



ENRICHMENT PROGRAMS
OFFICE OF
UNDERGRADUATE RESEARCH

2018 Summer Undergraduate Research Fund (SURF) Awards

Congratulations to the fifty-nine undergraduate SURF Award recipients for Summer 2018! 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.

- 1. Marlene Abouaassi, Molecular and Cell Biology & Sociology (2020)**
Project Title: *Synonymous Polymorphism to Predict Population Size and dN/dS to Indicate the Type of Selection Pressures*
Faculty Mentor: Dr. Johann Peter Gogarten, Department of Molecular and Cell Biology
- 2. Brian Aguilera, Molecular and Cell Biology (2019)**
Project Title: *Role of CD13 in the Formation and Function of Tunneling Nanotubes?*
Faculty Mentor: Dr. Mallika Ghosh, Center for Vascular Biology, UConn Health
- 3. Lauren Albert, Ecology and Evolutionary Biology (2019)**
Project Title: *Effect of Temperature on the Avian Immune Response to Parasitic Nest Flies*
Faculty Mentor: Dr. Sarah Knutie, Department of Ecology and Evolutionary Biology
- 4. Cassidy Atkinson, Materials Science and Engineering (2020)**
Project Title: *Chemical Trends in Al-Cu and Al-Ag Interfaces from First-principles Theory*
Faculty Mentor: Dr. Pamir Alpay, Department of Materials Science and Engineering
- 5. Anna Baxter, Nursing (2019)**
Project Title: *Caring for the Family of the Neonate: A Descriptive Analysis of Nurse Beliefs*
Faculty Mentors: Dr. Jacqueline McGrath, School of Nursing & Dr. Dorothy Vittner, School of Nursing
- 6. Katherine Bell, Environmental Sciences (2019)**
Project Title: *Indirect Effects of Road Salt Pollution on Forested Wetland Soil Chemistry*
Faculty Mentor: Dr. Ashley Helton, Department of Natural Resources and the Environment
- 7. Alaina Bisson, Environmental Sciences (2019)**
Project Title: *How Do Decomposition Rates Differ among Vegetation Zones in Connecticut Coastal Wetlands?*
Faculty Mentor: Dr. Beth Lawrence, Department of Natural Resources and the Environment
- 8. Suleyman Bozal, Structural Biology and Biophysics (2019)**
Project Title: *A Robust Delivery System for siRNA Therapeutics and the CRISPR/Cas9 System in Gene Regulation and Editing*
Faculty Mentor: Dr. Diane Burgess, Department of Pharmaceutical Sciences
- 9. Celina Caetano, Molecular and Cell Biology (2019)**
Project Title: *Determination of Prostaglandin Signaling in Follicle Rupture and Ovulation of *Drosophila melanogaster**
Faculty Mentor: Dr. Jianjun Sun, Department of Physiology and Neurobiology

10. James Costanzo, Physiology and Neurobiology (2019)

Project Title: *Neuroanatomical Analysis of Lateral Hypothalamic Neurotensin Neurons and their Projection Targets in the Mouse Brain*

Faculty Mentor: Dr. Alexander Jackson, Department of Physiology and Neurobiology

11. Mason DiCicco, Computer Science (2020)

Project Title: *Mathematical Analysis of a Model for the Evolution of a Quasi-Species*

Faculty Mentor: Dr. Iddo Ben-Ari, Department of Mathematics

12. Hope Dieffenbach, Biological Sciences (2019)

Project Title: *Antifouling Effects Provided by Bacterial Symbionts in the Hawaiian Bobtail Squid Egg*

