



2023 Summer Undergraduate Research Fund (SURF) Awards

Congratulations to the 48 undergraduate SURF Award recipients for Summer 2023! 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.

Priya Aggarwal '24 (Physiology and Neurobiology & Molecular and Cell Biology, CLAS)

Project Title: Corpus Luteum Movement in *Drosophila*

Faculty Mentor: Dr. Jianjun Sun, Physiology and Neurobiology

Harshita Akella '24 (Molecular and Cell Biology, CLAS)

Project Title: The First Genome Reference for the Tropical Legume, *Inga vera*, and Comparative Analysis of Genes Involved in Nitrogen Fixation Among the Fabaceae

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

Danya Alboslani '24 (Physics, CLAS)

Project Title: Constructing 3D maps of Molecular Clouds in the Center of the Milky Way

Faculty Mentor: Dr. Cara Battersby, Physics

Anita Amiti '24 (Biological Sciences, CLAS)

Project Title: Does Lipid Consumption and a Gut Microbiota Disruption Affect Immune Gene Expression?

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

Hailey Baranowski '24 (Environmental Sciences, CAHNR; Ecology and Evolutionary Biology, CLAS)

Project Title: Efficacy of Bee Bowls in Varying Rare Habitats and Floral Densities at Mansfield Hollow Dam

Faculty Mentor: Dr. David Wagner, Ecology and Evolutionary Biology

Emma Beard '24 (Molecular and Cell Biology, CLAS)

Project Title: The Role of Histone H3 in Transposon Repression

Faculty Mentor: Dr. Mayu Inaba, Cell Biology

Anabelle Bergstrom '25 (Political Science & Philosophy, CLAS)

Project Title: Investigating the Influence of Campaign Contributions on State Supreme Court Judicial Decisions

Faculty Mentor: Dr. Virginia Hettinger, Political Science

Clark Bray '24 (Mechanical Engineering, ENG)

Project Title: Ultrafast Molecular Dynamics Using a Femtosecond Laser

Faculty Mentor: Dr. Nora Berrah, Physics

Rey Carten, Dec. '23 (Molecular and Cell Biology, CLAS)

Project Title: Molecular Simulation Investigations into Amino Acid Substitutions in the Design of Janus-Based Nanotubes

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

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Laura Centanni '25 (Animal Science, CAHNR)

Project Title: Sustained Lipopolysaccharide Challenge in Sheep

Faculty Mentor: Dr. Steven Zinn, Animal Science

Olivia Crawford '24 (Physiology and Neurobiology, CLAS)

Project Title: Identifying a Molecular Marker of Expiratory Neurons in the Lateral Parafacial Region

Faculty Mentor: Dr. Daniel Mulkey, Physiology and Neurobiology

Fariha Fardin '25 (Molecular and Cell Biology, CLAS)

Project Title: Investigating the Effect of Acvr1R206H Expression in Muscle Stem Cells on Skeletal Muscle Regeneration

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

Ryan Gado, Dec. '23 (Molecular and Cell Biology, CLAS)

Project Title: Determining How the TM3, Sb Ser Balancer Chromosome Contributes to the Meiotic Drive of the B Chromosomes in *Drosophila melanogaster*

Faculty Mentor: Dr. Stacey Hanlon, Molecular and Cell Biology

Jonathan Gallo '24 (Animal Science, CAHNR)

Project Title: Microbiome Analysis for Response to Heat Stress in Dairy Cattle

Faculty Mentor: Dr. Breno Fragomeni, Animal Science

Carla Guirguis '24 (Exercise Science, CAHNR)

Project Title: Hydration and Heat Stress Index: Enhancing the Algorithm

Faculty Mentor: Dr. Rebecca Stearns, Kinesiology

Cristopher Guzman '24 (Molecular and Cell Biology, CLAS)

Project Title: De Novo Genome Assembly, Annotation, and Comparative Genomics of *Juglans ailantifolia*

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

Mackenzie Howard '24 (Nursing, NUR)

