



2020 Summer Undergraduate Research Fund (SURF) Awards

Congratulations to the 50 undergraduate SURF Award recipients for Summer 2020! These UConn students were selected from an exceptionally strong group of applicants representing diverse areas of academic inquiry.

Thank you to the research advisors and other faculty members who supported SURF applicants, to the faculty who served on the selection committee, and to the many generous supporters who make this program possible.

Rachel Bahouth '21 (Biological Sciences, CLAS)

Project Title: Does Food Supplementation Influence Parasite Community Composition Across the Geographic Range of Eastern Bluebirds (*Sialia sialis*)?

Faculty Mentor: Dr. Sarah Knutie, Ecology and Evolutionary Biology

Annika Benedetti '21 (Natural Resources, CAHNR)

Project Title: The Interplay of Environmental and Viral Stress on the Timing of Wood Frog Mortalities

Faculty Mentor: Dr. Tracy Rittenhouse, Natural Resources and the Environment

Serena Beri '22 (Biological Sciences, CLAS)

Project Title: Investigating RGC Subtype-Specific Expression of Various Integrin Subunits

Faculty Mentor: Dr. Ephraim Trakhtenberg, Neuroscience

Akriti Bhattarai '21 (Molecular and Cell Biology, CLAS)

Project Title: Identification of Putative Resistance Genes in the Sugar Pine Genome (*Pinus lambertiana*) and across the White Pines

Faculty Mentor: Dr. Jill Wegrzyn, Ecology and Evolutionary Biology

Gavin Birdsall '21 (Physiology and Neurobiology, CLAS)

Project Title: Using Genetic Barcodes to Assess Clonal Diversity in a Model of Ependymoma Brain Tumors

Faculty Mentor: Dr. Joseph LoTurco, Physiology and Neurobiology

Malachi Bridges '21 (Political Science, CLAS; Africana Studies, CLAS)

Project Title: Blacks and The American Dream: The Study of Why African Americans are Socially Immobile

Faculty Mentor: Dr. Fiona Vernal, History

Julie Brisson '21 (Human Development and Family Sciences, CLAS; Psychological Sciences, CLAS)

Project Title: The Relationship between Adverse Childhood Experiences and Allostatic Load across the Lifespan: A Systematic Review and Meta-Analysis

Faculty Mentor: Dr. Blair Johnson, Psychological Sciences

Rei Bufi '21 (Molecular and Cell Biology, CLAS; Individualized Major: Globalization, Art, and Activism, CLAS)

Project Title: The Need for Evidence-Based Exercise Intervention for Non-Alcoholic Fatty Liver Disease: A Systematic Review and Meta-Analysis

Faculty Mentor: Dr. Linda Pescatello, Kinesiology

Emma Burleigh '21 (Physiology and Neurobiology, CLAS)

Project Title: Investigation of the Behavioral Role of Tac2 Neurons Projecting to the Lateral Hypothalamic Area

Faculty Mentor: Dr. Alexander Jackson, Physiology and Neurobiology

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Mari Cullerton '21 (Environmental Sciences, CAHNR; Natural Resources, CAHNR)

Project Title: Field-Based Disturbance Ecology, Remote Sensing, and Geospatial Analysis: An Interdisciplinary Approach to the Evaluation of the Role of Secondary Mortality Agents in Forest Disturbances

Faculty Mentor: Dr. Robert Fahey, Natural Resources and the Environment

Mukund Desibhatla '21 (Physiology and Neurobiology, CLAS; Spanish, CLAS)

Project Title: Effects of Novel Dopamine Transport Inhibitor (S)-CE-196 on Effort-Related Choice Behavior in Rats

Faculty Mentor: Dr. John Salamone, Psychological Sciences

Hanna Englander '21 (Physiology and Neurobiology, CLAS)

Project Title: Impact of Post Treatment Conditions on *E. coli* Persistence and Resistance Development

Faculty Mentor: Dr. Wendy Mok, Molecular Biology and Biophysics

Alexander Ercolani '21 (Computer Science and Engineering, ENG; Physics, CLAS)

Project Title: Development of a Neural Network for Data Processing

Faculty Mentor: Dr. Richard Jones, Physics

Daniel Fairchild '21 (Structural Biology and Biophysics, CLAS; Molecular and Cell Biology, CLAS)

Project Title: Near IR Tethered Bichromophoric Fluorophore-Quencher Voltage Sensitive Dye

Faculty Mentor: Dr. Ping Yan, Center for Cell Analysis and Modeling

Kyra Foster '23 (Nutritional Sciences, CAHNR)

Project Title: Understanding Obesity: Barriers and Assets to Healthy Eating in Adults Living in Food Deserts