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

13. Madeline Eldredge, Psychological Sciences & Speech, Language, and Hearing Sciences (2019)

Project Title: *Finding the Self Through the Stories We Tell*

Faculty Mentor: Dr. Letitia Naigles, Department of Psychological Sciences

14. Alessandro Fisher, Mechanical Engineering & Molecular and Cell Biology (2020)

Project Title: *Computational Analysis of Non-Spherical CPLS Nanoparticles*

Faculty Mentor: Dr. Ying Li, Department of Mechanical Engineering

15. Ariane Garrett, Biomedical Engineering & Spanish (2020)

Project Title: *Testing a Novel Cerebral Spinal Fluid Shunt*

Faculty Mentor: Dr. Kazunori Hoshino, Department of Biomedical Engineering

16. Ian George, Medical Laboratory Sciences (2020)

Project Title: *Graphene Based Conductivity Ink Project*

Faculty Mentor: Dr. Douglas Adamson, Department of Chemistry

17. Mitchell Godin, Molecular and Cell Biology (Dec. 2018)

Project Title: *Defining the Structural Features of VAI RNA Required for PKR Inhibition*

Faculty Mentor: Dr. James Cole, Department of Molecular and Cell Biology

18. Melinda Gosselin, Natural Resources (2019)

Project Title: *Macro- and Microevolution of Salinity-Specific Ionocyte Morphologies in Euryhaline Fishes*

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

19. Kayleigh Granville, Environmental Sciences (2019)

Project Title: *Temporal Patterns in Denitrification Rates and N₂O Emissions from Different Vegetation Zones in Coastal Salt Marshes*

Faculty Mentor: Dr. Ashley Helton, Department of Natural Resources and the Environment

20. Kara Heilemann, Pathobiology (2020)

Project Title: *Synthesis and Characterization of Metal Binding, α Helical, Antimicrobial Peptoids*

Faculty Mentor: Dr. Alfredo Angeles-Boza, Department of Chemistry

21. Liam Iorio, Structural Biology and Biophysics (2019)

Project Title: *Study of Putative Aronia Transcription Factors Involved in Anthocyanin and Proanthocyanidin Biosynthesis*

Faculty Mentor: Dr. Huanzhong Wang, Department of Plant Science and Landscape Architecture

22. Sarah Jacobson, Natural Resources (2019)

Project Title: *How Do Road Salts and Amphibians Influence Mosquito Production in Temporary Wetlands?*

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

23. Laura Jones, Individualized Major: Biodiversity & Visual Media (2019)

Project Title: *Impact of Climate Change on Mutualistic Soil Fungi and Their Interactions with Native Maple and Oak Seedlings*

Faculty Mentor: Dr. Robert Bagchi, Department of Ecology and Evolutionary Biology

24. Sree Kolli, Biomedical Engineering (2020)

Project Title: *Identification of Enterohemorrhagic Escherichia coli-Encoded Noncanonical Inflammasome Inhibitors*

Faculty Mentor: Dr. Sivapriya Kailasan Vanaja, Department of Immunology, UConn Health

25. Saurabh Kumar, Physiology & Neurobiology (2020)

Project Title: *Alterations to the Subventricular Zone Stem Cell Niche in Fetal-Onset Hydrocephalus*

Faculty Mentor: Dr. Joanne Conover, Department of Physiology and Neurobiology

26. Jeffrey Lockwood, Chemistry (2020)

Project Title: *The Effect of Structural Defects on Dielectric Properties*

Faculty Mentor: Dr. Gregory Sotzing, Department of Chemistry

27. Ryan Mayer, Ecology and Evolutionary Biology (2019)

Project Title: *Effects of Soil Conditions and Forest Composition on Morph Frequencies in a Woodland Salamander, Plethodon cinereus*

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

28. Jacob Macro, Biological Sciences (2019)

Project Title: *The Effects of Indy Reduction on Fly Intestinal Stem Cell Homeostasis*

Faculty Mentor: Dr. Blanka Rogina, Department of Genetics and Genome Sciences, UConn Health

29. Shana Morel, Molecular and Cell Biology (2019)

Project Title: *The Effect of Itraconazole on Smoothed Localization in the Primary Cilium*

Faculty Mentor: Dr. Kyle Hadden, Department of Pharmaceutical Sciences

30. Monica Nagalla, Physiology and Neurobiology (2019)

Project Title: *Localization of Cyp450 Odorant Degrading Enzymes to Specific Cell Classes within the Drosophila Antenna*

