



## 2024 Summer Undergraduate Research Fund (SURF) Awards

Congratulations to the 50 undergraduate SURF Award recipients for Summer 2024! 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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**Arjun Ahuja '26** (Psychological Sciences & Chemistry, CLAS)

Project Title: *The Production of Photoswitchable 5-amino-tryptamine*

Faculty Mentor: Dr. Michael Kienzler, Chemistry

**Cassie Aimetti '25** (Geoscience & Anthropology, CLAS)

Project Title: *Investigating Sea-Level Rise and 6000 Years of Human Occupation at the Grannis Island Archaeological Site, New Haven, CT*

Faculty Mentor: Dr. William Ouimet, Geography

**Akram Alhadainy '26** (Biomedical Engineering, ENG & German, CLAS)

Project Title: *Viscoelastic Ionic BioGels from Interlocked Cellulose Nanocrystals and Proteins*

Faculty Mentor: Dr. Rajeswari Kasi, Chemistry

**Kenda Alkadry '25** (Chemistry, CLAS)

Project Title: *Developing a pH-mediated Catch and Release Mechanism for Negatively Charged Cargo Molecules*

Faculty Mentor: Dr. Evgueni Pinkhassik, Chemistry

**Erin Appelson '26** (English & Human Rights, CLAS)

Project Title: *The Chill Effect: How Do Secure Communities Shape Noncitizen Women's Health Care Uptake?*

Faculty Mentor: Dr. Delia Furtado, Economics

**Alexis Bates, Dec. '24** (Pathobiology, CAHNR)

Project Title: *Senescence Induced Changes in Aging Muscle Calcium Homeostasis and Possible Therapeutic*

Faculty Mentor: Dr. Sangyong Choi, Nutritional Sciences

**Jack Bienvenue '25** (Statistics, CLAS)

Project Title: *Geospatial Approaches for Understanding the Efficacy and Equity of Connecticut's Clean Energy Transition*

Faculty Mentor: Dr. Dan Wanyama, Geography

**Abigail Boria '25** (Physiology and Neurobiology, CLAS)

Project Title: *Understanding the Impact of Minor Spliceosome Inhibition on Growth Plate Formation through Chondrocyte Morphology and Marker Gene Expression*

Faculty Mentor: Dr. Rahul Kanadia, Physiology and Neurobiology

2024 SURF Award Recipients

**Keertana Chagari '25** (Molecular and Cell Biology, CLAS)

Project Title: *Reproducible Bioinformatic Workflows to Produce Diploid Phased Eukaryotic Genome Assemblies*

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

**Varun Chamarty '26** (Biomedical Engineering, ENG)

Project Title: *Decoding Sensory Attention from Mouse Facial Gestures Using Machine Learning*

Faculty Mentor: Dr. Timothy Spellman, Neuroscience

**Qianyu Chen '26** (Biomedical Engineering, ENG)

Project Title: *Investigating the Impact of Microgravity on the Janus Base Nanoparticles' Assembly for Improved RNA Delivery*

Faculty Mentor: Dr. Yupeng Chen, Biomedical Engineering

**Maria Cruceta Ramirez '25** (Pharmacy Studies, PHARM)

Project Title: *(2R,6R)-Hydroxynorketamine as a New Treatment for Opioid Use Disorder*

Faculty Mentor: Dr. Gregory Sartor, Pharmaceutical Sciences

**Natalia Del Toro '25** (Biological Sciences, CLAS)

Project Title: *Selective C-H bond Activation Through Restricted Access of Substrates to Catalysts*

Faculty Mentor: Dr. Evgueni Pinkhassik, Chemistry

**Andy Dong '26** (Biological Sciences, CLAS)

Project Title: *Alleviating the Foreign Body Response to Medical Implants in a CD13 Mouse Model*

Faculty Mentor: Dr. Mallika Ghosh, Cell Biology

**Peter Fatzinger '26** (Molecular and Cell Biology, CLAS)

Project Title: *Dynamic Changes in Chromosome Territories During Early Drosophila Embryogenesis*

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

**Emily Flynn '25** (Physiology and Neurobiology, CLAS)

Project Title: *Determining the Necessity of RGS12 in the Expression of Pruritus*

