



ENRICHMENT PROGRAMS

OFFICE OF
UNDERGRADUATE RESEARCH

2016 Summer Undergraduate Research Fund (SURF) Awards

Congratulations to the forty-four undergraduate SURF Award recipients for Summer 2016! 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. Stephen Abini-Agbomson, Structural Biology and Biophysics (2017)

Project Title: *Using 13C NMR to Identify Metabolically Important Molecules in Bacterial Spores and Utilizing this to Determine if Spores are Dormant and Dynamic*

Faculty Mentor: Dr. Peter Setlow, Department of Molecular Biology and Biophysics, UConn Health

2. Dinkar Ahuja, Biological Sciences (2018)

Project Title: *Influence of Caspase 3 Inhibition and 3-Dimensional Hydrogel Culture on Transplanted Satellite Cell Fate*

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

3. Michael Amato, Art – Photography (2017)

Project Title: *Documenting the Burner Subculture: Photographs of the Hawai'i Fire Artists*

Faculty Mentor: Dr. Janet Pritchard, Department of Art and Art History

4. Jishnu Bhatt, Molecular and Cell Biology (2017)

Project Title: *Determining if the Optogenetic Glosensor Plant Can Effectively Monitor cAMP Elevations Associated with Plant Signaling*

Faculty Mentor: Dr. Gerald Berkowitz, Department of Plant Science and Landscape Architecture

5. Tessa Brighton, Physiology and Neurobiology (2017)

Project Title: *Longitudinal Evaluation of White Matter Integrity in Relation to Protein Abnormalities due to Aging*

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

6. Suzanne Cayer, Physiology and Neurobiology (2017)

Project Title: *Effects of the Pro-Inflammatory Cytokine Interleukin-6 on Effort-Related Decision Making in a T-maze Cost/Benefit Procedure: Implications in Pathophysiology of Motivational Dysfunctions*

Faculty Mentor: Dr. John Salamone, Department of Psychological Sciences

7. Adrian Coscia, Molecular and Cell Biology (2017)

Project Title: *Investigation of the Structure and Function of the ERMES Complex*

Faculty Mentor: Dr. Nathan Alder, Department of Molecular and Cell Biology

8. Matthew Cucurello, Molecular and Cell Biology (2017)

Project Title: *A Putative Role of Light Detection by Hemocytes in the Hawaiian Bobtail Squid-Vibrio fischeri symbiosis*

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

9. Justin DeLarm, Mechanical Engineering (2017)

Project Title: *Developing a Computational Model to Improve the Analysis and Design of Laser Sintering Devices*

Faculty Mentor: Dr. Xinyu Zhao, Department of Mechanical Engineering

10. Tess Dokmanovich, Physiology and Neurobiology (2017)

Project Title: *Acute and Chronic Effects of Ketamine Administration on Hippocampal and Prefrontal Oscillations in Young Rodents During Sleep and Wakefulness*

Faculty Mentor: Dr. James Chrobak, Department of Psychological Sciences

11. Lacie Dube, Chemistry (2019)

Project Title: *Surface Enhanced Raman Spectroscopy of Au Nanoparticle Assembly Structured Substrates to Detect Glucose Levels*

Faculty Mentor: Dr. Jing Zhao, Department of Chemistry

12. Caitlin Eaton-Robb, Biomedical Engineering & Spanish (2018)

Project Title: *Development of Flexible, Waterproof Electrodes using Screen Printed Conductive Fabric*

Faculty Mentor: Dr. Ki Chon, Department of Biomedical Engineering

13. Kristina Gaffney, Allied Health Sciences (2017)

Project Title: *Exploring the Function of the Myf5 and MyoD Genes in Satellite Cells during Early Postnatal Myogenesis*

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

14. Sean Gunn, Applied Mathematics & Mechanical Engineering (2017)

Project Title: *Guidance Optimization for Emergency Evacuations during Active Shooter Events while considering Physiological Features*

