



## 2025 Summer Undergraduate Research Fund (SURF) Awards

Congratulations to the 46 undergraduate SURF Award recipients for Summer 2025! These UConn students were selected from a 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.

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### **Divine Adekoya '28 (Chemical Engineering, ENG)**

Project Title: *Synergistic Enhancement of Enzyme Stability Using Crowding Molecules in Nanobioreactors*

Faculty Mentor: Dr. Eugene Pinkhassik, Chemistry

### **Jenny Alaska '27 (Biomedical Engineering, ENG)**

Project Title: *Periosteal Hox Gene Expression and Function in Mechanical Loading Model*

Faculty Mentor: Dr. Benjamin Sinder, Orthopedic Surgery

### **Ava Anderson '26 (Mathematics-Statistics & Molecular and Cell Biology, CLAS)**

Project Title: *Expanding Intron Classification: Insights into Splice Variation and Evolution*

Faculty Mentor: Dr. Rahul Kanadia, Physiology and Neurobiology

### **Nick Bailey '26 (Management and Engineering for Manufacturing, ENG/BUS & Applied Mathematical Sciences, CLAS)**

Project Title: *Machine Learning-based Photovoltaic Panel Defect Detection*

Faculty Mentor: Dr. Farhad Imani, Mechanical, Aerospace and Manufacturing Engineering

### **Isabela Bedoya '27 (Nursing, NUR)**

Project Title: *Overlooked and Underserved: UConn Students from Marginalized Communities Experiences*

Faculty Mentor: Dr. Sharon Casavant, Nursing

### **Arohi Bhowmik, Dec. '25 (Physiology and Neurobiology, CLAS)**

Project Title: *Insights Into Early Childhood Immune Response: Decoding the Link Between Sleep Duration and Cytokine Activity*

Faculty Mentor: Dr. Eileen Condon, Nursing

### **Klaudia Bielski '27 (Pathobiology, CAHNR)**

Project Title: *Poidy Correction in Preimplantation Mouse Tetraploid Embryos*

Faculty Mentor: Dr. Xiuchun Tian, Animal Science

### **Krysteen Burke '27 (Nursing, NUR)**

Project Title: *Which is a Better Predictor of Premature Infant Neurodevelopment: Secondary Analysis of SNAPPE II and NISS Scores on Bailey Scale Neurodevelopment Data*

Faculty Mentor: Dr. Sharon Casavant, Nursing

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**Sarah Cole '27 (Physiology and Neurobiology & Psychological Sciences, CLAS)**

Project Title: *Source Localization of Maximal Alpha Oscillation Magnitude when Ignored Background Sounds are Spatially Shifted to the Left versus Right Side of the Head*

Faculty Mentor: Dr. Heather Read, Psychological Sciences & Biomedical Engineering

**Annalise Cormier, Dec. '25 (Natural Resources, CAHNR)**

Project Title: *Assessing Bat Maternity Colony Roost Sites Using Thermal Imagery and Acoustic Monitoring Techniques*

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

**Andrew Deierlein '26 (Molecular and Cell Biology, CLAS & Pathobiology, CAHNR)**

Project Title: *Let's Move In! - Gene Families and the Transition to Endosymbiosis*

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

**Arsen Dmytryshyn '26 (Biological Sciences, CLAS)**

Project Title: *Acidity Mediated Catch and Release of Nucleotides with Stimuli-responsive Nanocapsules*

Faculty Mentor: Dr. Eugene Pinkhassik, Chemistry

**Muhammad Faisal '26 (Molecular and Cell Biology, CLAS)**

Project Title: *Effect of Membrane Composition on the Binding of Certain Ligands to the 5-HT<sub>2A</sub> Receptor*

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

**Matthew Francoeur '27 (Materials Science and Engineering, ENG)**

Project Title: *Fugitive Surfactants for Improved Stretchable Electrode Conductivity*

Faculty Mentor: Dr. Mihai Duduta, Mechanical, Aerospace and Manufacturing Engineering

**Stephanie Gilroy '26 (Animal Science, CAHNR)**

Project Title: *Role of Porcine Oviductal Extracellular Vesicles on Sperm Function and Early Embryo Development*