Faculty Mentor: Dr. Steve Kinsey, Nursing

**Ryan Frier '25** (Molecular and Cell Biology & Statistics, CLAS)

Project Title: *Investigating the Role of Actin Nucleation Factors in Mitosis*

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

**Alison Godfrey '25** (Allied Health Sciences, CAHNR)

Project Title: *Uric Acid as a Predictor of Hypertension*

Faculty Mentor: Dr. Bruce Blanchard, Allied Health Sciences

**Suheera Haq '26** (Molecular and Cell Biology & Individualized Major, CLAS)

Project Title: *Assessing the Role of BRD4 in Chlorine-Induced Lung Injury and Inflammation*

Faculty Mentor: Dr. Ley Smith, Pharmaceutical Sciences

**Anthony He '26** (Molecular and Cell Biology, CLAS)

Project Title: *Assembly and Annotation of a Chromosome-Scale Reference Genome for the Golden Conure (*Guaruba guarouba*)*

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

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**Emmanuel Hernandez '25** (Molecular and Cell Biology & Physiology and Neurobiology, CLAS)

Project Title: *How The Effects of a Forest Fire Change Ant and Fungus Microbiomes*

Faculty Mentor: Dr. Jonathan Klassen, Molecular and Cell Biology

**Meijin Hsiao '26** (Nursing, NUR)

Project Title: *Neonatal Resuscitation Standardization*

Faculty Mentor: Dr. Carrie Eaton, Nursing

**Shez Jakhro '26** (Physiology and Neurobiology, CLAS)

Project Title: *Investigating Microglia-OPC Interactions in Shiverer Mice: A Morphological Perspective*

Faculty Mentor: Dr. Akiko Nishiyama, Physiology and Neurobiology

**Anja Kearney '26** (Physiology and Neurobiology, CLAS)

Project Title: *Impact of Depletion of Mature and Immature Oligodendrocytes on Axon Regeneration in the Optic Nerve Injury Site*

Faculty Mentor: Dr. Feliks Trakhtenberg, Neuroscience

**Kalin Kochnev, Dec. '25** (Robotics Engineering, ENG)

Project Title: *Stability Analysis of Time-Dependent Ocean Shear Flows Using Convex Optimization*

Faculty Mentor: Dr. Chang Liu, Mechanical Engineering

**Celia Labbate, Dec. '24** (Psychological Sciences, CLAS)

Project Title: *Defining Relationships Between Alpha Oscillations and Speech-In-Noise Task Performance Utilizing Unbiased and Data-Driven EEG Data Analytic Methods*

Faculty Mentor: Dr. Heather Read, Psychological Sciences

**Joshua Lee '25** (Statistical Data Science, CLAS)

Project Title: *Development of Privacy Preserving AI for Traffic Flow Forecasting*

Faculty Mentor: Dr. Yuan Hong, School of Computing

**Carissa Leung '25** (Ecology and Evolutionary Biology, CLAS & Animal Science, CAHNR)

Project Title: *Effects of Egg Incubation Temperature on Nestling Skin Morphology and Nest Parasite Abundance in Eastern Bluebirds (*Sialia sialis*)*

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

**Jackson Lin '25** (Pharmacy Studies, PHARM)

Project Title: *Study on the Relationship between SHMT Isozymes and Drug-Resistant Cancers*

Faculty Mentor: Dr. Hunmin Jung, Pharmaceutical Sciences

**Ruiwen Lin '25** (Molecular and Cell Biology & Ecology and Evolutionary Biology, CLAS)

Project Title: *Exploring Hybridization in Lungless Salamanders*

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

**Nora Lippai '26** (Molecular and Cell Biology, CLAS)

Project Title: *Viral-Induced Readthrough Transcription: Characterizing Viral Tactics to Impede Transcription Termination*

Faculty Mentor: Dr. Leighton Core, Molecular and Cell Biology

## 2024 SURF Award Recipients

**Rafiel Luna '25** (Biological Sciences, CLAS)

Project Title: *Nanoreactors Containing Encapsulated Cofactor-Coupled Enzymatic Cascades*

Faculty Mentor: Dr. Evgueni Pinkhassik, Chemistry

**Alexandra Marinescu '25** (Physiology and Neurobiology, CLAS)

Project Title: *Osteoarthritis Induction and the Effects of Mechanical Loading on Mice*