Faculty Mentor: Dr. Loneke Blackman Carr, Nutritional Sciences

Alexandra Frenzel '21 (Marine Sciences, CLAS)

Project Title: Variable Gene Expression in *Salpa aspera* in the North Atlantic

Faculty Mentor: Dr. Ann Bucklin, Marine Sciences

Jenifer Gaitan '21 (History, CLAS)

Project Title: Voces: First-Generation Latinx Students Discuss Their Support Networks

Faculty Mentor: Dr. Laura Bunyan, Sociology

Peter Goggins '21 (Environmental Sciences, CAHNR)

Project Title: Influences of Habitat Quality on Juvenile Condition in Anadromous Alewives (*Alosa pseudoharengus*)

Faculty Mentor: Dr. Eric Schultz, Ecology and Evolutionary Biology

Samhita Gurralla '21 (Nutritional Sciences, CAHNR)

Project Title: Antioxidant Levels in Capsule vs Powder Coffee

Faculty Mentor: Dr. Ock K. Chun, Nutritional Sciences

Elena Haarer '21 (Molecular and Cell Biology, CLAS)

Project Title: Defining the Functions of the Actin Cytoskeleton in Cellular Senescence and Biological Aging

Faculty Mentor: Dr. Kenneth Campellone, Molecular and Cell Biology

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Caroline Hebert '21 (Speech, Language, and Hearing Sciences, CLAS; Cognitive Science, CLAS)
Project Title: Effects of Timing and Modality of Language Exposure on Spontaneous Counting as an Augmentative Tool for Mapping
Faculty Mentor: Dr. Marie Coppola, Psychological Sciences

Daniel Hettrick '21 (Physiology and Neurobiology, CLAS)
Project Title: Locating Lateral Amygdala Projecting Neurons in the Motor Cortex
Faculty Mentor: Dr. Linnaea Ostroff, Physiology and Neurobiology

Avni Jain '21 (Physiology and Neurobiology, CLAS; Human Rights, CLAS)
Project Title: Developing a Murine Model for Understanding Impulse-Noise Induced Tinnitus
Faculty Mentor: Dr. Douglas Oliver, Neuroscience

Sarah Kricheff, Dec. '20 (Molecular and Cell Biology, CLAS)
Project Title: Developing a Biosensor for Mechanical Tension in Live Cells
Faculty Mentor: Dr. Yi Wu, Genetics and Genome Sciences

Katherine Lee '22 (Structural Biology and Biophysics, CLAS)
Project Title: Computational Investigations into Allosteric and Binding Dynamics of Tau Protein Antibodies: Affinity, Specificity and the Potential for Intentional Design
Faculty Mentor: Dr. Eric May, Molecular and Cell Biology

Olivia Lemieux '22 (Environmental Sciences, CLAS; Ecology and Evolutionary Biology, CLAS)
Project Title: Assessing Allopolyploidy and Speciation across the *Physcomitrium pyriforme* Moss Complex
Faculty Mentor: Dr. Bernard Goffinet, Ecology and Evolutionary Biology

Victoria Livingston '21 (Chemistry, CLAS)
Project Title: Aerogel-Like Hybrid Structures Produced by Crosslinking Hollow Polymer Nanocapsules via Click Chemistry
Faculty Mentor: Dr. Eugene Pinkhassik, Chemistry

Joel Lopez '21 (Psychological Sciences, CLAS)
Project Title: Allosteric Modulators for the Treatment of Addiction
Faculty Mentor: Dr. Gregory Sartor, Pharmaceutical Sciences

Joshua Lovett-Graff '21 (Women's, Gender, and Sexuality Studies, CLAS; Chemical Engineering, ENG)
Project Title: Emotional and Social Frameworks of Loneliness in Literature
Faculty Mentor: Dr. Regina Barreca, English

Carly Malesky '21 (Physiology and Neurobiology, CLAS; Psychological Sciences, CLAS)
Project Title: Investigating the Neural Mechanisms for the Classification of Vocalization Sequences
Faculty Mentor: Dr. James Chrobak, Psychological Sciences

Roshni Mehta '22 (Molecular and Cell Biology, CLAS; French, CLAS)
Project Title: Who Let the DoGs Out? An Analysis of RNA Transcription Readthrough and Termination
Faculty Mentor: Dr. Leighton Core, Molecular and Cell Biology

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Jayla Millender '21 (Molecular and Cell Biology, CLAS; Africana Studies, CLAS)

Project Title: The Impact of Angiogenic and Osteogenic Factors in the Presence of Biodegradable Piezoelectric Films In Vitro

Faculty Mentor: Dr. Thanh Nguyen, Mechanical Engineering

Nivedha Natchiappan '21 (Health Care Management, BUS)