Faculty Mentor: Dr. Karen Menuz, Department of Physiology and Neurobiology

31. Shankara Narayanan, Political Science & History (2021)

Project Title: *American Imperium: The Rise and Decline of U.S. Global Power*

Faculty Mentor: Dr. Alexander Anievas, Department of Political Science

32. Daniel Netting, Molecular and Cell Biology (2019)

Project Title: *Identity of the Downstream Partners of Sma0113*

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

33. Esther Nof, Molecular and Cell Biology (Dec. 2018)

Project Title: *siRNA Dose-Dependency of Cyclin D1 Knockdown in HR+ Breast Cancer Cell Lines*

Faculty Mentor: Dr. Xiuling Lu, Department of Pharmaceutical Sciences

34. Christina O'Connor, Nursing (2020)

Project Title: *Understanding the Experience of Parents Utilizing Car Bed Travel*

Faculty Mentor: Dr. Michele DeGrazia, Director of Nursing Research, Neonatal Intensive Care, Boston Children's Hospital; Assistant Professor, Harvard Medical School

UConn Mentor: Dr. Jacqueline McGrath, School of Nursing

35. Zachary O'Connor, Statistics (2019)

Project Title: *Analysis of the DBP2B Intron in Trypanosoma Brucei*

Faculty Mentor: Dr. Arthur Gunzl, Department of Genetics and Genome Sciences, UConn Health

36. Brandon O'Sullivan, Molecular and Cell Biology (2019)

Project Title: *Examining the Potential for Nitrogen Fixation by Bacteria Present in the Trachymyrmex septentrionalis Fungus Gardens*

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

37. Natasha Patel, Molecular and Cell Biology (2019)

Project Title: *The Utilization of Collagen IV-derived Peptide to Prevent Bony Bridge Formation in Injured Growth Plates of Col2a1 Genetic Reporter Mice*

Faculty Mentor: Dr. Liisa Kuhn, Department of Biomedical Engineering

38. Usra Qureshi, Molecular and Cell Biology & Human Rights (2019)

Project Title: *Assessment of Access to Maternal Healthcare for Refugee Women in Greece: Human Rights Perspective*

Faculty Mentor: Dr. Kathryn Libal, Department of Human Rights and School of Social Work

39. Ajeetej Rai, Psychological Sciences & Physiology and Neurobiology (Dec. 2018)

Project Title: *Feeding Behavior Comparison between Preterm vs. Full-Term Infants and the Neurological Benefits*

Faculty Mentor: Dr. Ruth Lucas, School of Nursing

40. Ryan Ramos, Molecular and Cell Biology & Psychological Sciences (Dec. 2018)

Project Title: *Determining Parafibromin's Paf1 Complex-Dependent and Complex-Independent Roles in Mesenchymal Stem Cells*

Faculty Mentor: Dr. Jessica Costa-Guda, Center for Molecular Oncology, UConn Health

41. Michael Reid Jr., English (2019)

Project Title: *The Effect of District Income Segregation on District and School Achievement*
Faculty Mentor: Dr. Betsy McCoach, Department of Educational Psychology

42. Kelsey Richard, Individualized Major: Global Health (2019)

Project Title: *The Effect of High Energy Impact Mechanical Load on Responses in Knee Articular Cartilage*
Faculty Mentor: Dr. Caroline Dealy, Departments of Reconstructive Sciences, Orthopaedic Surgery, and Cell Biology, UConn Health

43. Samantha Richards, Speech, Language, and Hearing Sciences (2019)

Project Title: *Eye-Tracking with Homesigners: Developing an Implicit Measure of Social Cognition in Adults without Conventional Language*
Faculty Mentor: Dr. Marie Coppola, Departments of Psychological Sciences and Linguistics

44. Sara Rohde, Physiology and Neurobiology & Psychological Sciences (2019)

Project Title: *Neuroanatomy of Neonatal Hypoxic Ischemic Injury with Caffeine Treatment and Correlation to Cognitive Functioning*
Faculty Mentor: Dr. Holly Fitch, Department of Psychological Sciences

