

*My Dear Little Mother: A Puppetry Retelling of a Lost Correspondence*

Mentor: Bart Roccoberon, Puppet Arts, SFA

- Inspired by her twice-great uncle's letters home from the front, Esme is developing an original live puppet show that explores the bond of a mother and son during the First World War and expresses the complexities of grief and loss.

**Angelis Sanchez Delvalle '20** (Art – Animation & Illustration, SFA)

*The Vanishing Twin: A Stop-Motion Animation*

Mentor: Alison Paul, Art & Art History, SFA

- Angelis is creating an original 3-minute stop-motion animation that engages the audience with a unique artistic style and dark humor.

**Ian Sands '20** (Biomedical Engineering, ENG)

*Engineering Nanomaterials for siRNA Therapy against Multiple Sclerosis*

Mentor: Yupeng Chen, Biomedical Engineering, ENG

- Ian will explore the capabilities of Nanopieces as an RNA inhibitory drug delivery system into the central nervous system via cerebral spinal fluid. This project will test the efficacy of the inhibition of pro-inflammatory cytokines responsible for the progression of multiple sclerosis.

**Brock Sanford '21** (Art - Printmaking, SFA)

*Working on a Dream: The Terms of Precarity*

Mentors: Robin Greely, Art & Art History, SFA; Ray DiCapua, Art & Art History, SFA

- Brock will engage in a collaborative art project that investigates precarity, labor, and value, through the participation of working people in creating a diptych of large charcoal drawings.

**Valeria Sarmiento, Dec. '20** (Molecular & Cell Biology, CLAS; IMJR: Global Health & Nutrition, CLAS)

*Investigating the Mechanisms of Plastid Division in the Human Pathogen *Toxoplasma gondii**

Mentor: Aoife Heaslip, Molecular & Cell Biology, CLAS

- Valeria will study the specific mechanisms of a unique motor protein related to plastid division in the human pathogen *Toxoplasma gondii* with the goal of potentially identifying a new direction for drug development targeting this parasite.

**Suli Serrano-Haynes '20** (English, CLAS; English Education, ED)

*Bridging the Gap: Empowering the Voices of Black Women in University Classrooms*

Mentor: Justin Evanovich, Educational Leadership, ED

- Suli is examining Black female experiences as part of university-based classroom discussions. The goal is to participate in the greater conversation - supporting Black Women pursuing higher education - and provide university stakeholders with information to better serve their students.

**Hannah Smaglis '20** (Art - Photography, SFA)

*Idiosyncratic: Self-Expression through Unconventional Materials*

Mentor: Ray DiCapua, Art & Art History, SFA

- Idiosyncratic will showcase self-expressive fashion designs that Hannah will create to visually represent the identities and capture the individuality of the models wearing each garment.

**Lindsey Vandermeir '21** (Animal Science, CAHNR)

*Cholesterol-Lowering and Anti-inflammatory Potential of Select Probiotic Strains*

Mentor: Mary Anne Amalaradjou, Animal Science, CAHNR

- Lindsey will study the protective effects that probiotics have on liver health by determining which probiotic strains have cholesterol-lowering and anti-inflammatory properties.

**Luke Villani '21** (History, CLAS)

*Colonial Simsbury Archaeological Excavation*

Mentor: Walter Woodward, History, CLAS

- Luke will conduct excavations of lost historic sites of colonial homes, forts, and other structures within the boundaries of Historic Simsbury (modern East Granby, Granby, and Simsbury) at sites that he has researched and identified.

**Jacob Webber '22** (Classics and Ancient Mediterranean Studies, CLAS; Linguistics/Philosophy, CLAS)

*The Ambiguity of Interpretation: An Analysis of the Catullus Anthology in Latin and Translation*

Mentor: Joseph McAlhany, History, CLAS

- Jacob will research translational theory as it applies to various translational interpretations of the anthology of Roman poet Catullus. He will compare a personal translation with other interpretations in order to evaluate the efficacy of various translational practices.

## Group Projects

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**Jeremy Bennett '21** (Biomedical Engineering, ENG; Computer Science & Engineering, ENG)

**Ava Fritz '20** (Biomedical Engineering, ENG)

*Investigating Genetic Variation in White Ash to Reduce Tree Mortality against Invasive Species*

Mentor: Jill Wegrzyn, Ecology & Evolutionary Biology, CLAS

- Jeremy and Ava will analyze the variation among populations of white ash trees in Connecticut to find evidence of resistance against invasive emerald ash borers by genome-wide association. They will also implement machine-learning approaches for image recognition of common tree diseases in a mobile application.

**Margaret Chafouleas '22** (Environmental Sciences, CAHNR)

**Charlotte Lao '20** (Biomedical Engineering, ENG)

**Eric Wang '21** (Biomedical Engineering, ENG; Computer Science & Engineering, ENG)

**Jiaqi Yang '21** (Communication, CLAS)

*Yosemite Lights - A Travel Documentary Film*

Mentor: Stephen Stifano, Communication, CLAS

- The group will travel to Yosemite National Park to film a travel documentary centered around the journey, the creative process, and the awe that traveling and photography evoke. They will combine captivating scenes of nature, reflective narration, and candid footage of their travels to create an energetic and expressive film.

**Allyson Cosman '21** (Exercise Science, CAHNR)

**Sejal Khant '21** (Allied Health Sciences, CAHNR)

*The Correlation Between Endurance Exercise and Music Conditions on Neurotransmitter Release in 18-24 Year Olds*

Mentor: Jaci VanHeest, Educational Psychology, ED

- Allyson and Sejal will investigate the correlation between varying music conditions - liked and disliked musical playlists - and neurotransmitter release, specifically dopamine and serotonin, in people partaking in endurance cycling exercise.

**Gregory Haydon '21** (Mechanical Engineering, ENG)

**Mitchell Johnson '22** (Electrical Engineering, ENG)

*Design and Construction of Electric Vehicle Safety Monitoring System*

Mentor: Sung Yeul Park, Electrical & Computer Engineering, ENG

- Gregory and Mitchell will develop an electrical safety and monitoring system for the UConn Electric Motor Sports electric car that also transmits real-time data wirelessly to a laptop for car diagnostics, which will enable faster vehicle testing and calibration.

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The UConn IDEA Grant program awards funding to support self-designed projects including artistic endeavors, community service initiatives, entrepreneurial ventures, research projects, and other creative and innovative projects. Undergraduates in all majors at all campuses can apply. Applications are accepted from individuals and from small groups who plan to work collaboratively on a project.

More information on the UConn IDEA Grant program can be found at <http://ugradresearch.uconn.edu/IDEA>.