

The 24th Annual

# UIROP

Undergraduate Research Symposium



**Poster Presentations**  
11am to 1pm

**October 22nd, 2021**  
GSU Metcalf Ballroom

# Welcome

Welcome to Boston University's 24th Annual Undergraduate Research Symposium! We are honored to have you engage with our high-achieving students and supportive faculty mentors who have collaborated over the past year working on groundbreaking research.

The Undergraduate Research Opportunities Program (UROP) is a university-wide program that funds undergraduate students to conduct research with BU faculty members in all disciplines. UROP's mission is to nurture curiosity, to capture imagination, and to cultivate relationships between faculty and students beyond the classroom to shape independent, innovative, and collaborative leaders.

Enjoy and be inspired!

John Celenza  
Director

Melissa Johnson  
Assistant Director

Diána Hughes  
Program Administrator

## Acknowledgments

UROP primarily is supported by Boston University's Office of the Provost. We also thank our faculty advisory committee for their efforts in reviewing applications and guiding UROP to achieve its mission. Most importantly, we thank our faculty mentors for providing learning environments for our undergraduates and thus making UROP possible.

In addition, we thank the following financial sponsors for their generosity:

Funds from faculty research grants

Boston University Arts Initiative

National Science Foundation

Clare Boothe Luce Program of the Henry Luce Foundation

New England Biolabs

Friends & Family of Dr. Mark Riemen

Friends & Family of Dr. Mary Erskine

Dr. Loren E. Wold

# Outstanding Students

Students who've excelled



Bella Faber Rico ('23)

CAS Psychology; Anthropology



Jieyu Liu ('22)

COM Public Relations; CAS Religion



Yulu Peng ('23)

CAS Astronomy; Physics



Rakiya Washington ('22)

CAS Psychology

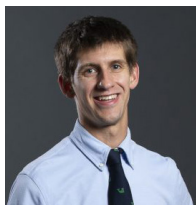
# Outstanding Mentors

Mentors who've inspired



Andreea Bujor

(MED Medicine)



Thomas Byrne

(SSW Social Work)



David Frankfurter

(CAS Religion)



Manher Jariwala

(CAS Physics)

# Presentation Times

About half of the student researchers will be presenting in each poster session.

Poster Session 1  
11am to 12pm

Poster Session 2  
12pm to 1pm

Please limit your stay to 30 minutes!

# Symposium Key

What do you want to learn?



Biological Sciences (1 - 36)



Physical Sciences (37 - 64)



Social Sciences (65 - 116)



Arts & Literature (117 - 146)



Sargent College & Public Health (147 - 167)



Medical - Basic, Clinical, & Dental Sciences (168 - 216)



Computational & Mathematical Sciences (217 - 220)



Engineering (221 - 265)