45. Veronica Rollins, Political Science & Individualized Major: Law and Immigration (2019)

Project Title: *A Legislative Analysis of Temporary Protected Status for El Salvador*
Faculty Mentor: Dr. Charles Venator Santiago, Department of Political Science

46. Sarah Rumsey, Ecology and Evolutionary Biology (2019)

Project Title: *Connecticut Climate Change: A Historical View through Avian Migration Phenology*
Faculty Mentor: Dr. Morgan Tingley, Department of Ecology and Evolutionary Biology

47. Claire Schlink, Marine Sciences (2019)

Project Title: *Determining Sediment Denitrification and Oxygen Consumption Rates of Little Narragansett Bay*
Faculty Mentor: Dr. Julie Granger, Department of Marine Sciences

48. Lilia Shen, Biological Sciences (2019)

Project Title: *Embryonic Lethality of Craniofacial Specific CDC73 Knockout Mice*
Faculty Mentor: Dr. Jessica Costa-Guda, Center for Molecular Oncology, UConn Health

49. Sam Strizver, Psychological Sciences & English (2019)

Project Title: *The Effects of Age Stereotypes on Perceptions of Job Placement*
Faculty Mentor: Dr. Janet Barnes-Farrell, Department of Psychological Sciences

50. Helena Sun, Speech, Language, and Hearing Sciences & Music (2019)

Project Title: *Investigating a Novel Sound Recording Device for the Study of the Environmental Soundscapes of College Musicians and their Risk of Noise-Induced Hearing Loss*
Faculty Mentor: Dr. Erika Skoe, Department of Speech, Language, and Hearing Sciences

51. Nicholas Tambini, Allied Health Sciences (2019)

Project Title: *The Role of ApoC-III on the Circulating Immune System in Response to a Western Diet*
Faculty Mentor: Dr. Alison Kohan, Department of Nutritional Sciences

52. Aberdeen Taylor, Structural Biology and Biophysics (2019)

Project Title: *Computational Study of Designed Tau Protein Antibodies with Enhanced Binding Characteristics*
Faculty Mentor: Dr. Eric May, Department of Molecular and Cell Biology

53. Benjamin Teerlinck, Molecular and Cell Biology & Geoscience (2019)

Project Title: *Geochemical Signatures of Life in Extreme Environments: An Analogue for Life on Mars?*
Faculty Mentor: Dr. Michael Hren, Department of Chemistry

54. Sarah Todd, Nursing (2019)

Project Title: *Exploring the Relationships of Health Literacy, Cognitive Impairment, Self-Efficacy, and Diabetes Knowledge among Incarcerated Persons Transitioning to the Community*
Faculty Mentor: Dr. Louise Reagan, School of Nursing

55. Anna Vaeth, Physiology and Neurobiology (2019)

Project Title: *The Glial Role in the Ketogenic Diet on Seizure Reduction in a Drosophila Model*
Faculty Mentor: Dr. Geoffrey Tanner, Department of Physiology and Neurobiology

56. Melinda Wei, Molecular and Cell Biology (2019)

Project Title: *Identification and Characterization of the Roles of MicroRNA Sequences in *Salpa thompsoni**
Faculty Mentor: Dr. Rachel O'Neill, Department of Molecular and Cell Biology

57. Yue Yang, Biomedical Engineering (2019)

Project Title: *Identifying Novel Transcription Factor Interactions in Subtypes of Retinal Ganglion Cells*
Faculty Mentor: Dr. Ephraim Trakhtenberg, Department of Neuroscience, UConn Health

58. Daniel Zeigher, Environmental Engineering (2019)

Project Title: *Assay of Chronic Toxicity of Nanoparticles to Soil Protists*
Faculty Mentor: Dr. Leslie Shor, Department of Chemical and Biomolecular Engineering

59. Mengting Zhu, Chemical Engineering (2019)

Project Title: *Multi-Stimuli Responsive Chromisms Based on Three-Dimensional Integration for Stretchable Interactive Electronics*
Faculty Mentor: Dr. Luyi Sun, Department of Chemical and Biomolecular Engineering