Project Title: Controlling UPEC Using Lactic Acid Bacteria

Faculty Mentor: Dr. Kumar Venkitanarayanan, Animal Science

Seema Patel '22 (Molecular and Cell Biology, CLAS)

Project Title: TLS Inhibitors: A Promising Class of Compounds as Anti-Cancer Agents

Faculty Mentor: Dr. Kyle Hadden, Pharmaceutical Sciences

Shiv Patel '22 (Physiology and Neurobiology, CLAS)

Project Title: The Effects of Aerobic Compared to Resistance Exercise Training on Lipids and Lipoproteins in Obesity

Faculty Mentor: Dr. Jeanne McCaffery, Allied Health Sciences

Alyssa Peterson '22 (Physiology and Neurobiology, CLAS)

Project Title: Investigating the Activation Properties of an Antioxidant Polymer on Hair Follicle Stem Cells

Faculty Mentor: Dr. Lakshmi Nair, Orthopedic Surgery

Aquia Providence '21 (Geoscience, CLAS)

Project Title: Using Thermochronology to Quantify the Timing and Effect of Tectonic Uplift on Erosional Rates along the San Andreas Fault Plate Boundary, Southern California

Faculty Mentor: Dr. Julie Fosdick, Geosciences

Maryann Quigley, Dec. '20 (Speech, Language, and Hearing Sciences, CLAS)

Project Title: Does Language Experience Influence the Development of the Approximate Number System?

Faculty Mentor: Dr. Marie Coppola, Psychological Sciences

Ariana Rojas '21 (Molecular and Cell Biology, CLAS)

Project Title: The Role of Taxi, Miniature, and an Uncharacterized Homeobox Gene in the Development of Double-Layered Epithelium in *Oncopeltus fasciatus*

Faculty Mentor: Dr. Elizabeth Jockusch, Ecology and Evolutionary Biology

Ian Saucó '21 (English, CLAS; Music, SFA)

Project Title: Saxophone Repertoire and Technique - An Extensive Musical Development

Faculty Mentor: Dr. Greg Case, Music

Danielle Schwartz, Dec. '20 (Ecology and Evolutionary Biology, CLAS)

Project Title: Impact of Forest Fragmentation on Bark Gleaning Bird Foraging Behavior

Faculty Mentor: Dr. Christopher Elphick, Ecology and Evolutionary Biology

Shannel Senior '22 (Molecular and Cell Biology, CLAS)

Project Title: Synthesis and Characterization of Antimicrobial Cyclic Peptides

Faculty Mentor: Dr. Alfredo Angeles-Boza, Chemistry

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Sameena Shah '21 (Molecular and Cell Biology, CLAS)

Project Title: Discriminatory Bullying of Ethnic and Immigrant Minority Youth: Does Cultural and Familial Belongingness Moderate the Relation Between Being Bullied and the Negative Psychological and Behavioral Consequences

Faculty Mentor: Dr. Alaina Brenick, Human Development and Family Sciences

Hannah Smith '21 (Molecular and Cell Biology, CLAS)

Project Title: Developing an Effective Barcoding Method for Salp Species Differentiation and Phylogenetic Resolution

Faculty Mentor: Dr. Rachel O'Neill, Molecular and Cell Biology

Kaelin Smith '21 (Sustainable Plant and Soil Systems, CAHNR)

Project Title: Evaluation of Snap Bean Cultivars Resistance Against the Mexican Bean Beetle, *Epilachna varivestis*

Faculty Mentor: Dr. Ana Legrand, Plant Science and Landscape Architecture

Sarah Tsuruo '21 (Biological Sciences, CLAS)

Project Title: Testing if a Fibrosis Immune Response Affects Sex Hormones in Stickleback Fish

Faculty Mentor: Dr. Daniel Bolnick, Ecology and Evolutionary Biology

Hanna Van Pelt '21 (Physiology and Neurobiology, CLAS)

Project Title: Efficacy and Mechanisms of Ketogenic-Like Treatment in a Drosophila Model of Parkinson's Disease

Faculty Mentor: Dr. Geoffrey Tanner, Physiology and Neurobiology

Keegan Yao '21 (Mathematics, CLAS; Computer Science, ENG)

Project Title: Phylogenetic Tree Completions with Minimal Robinson-Foulds Distance

Faculty Mentor: Dr. Mukul Bansal, Computer Science and Engineering

Harry Zehner '21 (Political Science, CLAS)

Project Title: Institutionalizing Environmentally Friendly Behavior by Designing a Proxy Carbon Price for the University of Connecticut

Faculty Mentor: Dr. Oksan Bayulgen, Political Science

Amanda Zettler '22 (Physics, CLAS)

Project Title: Low-Temperature Laser Diodes for Broad Wavelength Tuning

Faculty Mentor: Dr. Daniel McCarron, Physics