Faculty Mentor: Dr. Peter Luh, Department of Electrical and Computer Engineering

15. Shivali Gupta, Physiology and Neurobiology & Psychology (2017)

Project Title: *Rat Behavioral Discrimination of Temporal Cues in Call Recognition*

Faculty Mentor: Dr. Heather Read, Department of Psychological Sciences

16. Ashwini Joshi, Biomedical Engineering (2017)

Project Title: *Detection of Circulating Tumor Cells by Magnetic Focusing and Smartphone*

Faculty Mentor: Dr. Savas Tasoglu, Department of Mechanical Engineering

17. Nina Klein, Human Development and Family Studies (2017)

Project Title: *An Analysis of How Post-Divorce Family Reorganization Processes Impact Interpersonal Relationships Later in Life*

Faculty Mentor: Dr. Shannon Weaver, Department of Human Development and Family Studies

18. Soumya Kundu, Computer Science and Engineering (2018)

Project Title: *Computational Phylogenetics: Reconciliation with Unrooted Gene Trees*

Faculty Mentor: Dr. Mukul Bansal, Department of Computer Science and Engineering

19. Samantha Lawrence, Psychology & Human Development and Family Studies (2017)

Project Title: *The Relation Between Personal Bullying Experiences with Evaluations of Various Response Strategies to Exclusion Bullying Scenarios*

Faculty Mentor: Dr. Alaina Brenick, Department of Human Development and Family Studies

20. Rachel Lonchar, Mathematics & Civil Engineering (2017)

Project Title: *Efficient Coupling for Finite State Markov Chains*

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

21. Nefeli Makris, Nursing (2018)

Project Title: *The NICU Parent Risk Evaluation and Engagement Model and Instrument (PREEMI) for Neonates in Intensive Care Units*

Faculty Mentor: Dr. Jacqueline McGrath, School of Nursing

22. Radhika Malhotra, Physiology and Neurobiology & Economics (2018)

Project Title: *Analyzing the Effects of Ras Signaling on Ovulation through the Use of *Drosophila melanogaster* as an Animal Model System*

Faculty Mentor: Dr. Jianjun Sun, Department of Physiology and Neurobiology

23. Brittany Molkenhain, Nursing (2017)

Project Title: *Evaluation of Association between BMI, TLR4, and Postpartum Depression Symptomatology*

Faculty Mentor: Dr. Michelle Judge, School of Nursing

24. Lindsay Moore, Nursing (2017)

Project Title: *Investigating the Relationship Between Infant Weight Gain and Early Cessation of Breastfeeding in Late Preterm and Full-Term Infants*

Faculty Mentor: Dr. Ruth Lucas, School of Nursing

25. Jessica Murdzek, Chemistry (2017)

Project Title: *Optimizing the Microwave Synthesis of Sodium Tungsten Bronze for Use in Circuit Breakers*

Faculty Mentor: Dr. Steven Suib, Department of Chemistry

26. Catherine Nowakowski, Environmental Engineering (2017)

Project Title: *Prediction of Harmful Water Quality Parameters Combining Weather, Air Quality and Ecosystem Models with Satellite and In-situ Measurements*

Faculty Mentor: Dr. Marina Astitha, Department of Civil and Environmental Engineering

27. Jennifer O'Brien, Elementary Education (2017)

Project Title: *A Study of Parent Perceptions of Advanced Academic Potential in the Early Grades*

Faculty Mentor: Dr. Catherine Little, Department of Educational Psychology

28. Connor Occhialini, Physics & Mathematics (2018)

Project Title: *Pump-Probe Investigations of Negative Thermal Expansion in Empty Perovskite ScF₃*

Faculty Mentor: Dr. Jason Hancock, Department of Physics

29. Kirstie Oldham, Nursing (2017)

Project Title: *Validating the Coming off Treatment Questionnaire with Health Care Professionals and Nurses to Identify the Needs of Children with Cancer and Their Parents*

