



2022 Summer Undergraduate Research Fund (SURF) Awards

Congratulations to the 39 undergraduate SURF Award recipients for Summer 2022! 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.

Jasmine Aboumahboob '23 (Individualized Major: Human Physiology and Sociomedical Sciences, CLAS)

Project Title: The Development of the Inferior Olivary Nuclei and its Connections to the Purkinje Cells of the Cerebellum

Faculty Mentor: Dr. James Li, Genetics and Genome Sciences

Moira Renee Agcaoili '24 (Physiology and Neurobiology, CLAS)

Project Title: Heart Failure: The Role of Nuclear Beta-Adrenergic Receptors in Cardiomyocyte Apoptosis

Faculty Mentor: Dr. Kimberly Dodge-Kafka, Cell Biology

Dylan Alderucci, Dec. '23 (Ecology and Evolutionary Biology, CLAS)

Project Title: Weird Wings: Exploration of Prothoracic Structures in Stephanitis

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

Katherine Bohner '23 (Molecular and Cell Biology, CLAS)

Project Title: Loading and Localization of Iodine Nanoparticles (INPs) in Advanced Patient Derived Xenograft (PDX) High-Grade Gliomas (Glioblastoma Multiforme, GBM) with Closed and Open Blood-Brain Barriers (BBB)

Faculty Mentor: Dr. Henry Smilowitz, Cell Biology

Shakthi Boobalan '23 (Physiology and Neurobiology, CLAS)

Project Title: The Role of Erythroblastic Island Macrophages in the Expansion of Megakaryocyte-Erythroid Progenitors

Faculty Mentor: Dr. Vanessa Scanlon, Center for Regenerative Medicine and Skeletal Biology

Nicole Calder '23 (Molecular and Cell Biology, CLAS)

Project Title: Effects of Overexpression of Leucine-Rich Repeat-Containing G Protein-Coupled Receptor 6 (Lgr6) on Bone Tissue in Mice

Faculty Mentor: Dr. Archana Sanjay, Orthopedic Surgery

Aidan Caron '24 (Political Science & Geographic Information Science, CLAS)

Project Title: Improving Access to Connecticut Summer Meal Programs with Geographic Information Systems

Faculty Mentor: Dr. Xiang Chen, Geography

Erik Choi '23 (Physiology and Neurobiology & Economics, CLAS)

Project Title: Understanding the Fate of Stem Cells in FOP After Knockout of the Sox9 gene

Faculty Mentor: Dr. David Goldhamer, Molecular and Cell Biology

Alex Clonan, Dec. '22 (Electrical Engineering, ENG; Molecular and Cell Biology, CLAS)

Project Title: Developing a Physiologically Inspired Model of Human Speech Recognition in Noise

Faculty Mentor: Dr. Monty Escabi, Electrical and Computer Engineering

2022 SURF Award Recipients

Elizabeth Cochrane '23 (Natural Resources, CAHNR)

Project Title: Do Invasive House Sparrows Affect Parasite Communities of Native Eastern Bluebirds?

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

Shane Connolly '23 (Biological Sciences, CLAS)

Project Title: Impact of Protist Grazing on *Medicago truncatula* Through Alteration of Bacterial Community Structure

Faculty Mentor: Dr. Daniel Gage, Molecular and Cell Biology

Taylor Domingue '23 (Molecular and Cell Biology, CLAS)

Project Title: Investigating the Biogenesis and Disassembly of F-Actin-Rich Cytoplasmic Territories During Intrinsic Apoptosis

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

Caryssa Drinkuth, Dec. '22 (Molecular and Cell Biology, CLAS)

Project Title: Epigenetic-Based Therapeutics for Opioid Use Disorder

Faculty Mentor: Dr. Gregory Sartor, Pharmaceutical Sciences

Rayna Esch '23 (Molecular and Cell Biology, CLAS)

Project Title: Role of Perimuscular Connective Tissue Injury and Repair in Fibrodysplasia Ossificans Progressiva

Faculty Mentor: Dr. David Goldhamer, Molecular and Cell Biology

Carlin Eswarakumar '23 (Ecology and Evolutionary Biology, CLAS)

Project Title: Effects of the Invasive Plant, *Phragmites australis*, on Insect Abundance of North Atlantic Tidal Marshes and its Repercussions for the Foraging of Insectivorous Saltmarsh Birds

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

Amy Flis '23 (Structural Biology and Biophysics, CLAS)

Project Title: Molecular Tension Sensors using Reversibly Photoswitchable Fluorescent Proteins (RSFPs)

Faculty Mentor: Dr. Yi Wu, Genetics and Genome Sciences

Madison Formanek '23 (Speech, Language, and Hearing Sciences, CLAS)

Project Title: Investigating Persistence Behavior in Children with Developmental Language Disorder

Faculty Mentor: Dr. Tammie Spaulding, Speech, Language, and Hearing Sciences

Nitanta Garag '23 (Biomedical Engineering, ENG)

Project Title: The Relationship of Novel Human Genes to 3D Genome Organization and Function

Faculty Mentor: Dr. Jelena Erceg, Molecular and Cell Biology

Zachary Giguere '23 (Physiology and Neurobiology, CLAS)

Project Title: Examining the Role of Pain in Neurobehavior and Neurodevelopment of Infants in the Neonatal Intensive Care Unit (NICU)