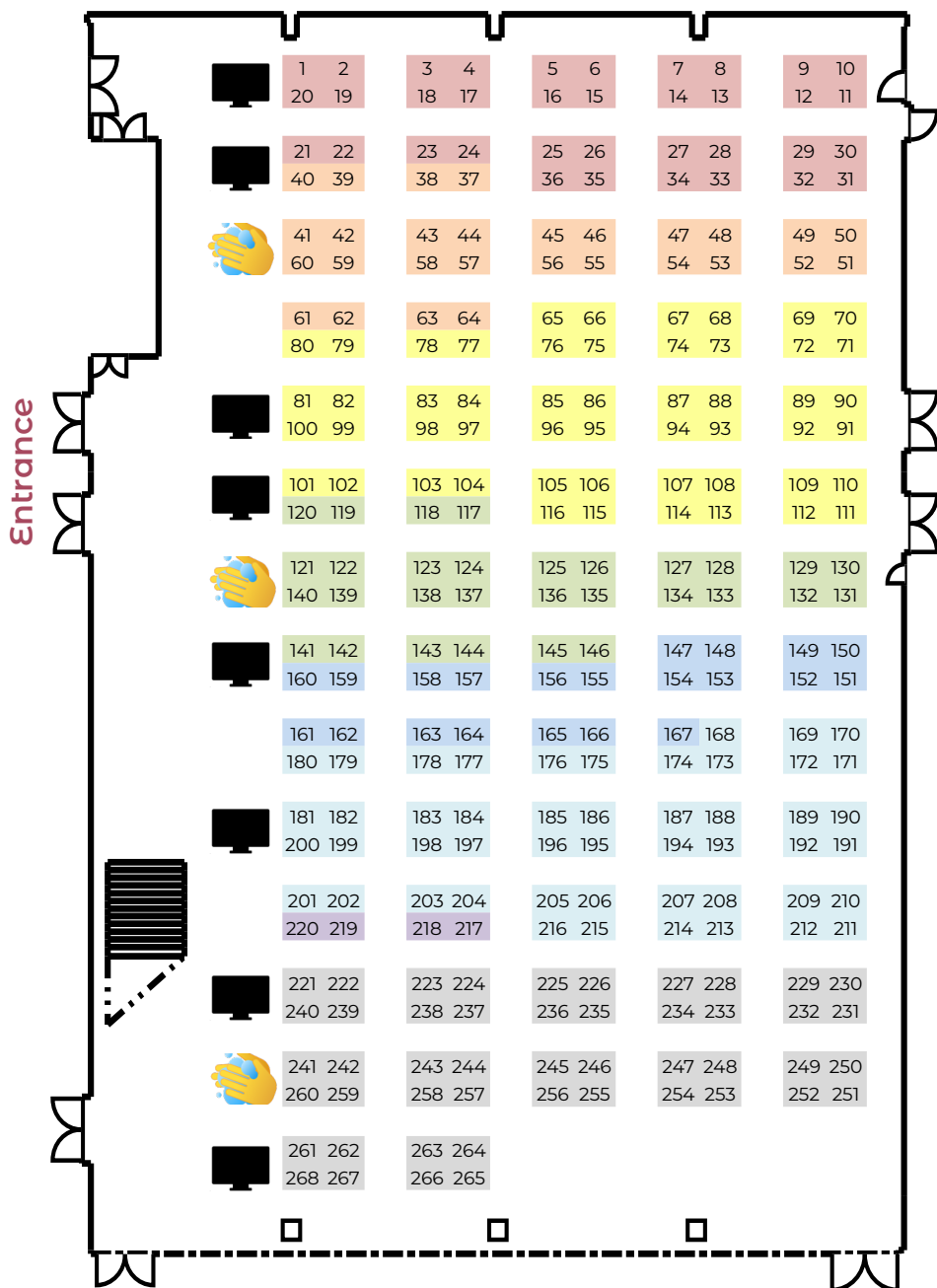


Sanitizing Station



Electronic Poster

# Map of the Symposium



# Student Presenters

**Alktaish, Ward** (168)

**Project Title:** Differential Effect of Antibiotics Induced OMV on Receptor Expression in Alveolar Macrophages

**Faculty Mentor:** Yang Jin (MED Pulmonary)

**Alvarado, Douglas** (1)

**Project Title:** An Investigation of Genetic Mechanisms Underlying Strategic Growth in the Clown Anemonefish *Amphiprion percula*

**Faculty Mentor:** Peter Buston (CAS Biology)

**Alvarado, Sophia** (65)

**Project Title:** Prosecuting White Power: How does White Identity Shape American Legal Institutions?

**Faculty Mentor:** Jeremy Menchik (Frederick S. Pardee School of Global Studies)

**Amato Bauer, Eva** (66)

**Project Title:** Student Perceptions of Safety on the Boston University Residential Campuses

**Faculty Mentor:** Erika Wells (CAS Psychological & Brain Sciences)

**Ausra, Nojus** (169)

**Project Title:** Investigating the Novel Molecular Regulators of Bacteria-Induced Inflammation and Sepsis in Mouse Alveolar Macrophages and Lung Epithelial Cells