Project Title: Exploring Intergenerational Stress: The Reciprocal Relationship between Parenting Stress, Perception of Child Behavior, and the Complex Contributing Factors

Faculty Mentor: Dr. Eileen Condon, Nursing

Sila Inanoglu '24 (Biological Sciences, CLAS)

Project Title: Effect of α -pinene on Ectoparasite Resistance in Tree Swallows

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

Jiss Joseph '24 (Physiology and Neurobiology & Psychological Sciences, CLAS)

Project Title: Linking the ASPM Phenotype to Autism Spectrum Disorder

Faculty Mentor: Dr. Holly Fitch, Psychological Sciences

Giuliana Judge '25 (Chemistry, CLAS)

Project Title: Synthesis of Novel Voltage Sensitive Dyes with Donor- π -Spacer-Acceptor Structures

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

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Aashi Kulkarni '24 (Allied Health Sciences, CAHNR)

Project Title: Behavioral and Biological Indicators of Stress and Cardiometabolic Risk in Young Female Adults

Faculty Mentor: Dr. Lauren Corso, Allied Health Sciences

Megan Lemay '24 (Chemistry, CLAS)

Project Title: Synthesis of the Siderophore Aerobactin and Fluoroform Labeled Aerobactin

Faculty Mentor: Dr. Alfredo Angeles-Boza, Chemistry

Lisa Liang '25 (Chemistry, CLAS)

Project Title: A Vehicle for Combatting Genetic Disorders: Design and Synthesis of Nucleus Targeting Nanocarriers for the Delivery of Therapeutic DNA

Faculty Mentor: Dr. Jessica Rouge, Chemistry

Neo Lin '25 (Chemistry, CLAS)

Project Title: Toward Realization of Optically Addressable Radical Pairs in Donor-Bridge-Acceptor Triad Systems

Faculty Mentor: Dr. Tomoyasu Mani, Chemistry

Fraser McGurk '25 (Molecular and Cell Biology, CLAS)

Project Title: CD13 Monoclonal Antibody Treatment Controls Macrophage Fusion

Faculty Mentor: Dr. Mallika Ghosh, Cell Biology

Taylor Orban '24 (Molecular and Cell Biology, CLAS)

Project Title: The Relationship Between Homolog Pairing and Gene Expression during *Drosophila* Development

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

Joanie Papillon '24 (Puppetry, SFA)

Project Title: Harry the Giant - From Taurus

Faculty Mentor: Dr. Matthew Cohen, Dramatic Arts

Mirsha Pierre, Dec. '24 (Physiology and Neurobiology & Spanish, CLAS)

Project Title: Molecular and Metabolic Mechanisms of Ketone Body Effects on Fat Body Remodeling and Larval Development in *Drosophila*

Faculty Mentor: Dr. Geoffrey Tanner, Physiology and Neurobiology

Victoria Marina Pigoretti '24 (Allied Health Sciences, CAHNR)

Project Title: Barriers to Healthcare that Foreign-Born, Brazilian Women Experience in Bridgeport, Connecticut

Faculty Mentor: Dr. Fumilayo Showers, Sociology

Colin Piteo '24 (History & Political Science, CLAS)

Project Title: Can a Law Really Protect Glaciers? Examining a Visionary Law in Argentina

Faculty Mentor: Dr. Mark Healey, History

Juliette Ranelli '24 (Speech, Language, and Hearing Sciences, CLAS)

Project Title: Evolving Cochlear Implant-Specific Therapy: Expanding Vocabulary through Parent-Child Interactions

Faculty Mentor: Dr. Derek Houston, Speech, Language, and Hearing Sciences

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Pranavi Rebala '25 (Economics, CLAS)

Project Title: Examining The City of Hartford's Conformity to the Growth Machine Model

Faculty Mentor: Dr. Phil Birge-Liberman, Urban and Community Studies

Aiden Reilly '24 (Biomedical Engineering, ENG)