Faculty Mentor: Dr. Sharon Casavant, Nursing

Alexandra Goldhamer '23 (Molecular and Cell Biology & Human Rights, CLAS)

Project Title: Defining the Neural Circuit Responsible for Diet-Induced Obesity

Faculty Mentor: Dr. Natalie Sciolino, Physiology and Neurobiology

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Sindy Gorka '24 (Psychological Sciences, CLAS)

Project Title: The Efficacy of CDK4/6 Inhibitory Drug Therapy on Cyclin D1 Mutated Parathyroid Neoplasia

Faculty Mentor: Dr. Jessica Costa, Center for Molecular Oncology

Leah Graf '23 (Nursing, NUR)

Project Title: A Structured Life Review Intervention to Improve Life Satisfaction in Home Health Service Patients

Faculty Mentor: Dr. Juliette Shellman, Nursing

Mahit Gupta '24 (Physiology and Neurobiology, CLAS)

Project Title: Identification of Axon Growth-Inhibitory Molecules Expressed by Post-Injury Born Immature Oligodendrocytes in the Optic Nerve Injury Site

Faculty Mentor: Dr. Feliks Trakhtenberg, Neuroscience

Jude Icoy '23 (Physiology and Neurobiology, CLAS)

Project Title: Differential Gene Analysis of Gustatory Receptors in Male vs Female *Drosophila melanogaster*

Faculty Mentor: Dr. Karen Menuz, Physiology and Neurobiology

Abigail Interrante '24 (Molecular and Cell Biology, CLAS; Nutritional Sciences, CAHNR)

Project Title: Obesity-Induced Metabolic Dysfunction and Inflammation in the CETP-ApoB100 Transgenic Mouse Model

Faculty Mentor: Dr. Ji-Young Lee, Nutritional Sciences

Bethany Lafontaine '23 (Medical Laboratory Sciences, CAHNR)

Project Title: The Use of RNA Interference to Modulate Inflammatory Cytokine Expression Pertinent to Sepsis from Covid-19

Faculty Mentor: Dr. Lawrence Silbart, Allied Health Sciences

Derek Lefcort '23 (Electrical Engineering, ENG)

Project Title: Fabrication and Electrical Characterization of Multi-Contact PCM Toggle Device

Faculty Mentor: Dr. Helena Silva, Electrical and Computer Engineering

Chase Mack '23 (Environmental Sciences & Political Science, CLAS)

Project Title: How Do Sediment Additions to the Surface of Submerging Saltmarshes Alter Methane Dynamics?

Faculty Mentor: Dr. Beth Lawrence, Natural Resources and the Environment

Morgan Main '23 (Physiology and Neurobiology & Speech, Language, and Hearing Sciences, CLAS)

Project Title: Examining the Effects of Musical Training on Cochlear Health in College Students

Faculty Mentor: Dr. Erika Skoe, Speech, Language, and Hearing Sciences

Dariana Mota '23 (Physiology and Neurobiology, CLAS)

Project Title: The Effectiveness of Beta-Hydroxybutyrate Enantiomers on Post-TBI Behaviors

Faculty Mentor: Dr. Geoffrey Tanner, Physiology and Neurobiology

Milan Patel '23 (Physics, CLAS)

Project Title: Modeling Accurately Matters: Characterizing Optimal Use of NOE Restraints for MD Simulation of Small Proteins and Peptides

Faculty Mentor: Dr. Eric May, Molecular and Cell Biology

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Romir Raj '24 (Biomedical Engineering, ENG)

Project Title: The Role and Mechanism of Homologous Chromosome Pairing

Faculty Mentor: Dr. Jelena Erceg, Molecular and Cell Biology

Stephanie Schofield '23 (Molecular and Cell Biology, CLAS)

Project Title: Investigating the Role of Sigma-S Regulated Genes on Antibiotic-Induced Stress Response and Treatment Failure

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

Emily Strickland '24 (Molecular and Cell Biology, CLAS)

Project Title: Emerald Ash Borer (*Agilus planipennis*) Resistance in Pumpkin Ash (*Fraxinus profunda*)

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

Claire Sullivan '23 (Physiology and Neurobiology, CLAS)

Project Title: Role of Olfactory Receptors in Behavioral Response to Ammonia in *Drosophila melanogaster*

Faculty Mentor: Dr. Karen Menuz, Physiology and Neurobiology

Emma Triantafyllou, Dec. '22 (Pathobiology, CAHNR)

Project Title: The Evolvability of Extremophiles: Can Haloarchaea Mate in High-Stress Environments?

Faculty Mentor: Dr. Mark Urban, Ecology and Evolutionary Biology

Rebecca Tripp '23 (Physiology and Neurobiology, CLAS)

Project Title: Characterizing Neurons Containing Calcium-Binding Proteins in the Amygdala of Female and Male Rats

Faculty Mentor: Dr. Linnaea Ostroff, Physiology and Neurobiology

Nicholas Xenophontos '23 (Mathematics & Sociology, CLAS)

Project Title: Preventing Gun Violence Online: Comparing Social Media Content from the National Rifle Association and Everytown for Gun Safety

Faculty Mentor: Dr. Mary Bernstein, Sociology

Shihao Zhai '23 (Chemical Engineering, ENG)

Project Title: Designing a Portable Particulate Matter Monitor

Faculty Mentor: Dr. Kristina Wagstrom, Chemical and Biomolecular Engineering