**Faculty Mentor:** Yang Jin (MED Medicine)

**Ayre, Meghan** (Electronic Poster)

**Project Title:** The Costs of Extreme Weather Events on United States Military Installations

**Faculty Mentor:** Rosella Cappella Zielinski (CAS Political Science)

**Bacchus, Yeelin** (170)

**Project Title:** Implementation of Centering Parenting during the COVID-19 Pandemic

**Faculty Mentor:** Renee Boynton-Jarrett (MED Pediatrics)

**Bahlous-Boldi, Adam** (221)

**Project Title:** Measuring Lyman-Alpha Emissions with GISSMO

**Faculty Mentor:** Brian Walsh (ENG Mechanical Engineering)

**Bakre, Shirin** (222)

**Project Title:** Engineering Protein Signal Peptides for More Effective WNT Ligand Secretion from Endothelial Cells

**Faculty Mentor:** Christopher Chen (ENG Biomedical Engineering)

**Ballecer, Violette** (37)

**Project Title:** A Relation Between Local Forcing, Climate, and Biological Components of Carbon Uptake in an Urban Environment: A Case Study of Boston, Massachusetts

**Faculty Mentor:** Robert Kaufmann (CAS Earth & Environment)

**Barnes, Katie** (Electronic Poster)

**Project Title:** Positivity For Which Bodies: Exploring Body Positivity and Fat Acceptance on TikTok

**Faculty Mentor:** Cati Connell (CAS Sociology)

**Battcock-Emerson, Madelyn** (2)

**Project Title:** Improving Camelina Sativa's Anti-Herbivory Chemical Defense Repertoire by Introduction of the Arabidopsis Genes Known to Increase Glucosinolate Production

**Faculty Mentor:** John Celenza (CAS Biology)

**Beatty, Charlotte** (Electronic Poster)

**Project Title:** Throwing Out Tradition and Creating New Timelines: College Student Attitudes Towards Marriage and Family

**Faculty Mentor:** Nancy Smith-Hefner (CAS Anthropology)

**Beaudry, Paige** (38)

**Project Title:** Amine Functionalized Poly-Amidosaccharide-RNA Nanoparticle for RNA Interference Therapeutic Delivery

**Faculty Mentor:** Mark Grinstaff (CAS Chemistry)

**Becerril, Carolina** (147)

**Project Title:** Evaluation of the Influence of Social Media on College Students

**Faculty Mentor:** Paula Quatromoni (SAR Health Sciences)

**Belcher, Hadwin** (148)

**Project Title:** The Effect of Lateral Trunk Position and Hip Adduction on Frontal Plane Hip Moments

**Faculty Mentor:** Cara Lewis (SAR Rehabilitation Sciences)

**Bender, Joshua** (223)

**Project Title:** Modeling Elastogranular Interactions via Simulation

**Faculty Mentor:** Douglas Holmes (ENG Mechanical Engineering)

**Berard, Brennon** (39)

**Project Title:** RET-Mediated Signaling Dynamics and Cross-Talk in Differentiating NB41A3-GFR 3 Cells

**Faculty Mentor:** Adrian Whitty (CAS Chemistry)

**Bernard, Michelle** (171)

**Project Title:** Contribution of Mutations in SMAD6 to Risk of Craniosynostosis

**Faculty Mentor:** Shannon Fisher (MED Pharmacology & Experimental Therapeutics)

**Berniac, Gabriela** (224)

**Project Title:** Conditioning Neural Progenitor Cells for Transplantation into Injury Environments in the Central Nervous System

**Faculty Mentor:** Timothy O'Shea (ENG Biomedical Engineering)

**Bhargava, Kaveri** (3)

**Project Title:** Exploring the Interplay Between Alternative Nearby Promoters

**Faculty Mentor:** Ana Fiszbein (CAS Biology)

**Bolognino, John** (Electronic Poster)

**Project Title:** Fisheye Re-ID: Reliably Counting People in Large Indoor Spaces

**Faculty Mentor:** Prakash Ishwar (ENG Electrical & Computer Engineering)

**Bronson, Hayden** (40)

**Project Title:** Search for Top-W Scattering in CMS

**Faculty Mentor:** Indara Suarez (CAS Physics)

**Bruno, Beverly-Danielle** (67)

**Project Title:** Does Bias among Medical Professionals Correlate with Black-White Disparities in Postpartum Depression and Mental Healthcare?