Faculty Mentor: Dr. Maria Gracia Gervasi, Animal Science

**Abigail Goldhamer '27 (Molecular and Cell Biology, CLAS)**

Project Title: *Investigating the Effects of Matrimony and Polo Kinase Localization on B Chromosome Transmission*

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

**Charli Hughes '27 (Computer Science, ENG)**

Project Title: *Computational Modeling of DNA Damage Response Networks in High-Grade Serous Ovarian Cancer Risk: A Focus on Classic PCOS (Phenotype A) and Androgen Signaling*

Faculty Mentor: Dr. Jennifer Jorgensen, Obstetrics and Gynecology

**Noen Jian '26 (Molecular and Cell Biology & Chemistry, CLAS)**

Project Title: *Synthetic Tuning to Achieve Air-Stable Molecular Qubits*

Faculty Mentor: Dr. Tomoyasu Mani, Chemistry

**Julia Johnson '27 (Ecology and Evolutionary Biology, CLAS)**

Project Title: *The Genetic Bases and Ecological Consequences of Floral Trait Variation in Mimulus*

Faculty Mentor: Dr. Yaowu Yuan, Ecology and Evolutionary Biology

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**Ruupala Kalaiarasu '27 (Molecular and Cell Biology, CLAS)**

Project Title: *The Role(s) for Hox11 Genes in Expression of Prg4/lubricin by Articular Cartilage Progenitors*  
Faculty Mentor: Dr. Danielle Rux, Orthopedic Surgery

**Katarina Kalajzic '26 (Psychological Sciences, CLAS)**

Project Title: *The Role of the Prefrontal Cortex in a Probabilistic 2-Armed Bandit Task*  
Faculty Mentor: Dr. Timothy Spellman, Neuroscience

**Roma Kale '27 (Physiology and Neurobiology, CLAS)**

Project Title: *MMP2 Regulation of Border Cell Migration*  
Faculty Mentor: Dr. Jianjun Sun, Physiology and Neurobiology

**Rafe Kimball, Dec. '25 (Sociology, CLAS)**

Project Title: *Examining The Perceived Nutritional Environment of the North End of Hartford*  
Faculty Mentor: Dr. Phil Birge-Liberman, Urban and Community Studies

**Irena Komninakas '26 (Molecular and Cell Biology & Spanish, CLAS)**

Project Title: *Information Seeking Behavior of Pediatric Patients in the CT Children's Emergency Department*  
Faculty Mentor: Dr. Sharon Smith, Pediatrics, School of Medicine

**Lilla Korniss '27 (Economics & Mathematics, CLAS)**

Project Title: *Analyzing the Impact of the Great Recession and COVID-19 on UConn's Budgetary Planning*  
Faculty Mentor: Dr. Oskar Harmon, Economics

**Kaitlyn LaRose '26 (History/Social Studies Education, ED & History, CLAS)**

Project Title: *A Sociohistorical Look at Connecticut Marine Debris*  
Faculty Mentor: Dr. Mars Plater, History

**Aditi Malpure '27 (Molecular and Cell Biology, CLAS)**

Project Title: *Contribution of Adult Hippocampal Neurogenesis to Fear Generalization and Discrimination*  
Faculty Mentor: Dr. Sebnem Nur Tunçdemir, Neuroscience

**Rahul Manna, Dec. '26 (Mechanical Engineering, ENG & Statistical Data Science, CLAS)**

Project Title: *Electromechanical Test Development for Implantable Soft Neural Interface Encapsulation*  
Faculty Mentor: Dr. Kyungjin Kim, Mechanical, Aerospace and Manufacturing Engineering

**Isabela Mejias '26 (Nursing, NUR)**

Project Title: *Exploring the Impact of Sleep Onset, Duration, and Frequency on Externalizing Behaviors in Preschool-Aged Children*  
Faculty Mentor: Dr. Eileen Condon, Nursing

**Abigail Messina '26 (Molecular and Cell Biology, CLAS)**

Project Title: *Cartilage Regenerative Approach for TMJ-Osteoarthritis in an In Vitro Model*  
Faculty Mentor: Dr. Caroline Dealy, Orthodontics, Orthopedic Surgery & Cell Biology

**Malak Nechnach '26 (Physiology and Neurobiology, CLAS)**

Project Title: *Norepinephrine Circuits Underlying Obesity-induced Stress Sensitivity*  
Faculty Mentor: Dr. Natale Sciolino, Physiology and Neurobiology