Project Title: Utilizing HaloTag for the Development of a Novel Tension Sensor

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

Trevor Religa '25 (Molecular and Cell Biology, CLAS)

Project Title: The Synaptic Adhesion Protein C1QL3 in the Prefrontal Cortex is Required for Learning Cognitively Challenging Tasks

Faculty Mentor: Dr. David Martinelli, Neuroscience

Krithika Santhanam '25 (Individualized: Health Policy and Racial Disparities & Molecular and Cell Biology, CLAS)

Project Title: BMP Signals Regulate Chondrocyte Maturation During Endochondral Ossification in the Postnatal Growth Plate

Faculty Mentor: Dr. Caroline Dealy, Reconstructive Sciences, Orthopedic Surgery & Cell Biology

Katrina Schneider '24 (Biological Sciences, CLAS)

Project Title: Standardizing Visualization and Quantification of Mammalian Neuronal Synapses by Employing Ultrathin Imaging and Fluorescent Immunohistochemistry

Faculty Mentor: Dr. Linnaea Ostroff, Physiology and Neurobiology

Meg Shah '24 (Marine Sciences, CLAS)

Project Title: Saving the Sound with History – Mapping Past Eelgrass Extent in Long Island Sound to Improve Restoration Efforts

Faculty Mentor: Dr. Jamie Vaudrey, Marine Sciences

Allison Shane '24 (Speech, Language, and Hearing Sciences, CLAS)

Project Title: Analyzing the Home Environments of People with Aphasia: Does Treatment Carryover Into Life at Home?

Faculty Mentor: Dr. Jennifer Mozeiko, Speech, Language, and Hearing Sciences

Reilly Stiefel, Dec. '23 (Ecology and Evolutionary Biology, CLAS; Sustainable Plant and Soil Systems, CAHNR)

Project Title: Uncovering Algal Biogeography and Diversity Through Lichen of West Coast Fog Deserts

Faculty Mentor: Dr. Louise Lewis, Ecology and Evolutionary Biology

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

Project Title: Automation of De Novo Genome Assembly and Comparative Genomics Using Bioinformatic Workflows

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

Shreyesh Vachhani '24 (Physiology and Neurobiology, CLAS)

Project Title: Effect of Cold Stress on Minor Spliceosome Activity in Nile Tilapia

Faculty Mentor: Dr. Rahul Kanadia, Physiology and Neurobiology

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Lyla White '24 (Pharmacy Studies, PHARM)

Project Title: Effect of Freezing and Thawing and Freezing and Heating on Aspirin Tablet Stability

Faculty Mentor: Dr. Bodhi Chaudhuri, Pharmaceutical Sciences

Ethan Wicko '24 (Mechanical Engineering, ENG)

Project Title: V-belt Optimization for Bicycle Continuously Variable Transmission

Faculty Mentor: Dr. Horea Ilies, Mechanical Engineering

Devenny Widmer '24 (Natural Resources, CAHNR)

Project Title: The Effect of Black-Backed Jackal Social Structure on Their Diet

Faculty Mentor: Dr. Morty Ortega, Natural Resources and the Environment

Grace Xiong '25 (Molecular and Cell Biology, CLAS)

Project Title: Using the ADAPT-ITT Model to Adapt a Tailored Oral Health and Nutrition Educational Messaging and Game Intervention for Children and Adolescents in a Pediatric Dental Office Setting

Faculty Mentor: Dr. Valerie Duffy, Allied Health Sciences

Vicki You '24 (Marine Sciences & Ecology and Evolutionary Biology, CLAS)

Project Title: Patterns of Diversity in Zooplankton Samples Collected During a Long-Term Series of Ecomonitoring

Faculty Mentor: Dr. Paola Batta Lona, Marine Sciences

Hayden Yuan '24 (Molecular and Cell Biology, CLAS)

Project Title: Identifying Key Evolving Residues That Drive CID/CAL1 Incompatibility in *Drosophila* Species

Faculty Mentor: Dr. Barbara Mellone, Molecular and Cell Biology