**Faculty Mentor:** Stephanie Curenton-Jolly (Wheelock Education Leadership & Policy Studies; Applied Human Development)

**Campion, Mary** (172)

**Project Title:** The Effect of Perinatal Choline Supplementation on the Cognitive Function and Amyloidosis in the APPNL-G-F Mouse Model of Alzheimer's Disease

**Faculty Mentor:** Tiffany Mellott (MED Pathology)

**Caplan, Sophie** (225)

**Project Title:** Print Path Routine for Multimaterial 4D Printing Applications

**Faculty Mentor:** J. William Boley (ENG Mechanical Engineering)

**Captan, Fiona** (68)

**Project Title:** The Western Shoshone Radiation Poisoning and the Nevada National Security Site

**Faculty Mentor:** Jayita Sarkar (Frederick S. Pardee School of Global Studies)

**Carias, Sophia** (69)

**Project Title:** Characterizing Differences in Children's Executive Function for Forgiveness

**Faculty Mentor:** Peter Blake (CAS Psychological & Brain Sciences)

**Chaharom, Caspian** (41)

**Project Title:** Trigger Development on DarkQuest Experiment

**Faculty Mentor:** David Sperka (CAS Physics)

**Challain, Julie** (70)

**Project Title:** Evaluating the Relationship Between Hormonal Contraceptive Use and Depression

**Faculty Mentor:** Anthony Rosellini (CAS Psychological & Brain Sciences)

**Chan, Nora** (149)

**Project Title:** Investigating the Role of Soft Robotic Exosuits in Gait Training Post-Stroke: The Beginning Stages of a Parallel Group Randomized Controlled Trial

**Faculty Mentor:** Louis Awad (SAR Physical Therapy)

**Chang, Danielle** (117)

**Project Title:** Radical Characters: A Curatorial Project Exploring Design and Culture in the Chinese and Chinese American Community

**Faculty Mentor:** Mary Yang (CFA Graphic Design)

**Charny, Kira** (71)

**Project Title:** How Forgiveness Related to Social Cognition

**Faculty Mentor:** Peter Blake (CAS Psychological & Brain Sciences)

**Chen, Angela** (42)

**Project Title:** Screening Compound Collections for Inhibitors of the KEAP1-Nrf2 Protein-Protein Interaction

**Faculty Mentor:** Adrian Whitty (CAS Chemistry)



**Chen, Jessica** (173)

**Project Title:** Identification of Small Molecule Inhibitor IGGi-11 of GIV-Gai Interaction for Cancer-Associated Signaling Complex Targeting

**Faculty Mentor:** Mikel Garcia-Marcos (MED Biochemistry)

**Chen, Roy** (226)

**Project Title:** HappyCell - Your Genetic Design Helper

**Faculty Mentor:** Radhakrishna Sanka (ENG Computer Engineering)

**Chen, Wanyi** (118)

**Project Title:** Digital Humanities: The China Historical Christian Database

**Faculty Mentor:** Daryl Ireland (CAS History)

**Chen, Yongting** (174)

**Project Title:** LC-MS/MS Analysis of Glycans Derivatized with a Reducing-end Fixed Charge

**Faculty Mentor:** Cheng lin (MED Biochemistry)

**Cheng, Fangzhou** (175)

**Project Title:** A Novel Oxalate-Curcumin-Based Imaging Probe: Enabling to Visualize Reactive Oxygen Species in Atherosclerosis