Faculty Mentor: Dr. Sanja Novak, Regenerative Medicine and Skeletal Development

**Madison Nitz '27** (Environmental Sciences, CAHNR)

Project Title: *Remote Sensing of Invasive Plants at Honeyguide Ranger Camp, Limpopo Province, South Africa*

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

**Kira O'Brien, Dec. '24** (Molecular and Cell Biology, CLAS)

Project Title: *Investigating Bacterial Glycan Utilization in the Reproductive Organ of *Euprymna scolopes* Using Metagenomic and Cell Culture Approaches*

Faculty Mentor: Dr. Spencer Nyholm, Molecular and Cell Biology

**Bianca Planeta '25** (Molecular and Cell Biology, CLAS)

Project Title: *Investigating the Role of ORF1 in the Transposition of the Centromere-Enriched Retroelement G2/Jockey-3*

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

**Manaswini Pujar '25** (Physiology and Neurobiology, CLAS)

Project Title: *Characterization of Cannabinoid Receptor 1 in the Locus Coeruleus Following Acute Stress*

Faculty Mentor: Dr. Natale Sciolino, Physiology and Neurobiology

**Lesley Rendon Hernandez '25** (Ecology and Evolutionary Biology, CLAS)

Project Title: *Is Climate Change Affecting Salamanders?*

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

**Arianna Roach '25** (Molecular and Cell Biology, CLAS)

Project Title: *Exploring Transgenerational Epigenetic Inheritance: Examining Loss of Imprint in F1 Hybrid Female Mice Due to X Chromosome Epimutation*

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

**Theodore Smith '26** (Physics, CLAS)

Project Title: *Mapping the Coronal Line Region of Active Galactic Nuclei*

Faculty Mentor: Dr. Jonathan Trump, Physics

**Gianna Socci, Dec. '24** (Political Science & English, CLAS)

Project Title: *Monstrosity on Trial: The Case for Legal Personhood for Frankenstein's Monster*

Faculty Mentor: Dr. Dwight Codr, English

**Annette St. Jacques '26** (Molecular and Cell Biology, CLAS)

Project Title: *The Effect of Maternal Age on B Chromosome Transmission in *Drosophila melanogaster**

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

## 2024 SURF Award Recipients

**Rylie Starer '25** (Physiology and Neurobiology, CLAS)

Project Title: *Understanding the Production of Ecdysone in Follicle Cells and its Role in Ovation of Drosophila*

Faculty Mentor: Dr. Jianjun Sun, Physiology and Neurobiology

**Aidan Stimac, Dec. '25** (Chemistry, CLAS & Marketing, BUS)

Project Title: *Enhancement of Functional Performance of Nanobioreactors by Controlling the Microenvironment Inside Nanocapsules*

Faculty Mentor: Dr. Evgueni Pinkhassik, Chemistry

**Jefferson Tang '26** (Physics, CLAS)

Project Title: *Dynamics of Twisted D-Wave Superconductors Near Time-Reversal Breaking Transition*

Faculty Mentor: Dr. Pavel Volkov, Physics

**Thomas Tarutin '25** (Physics & Mathematics/Statistics, CLAS)

Project Title: *The Elementary Structure of Matter: The Study of the Pion in Parton Models*

Faculty Mentor: Dr. Asli Tandogan Kunkel, Physics

**Laxmi Chinmaya Vobbineni '26** (Biomedical Engineering, ENG)

Project Title: *The Synergic Role of Sodium Channel Blocker, Carbamazepine, and Electrical Stimulation for Wound Healing Applications*

Faculty Mentor: Dr. Sangamesh Kumbar, Orthopedic Surgery

**Heqi Wu '25** (Physics, CLAS)

Project Title: *Exploring the Influence of Compression Speed on KFe<sub>2</sub>As<sub>2</sub>*

Faculty Mentor: Dr. Barrett Wells, Physics

**Victoria Yi '25** (Molecular and Cell Biology, CLAS)

Project Title: *The Basic Structure of Myosin F Needed for Intracellular Survival of Toxoplasma Gondii*

Faculty Mentor: Dr. Aoife Heaslip, Molecular and Cell Biology

**Crystal Zhu '25** (Biological Sciences, CLAS)

Project Title: *More Than Meets the Eye: Unveiling the Diversity of Lichen-Forming Fungal Species in Chile Using DNA Barcoding*

Faculty Mentor: Dr. Bernard Goffinet, Ecology and Evolutionary Biology