Faculty Mentor: Dr. Ruth Lucas, School of Nursing

30. Akua Owusu, Molecular and Cell Biology (2017)

Project Title: *Tyrosine Phosphorylation of the Bacterial Stress Factor BipA Aids in Adaptation and Pathogenicity*

Faculty Mentor: Dr. Victoria Robinson, Department of Molecular and Cell Biology

31. Dinah Parker, Biological Sciences (2017)

Project Title: *When Your Partner Shapes Your Look: DNA Analysis of Symbionts in Photomorphing Lichens*

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

32. Devisha Patel, Molecular and Cell Biology (2017)

Project Title: *Dietary Influences on ApoC-III Expression within the Intestine and Liver*

Faculty Mentor: Dr. Alison B. Kohan, Department of Nutritional Sciences

33. Marissa Piccolo, Political Science & Economics (2017)

Project Title: *Women in State Legislatures: The Relationship between States' Attitudinal and Structural Conditions and Levels of Female Representation*

Faculty Mentor: Dr. Virginia Hettinger, Department of Political Science

34. Alyssa Pierne, Chemical Engineering (2018)

Project Title: *Role of Gradient Microenvironments in Supporting Termite Gut Community Diversity*

Faculty Mentor: Dr. Leslie Shor, Department of Chemical and Biomolecular Engineering

35. Molly Potter, Physiology and Neurobiology & Psychology (2017)

Project Title: *Neuroanatomical Investigation of a Rodent Model of Hypoxic Ischemic Brain Injury*

Faculty Mentor: Dr. R. Holly Fitch, Department of Psychological Sciences

36. Sarah Robbins, Pathobiology & Molecular and Cell Biology (2018)

Project Title: *Generation of Tetracycline-Inducible Copenhagen and Dryvax Vaccinia Virus Strains for Vaccine Development*

Faculty Mentor: Dr. Paulo Verardi, Department of Pathobiology and Veterinary Science

37. Summit Singhaviranon, Chemical Engineering & Molecular and Cell Biology (2017)

Project Title: *High Efficiency Production of 1,3-Propanediol by Recombinant Escherichia coli*

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

38. Helen Stec, History & English (2018)

Project Title: *Battle from the Homefront: How Two Northern Women Helped Fight the Civil War*

Faculty Mentor: Dr. Peter Baldwin, Department of History

39. Zachary Stempel, Chemistry (2018)

Project Title: *Investigation of Electrostatic Interactions in Determining Conformational Behavior of Carbocyclic and Heterocyclic Compounds*

Faculty Mentor: Dr. William Bailey, Department of Chemistry

40. Victoria Sylvestre, Nursing (2017)

Project Title: *Type 1 Diabetes and Health Care Providers: Understanding Social Perceptions, Stigma, and Shame*

Faculty Mentor: Dr. Ruth Lucas, School of Nursing

41. Christopher Tricard, Chemical Engineering (2017)

Project Title: *Enhanced Photodynamic Efficacy of Porphyrin by Nanodisc Encapsulation*

Faculty Mentor: Dr. Mu-Ping Nieh, Department of Chemical and Biomolecular Engineering

2016 SURF Award Recipients

42. Camille Van Allen, Nursing (2017)

Project Title: *The Parental Perception of Helmet Therapy for Infants with Plagiocephaly*

Faculty Mentor: Dr. Michele DeGrazia, Director of Nursing Research, Neonatal Intensive Care, Boston Children's Hospital

UConn Mentor: Dr. Jacqueline McGrath, School of Nursing

43. Xiuyi Yang, Molecular and Cell Biology (2018)

Project Title: *A Novel FRET Based Screen for Therapeutic Targets in Alzheimer's Disease Drug Discovery*

Faculty Mentor: Dr. Adam Zweifach, Department of Molecular and Cell Biology

44. Shaharyar Zuberi, Physiology and Neurobiology (2017)

Project Title: *Single-Cell Gene Expression Analysis of Astrocytes in Glial Scar Formation*

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