**Faculty Mentor:** Jingyan Han (MED Vascular Biology)

**Cheng, Victoria** (119)

**Project Title:** Mapping the History of Christianity in China from 1550-1950

**Faculty Mentor:** Eugenio Menegon (CAS History)

**Chiulli, Nicole** (72)

**Project Title:** Production of Central Tendency Effects in Interval Timing Tasks via Reinforcement Learning

**Faculty Mentor:** Ben Scott (CAS Psychological & Brain Sciences)

**Chodes, Allison** (73)

**Project Title:** Children's Propensity for Generalizing (CPG)

**Faculty Mentor:** Kathleen Corriveau (Wheelock Applied Human Development)

**Clark, Morgan** (74)

**Project Title:** From the Net to the Met: Reducing the Barrier to Arts Engagement Through TikTok

**Faculty Mentor:** Jane Rayburn (COM Mass Communication, Advertising & Public Relations)

**Clark, Quentin** (227)

**Project Title:** High-throughput Finite Temperature Properties of 2D Materials from First Principles

**Faculty Mentor:** Sahar Sharifzadeh (ENG Electrical & Computer Engineering)

**Cole, Rebecca** (176)

**Project Title:** Oxydodone Behaviors in Cacna1h Knockout Mice

**Faculty Mentor:** Camron Bryant (MED Pharmacology)

**Cordeiro Lopes, Elisa** (228)

**Project Title:** Classifying States of Anesthesia in Mice using Electrical and Optical Activity

**Faculty Mentor:** John White (ENG Biomedical Engineering)

**Cowan, Sadie** (75)

**Project Title:** GDOC Freeze Frame Policies: Leaving Inmates Frozen in Time

**Faculty Mentor:** Heather Schoenfeld (CAS Sociology)

**Dahlstrom, Maximillian** (76)

**Project Title:** French Critical Appropriations of Nietzsche: Deleuze and Foucault

**Faculty Mentor:** Allen Speight (CAS Philosophy)

**de Kock, Ryan** (43)

**Project Title:** Non-Fullerene Acceptor Syntheses for Application in Organic Solar Cells

**Faculty Mentor:** Malika Jeffries-EL (CAS Chemistry)

**De Laney, Maura** (77)

**Project Title:** Perceptions of Academic Misconduct at Universities in the United States

**Faculty Mentor:** Andrea Mercurio (CAS Psychological & Brain Sciences)

**Degtiareva, Vera** (44)

**Project Title:** Pedagogy in Practice: Exploring the Use of Pedagogy Course Knowledge by Learning Assistants

**Faculty Mentor:** Manher Jariwala (CAS Physics)

**Del Deo, Luca** (120)

**Project Title:** The Creation of Subconscious Agents as Religious Practice: Consideration of the Tulpamancy Case

**Faculty Mentor:** Deeana Klepper (CAS Religion and History)

**deLange, Julie** (150)

**Project Title:** Assessing heat exposure in Chelsea and East Boston through a summer field study: Boston University School of Public Health & GreenRoots, Inc., Chelsea, MA

**Faculty Mentor:** Madeleine Scammell (SPH Environmental Health)

**Denker, Alexandra** (121)

**Project Title:** Sexual Restriction in Religions of the Ancient Mediterranean

**Faculty Mentor:** David Frankfurter (CAS Religion)

**Desai, Niharika** (4)

**Project Title:** Effect of Nutritional Status on Transcriptional Factor NF- $\kappa$ B and Immunity in Sea Anemone Models: Implications for Effects of Environmental Change on Marine Organisms