## 2025 SURF Award Recipients

### **Liv Nevo '26 (Molecular and Cell Biology, CLAS)**

Project Title: *Investing the Role of Activin A in Muscle Degeneration Caused in Fibrodysplasia Ossificans Progressiva*

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

### **Caitlin Noonan '26 (Chemical Engineering, ENG)**

Project Title: *Trash Into Treasure: Converting the University of Connecticut's Food Waste into Activated Carbons for Carbon Capture, Sequestration, and Usage*

Faculty Mentor: Dr. Ioulia Valla, Chemical and Biomolecular Engineering

### **Vedansh Patel, Dec. '25 (Molecular and Cell Biology, CLAS)**

Project Title: *Investigating the Roles of Histone Modifications in Stem Cell Differentiation*

Faculty Mentor: Dr. Mayu Inaba-Oguro, Cell Biology

### **Katherine Patrick, Dec. '26 (Geographic Information Science, CLAS)**

Project Title: *Proposing Spatially Explicit Land Suitability Models for Orphan Crops to Support Food Security Initiatives in East Africa*

Faculty Mentor: Dr. Dan Wanyama, Geography

### **Luke Pratley '26 (Molecular and Cell Biology, CLAS)**

Project Title: *Sustained Release of Azobenzene Derivatives from Selectively Permeable Nanocapsules*

Faculty Mentor: Dr. Eugene Pinkhassik, Chemistry

### **Mackenzie Robillard '27 (Molecular and Cell Biology, CLAS)**

Project Title: *Investigating the Connection Between LINE1 Transposable Elements and Neocentromere Formation and Stability*

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

### **Alan Rodger '26 (Ecology and Evolutionary Biology & Anthropology, CLAS)**

Project Title: *Investigating the Genetic Basis for Traits Associated with Hybridization and Geographic Expansion in *Canis latrans**

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

### **Melissa Sabatella '26 (Physiology and Neurobiology & Molecular and Cell Biology, CLAS)**

Project Title: *Impact of Polymer Source Variation on the Properties and Performance of Long-Acting Injectable Suspensions*

Faculty Mentor: Dr. Diane Burgess, Pharmaceutical Sciences

### **Alexandra Salem '26 (Structural Biology/Biophysics, CLAS)**

Project Title: *Characterize Anesthetic Sensitivity of a Mouse Model of Rett Syndrome*

Faculty Mentor: Dr. Daniel Mulkey, Physiology and Neurobiology

### **Rowan Solomon, Dec. '25 (Chemistry, CLAS)**

Project Title: *Pulvinic Acids: Fungal Pigments for the Development of Semisynthetic Dyes*

Faculty Mentor: Dr. Michael Kienzler, Chemistry

### **Theodhora Sumbulla '26 (Biological Sciences, CLAS)**

Project Title: *Sex-Based Differences in Mutant Blood Stem Cell Expansion*

Faculty Mentor: Dr. Hideyuki Oguro, Cell Biology

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**Zhengyang Wei '26 (Mechanical Engineering, ENG)**

Project Title: *Nonlinear Input-output Analysis of Shear Flows using Small-signal Finite-gain  $L_p$  Stability*

Faculty Mentor: Dr. Chang Liu, Mechanical, Aerospace and Manufacturing Engineering

**Emily Winslow, Dec. '25 (Ecology and Evolutionary Biology, CLAS)**

Project Title: *Effects of Management Fences on Common Tern (*Sterna hirundo*) Egg Loss Rates*

Faculty Mentor: Dr. Margaret Rubega, Ecology and Evolutionary Biology

**Zihan Yu '27 (Mathematics-Physics, CLAS)**

Project Title: *Development of Specialized Density Functionals for Accurate Modeling of Spin-Correlated Radical Pairs in BODIPY-Derived Systems*

Faculty Mentor: Dr. Tomoyasu Mani, Chemistry

**Claire Zess '27 (Animal Science, CAHNR)**

Project Title: *Breed-Specific Susceptibility to Ringworm in Dairy Cattle: A Comparative Study of Holstein and Jersey Heifers*

Faculty Mentor: Dr. Breno Fragomeni, Animal Science