**Faculty Mentor:** Thomas Gilmore (CAS Biology)

**Diaz, Sebastian** (229)

**Project Title:** Increasing the Throughput of an Autonomous Experimentation System for Mechanics

**Faculty Mentor:** Keith Brown (ENG Mechanical Engineering)

**DiFillipo, Alexis** (78)

**Project Title:** Disparities Amongst Popular Epidemiology Movements: How Power Structures Enforce Racism and Classism

**Faculty Mentor:** Japonica Brown-Saracino (CAS Sociology)

**Dolynuk, Alexandra** (230)

**Project Title:** Characterizing eLightOn for *E. coli*; a Single-Component, Highly Tunable, Optogenetic System

**Faculty Mentor:** Mary Dunlop (ENG Biomedical Engineering)

**Dorst, William** (177)

**Project Title:** Setting Up Studies of Flamenco Mutant Flies and P-element Transposition in S2 Cells

**Faculty Mentor:** Nelson Lau (MED Biochemistry)

**Dow, Delaney** (231)

**Project Title:** Improving CT-based Lung Cancer Diagnosis Via In Silico Deformation Mapping Biophysical Characteristics of the Lungs

**Faculty Mentor:** Hadi Nia (ENG BME)

**Duffy, Erin** (79)

**Project Title:** How Does Parental Social Support Buffer Against Stress from COVID-19 to Promote Parent and Child Mental Health?

**Faculty Mentor:** Nicholas Wagner (CAS Psychological & Brain Sciences)

**Dunn, Sierra** (217)

**Project Title:** Transverse Modulational Dynamics of Patterns

**Faculty Mentor:** Ryan Goh (CAS Mathematics)

**Edwards, Raphael** (5)

**Project Title:** Northern Diamondback Terrapin Nesting Response to Climate Change in Buzzards Bay

**Faculty Mentor:** Peter Buston (CAS Marine Science)

**Edwards, Thierry** (6)

**Project Title:** Dissecting Protein Interactions with Multi-Domain Human Cofactors

**Faculty Mentor:** Trevor Siggers (CAS Biology)

**Enkhbayar, Khaliun** (178)

**Project Title:** Endothelial Scavenger Receptors in the Hematopoietic Niche

**Faculty Mentor:** Elliott Hagedorn (MED Medicine)

**Faber-Rico, Bella** (80)

**Project Title:** Queer Womanhood and Body Image during the COVID-19 Pandemic

**Faculty Mentor:** Merav Shohet (CAS Anthropology)

**Famin, Dina** (122)

**Project Title:** The Development of the Artist in Franz Kafka's Fiction

**Faculty Mentor:** Abigail Gillman (CAS World Languages & Literatures)

**Fan, Alice** (45)

**Project Title:** Expanding the Lantern Complex Library: Homobimetallic Lantern Complexes and Related Mononuclear Species

**Faculty Mentor:** Linda Doerrer (CAS Chemistry)

**Farren, Maggie** (123)

**Project Title:** Richard Wright and James Baldwin: The Role of the Black American Writer

**Faculty Mentor:** Anita Patterson (CAS English)

**Fayie, Soumaya** (232)

**Project Title:** Small Scale COVID-19 WasteWater Surveillance at Boston University

**Faculty Mentor:** Catherine Klapperich (ENG Biomedical Engineering)

**Feng, Helen** (7)

**Project Title:** Interrogate the Interaction Between Transcription from Alternative Promoters

**Faculty Mentor:** Ana Fiszbein (CAS Biology)

**Filippova, Sofiya** (233)

**Project Title:** Using Computational Modeling to Optimize Carbon Capture Systems

**Faculty Mentor:** Emily Ryan (ENG Mechanical Engineering)

**Finn, Delaney** (124)

**Project Title:** Trust in Music Education - Understanding How Trust is Facilitated in A Music Making Space While Dismantling Power Structures

**Faculty Mentor:** Karin Hendricks (CFA Music Education)

**Foran, Christine** (8)

**Project Title:** Genotyping and Investigating Immune Response of Aldolase B Deficient Mice

**Faculty Mentor:** Dean Tolan (CAS Biology)

**Fraser, Kate** (125)

**Project Title:** Listener Perception and Identification of Asian American Speech

**Faculty Mentor:** Charles Chang (CAS Linguistics)

**Frias, Jodee** (234)

**Project Title:** Testing of Short-Wave Infrared Probe for Tissue Water and Lipid Monitoring during Hemodialysis.

**Faculty Mentor:** Darren Roblyer (ENG Biomedical Engineering)

**Fritea, Nikolas** (179)

**Project Title:** Effect of Netarsudil on Volume of Giant Vacuoles in Schlemm's Canal Endothelial Cells of Human eyes

**Faculty Mentor:** Haiyan Gong (MED Ophthalmology)

**Fulton, Samuel** (46)

**Project Title:** Designing an Aerogel RICH Detector for EMPHATIC Experiment

**Faculty Mentor:** Edward Kearns (CAS Physics)

**Gan, Yaoyuan** (9)

**Project Title:** The Role of Algal Symbiont Long Non-coding RNAs (LncRNAs) in the Coral Bleaching Response

**Faculty Mentor:** Sarah Davies (CAS Biology)

**Garcia, Arturo** (Electronic Poster)

**Project Title:** Connected Vehicles in Vehicular Network Simulations

**Faculty Mentor:** David Starobinski (ENG Electrical & Computer Engineering)

**Garcia, David** (180)

**Project Title:** The Localization of Golgin and P2X7 in Cell-Cell Signaling and Migration in the Context of Corneal Wound Healing in Diabetic and Normal Mice Models

**Faculty Mentor:** Vickery Trinkaus-Randall (MED Biochemistry)

**Gardiner, John** (181)

**Project Title:** Retinal Regulation of Antigen Presentation and Processing

**Faculty Mentor:** Andrew Taylor (MED Ophthalmology)

**Gareeva, Kamila** (10)

**Project Title:** Site-directed Mutagenesis of Ketohexokinase-C towards Understanding the Catalytic Mechanism

**Faculty Mentor:** Dean Tolan (CAS Biology)

**Gilbert, Evan** (81)

**Project Title:** The Racialized Dating Experiences of Asian, Black, and Latine Members of the LGBTQ Community

**Faculty Mentor:** Sarah Miller (CAS Sociology)

**Gillis, Melissa** (47)

**Project Title:** The Development of Nanoparticles to treat SARS-CoV-2

**Faculty Mentor:** Mark Grinstaff (CAS Chemistry)

**Goldfeder, Nichole** (11)

**Project Title:** The Effect of 4-Aminopyridine on Synaptic Activity in the Crayfish Ventral Superficial Flexor

**Faculty Mentor:** Jen-Wei Lin (CAS Biology)

**Graham, Benjamin** (82)

**Project Title:** Determining The Effects of Laser Stimulation and Injection Surgery on Behavior During Complex Instrumental and Pavlovian Tasks

**Faculty Mentor:** Mark Howe (CAS Psychological & Brain Sciences)

**Greenhill, Charlotte** (151)

**Project Title:** How Global LGBTQ+ Identities Affect Health, Relationships, and Experiences: Qualitative Interviews with Queer Individuals from Around the World

**Faculty Mentor:** Kaytlin Eldred (SAR Health Sciences)

**Hahm, Christian** (83)

**Project Title:** Do Economic and Social Resources Buffer the Impact of Life Shocks on Housing Instability?

**Faculty Mentor:** Thomas Byrne (SSW Social Work)

**Harder, Kristen** (12)

**Project Title:** Regulation of Cell Death During Drosophila Oogenesis

**Faculty Mentor:** Kimberly McCall (CAS Biology)

**Harkopf, Isabella** (126)

**Project Title:** Critical Pedagogy in School Music Programs: Examining the Disconnect from Teacher Preparation to Active Teaching

**Faculty Mentor:** Kelly Bylica (CFA Music Education)

**Harold, Jourdan** (13)

**Project Title:** The Effects of Diel Thermal Variability on Coral Symbiont Physiology and Overall Thermal Stress Resistance

**Faculty Mentor:** Sarah Davies (CAS Biology)

**Haynes, Alyssa** (14)

**Project Title:** Characterizing Responses of Bacterial Communities to Rapid Environmental Changes

**Faculty Mentor:** Joe Larkin (CAS Biology, Physics)

**Hernandez, Ricardo** (48)

**Project Title:** Terpene Remodeling of Raman Active Derivatives: Cholesterol

**Faculty Mentor:** John Snyder (CAS Chemistry)

**Herning, Ana** (49)

**Project Title:** Optimized Synthesis of an Air-Stable Fe(III) Fluorinated Hydroxide Alkoxide

**Faculty Mentor:** Linda Doerrer (CAS Chemistry)

**Hill, Emily** (182)

**Project Title:** Developing a Caffeine-Inducible Split Recombinase System in Zebrafish

**Faculty Mentor:** Hui Feng (MED Pharmacology)

**Ho, Isabella** (15)

**Project Title:** Exploring Viral Mechanisms of Immune Evasion through Inhibiting Interferon Signaling

**Faculty Mentor:** Juan Fuxman Bass (CAS Biology)

**Holbrook, Otto** (16)

**Project Title:** Evaluation of Differential Expression between Endogenous Scabrous and the Scabrous 5-120 Mutant

**Faculty Mentor:** Kyle Gobrogge (CAS Biology)

**Hoyt, Deidra** (Electronic Poster)

**Project Title:** Moctezuma Xocoyotzin: The Benefits of Historical Fiction in Depicting the Indigenous Perspective of the Mexican Conquest

**Faculty Mentor:** Maria Datel (CAS Romance Languages)

**Huang, Sarah** (183)

**Project Title:** Targeting UFD1 as a Novel Immunotherapeutic Approach for MYCN-Driven Neuroblastoma

**Faculty Mentor:** Hui Feng (MED Pharmacology)

**Hui, Veronica** (235)

**Project Title:** Exploring the Role of Akt Isoforms on the Morphologic and Migratory Behavior of Breast Cancer Mutants

**Faculty Mentor:** Christopher Chen (ENG Biomedical Engineering)

**Hussein, Abdelaziz** (236)

**Project Title:** A Statistical Study on Fast Plasma Streams in the Inner Magnetosphere

**Faculty Mentor:** Toshi Nishimura (ENG Electrical & Computer Engineering)

**Hutchison, Ainsley** (184)

**Project Title:** Effects of Corin on Epigenetic Change in Metastatic Melanocytes In Vivo: A Study with *Xenopus Laevis* Embryos

**Faculty Mentor:** Laura Lowery (MED Hematology/Oncology)

**Hwangpo, Diane** (17)

**Project Title:** The Effect of Distorted Visual Cues on the Adaptive Size Modification of Clown Anemonefish (*Amphiprion percula*)

**Faculty Mentor:** Pete Buston (CAS Biology)

**Jacimovic, Nadja** (50)

**Project Title:** How Students Learn and Prepare Effectively for Classroom Work in Chemistry: Assessing the Utility of Question-Embedded Videos

**Faculty Mentor:** Binyomin Abrams (CAS Chemistry)

**Jain, Arkash** (Electronic Poster)

**Project Title:** Ultrafast Two-Dimensional Spectroscopy (2DIR) in Super Critical Fluids: Energy Relaxation and critical Slowing Effects

**Faculty Mentor:** Lawrence Ziegler (CAS Chemistry)

**Janke, Taylor** (237)

**Project Title:** Developing an Origami Soft Robotic Needle Deployment Mechanism for Endoscopic Procedures

**Faculty Mentor:** Sheila Russo (ENG Mechanical Engineering)

**Ji, Chelsea** (185)

**Project Title:** Exploratory Factor Analysis of the Revised ADHD Stigma Questionnaire Among Parents of Children in Primary Care

**Faculty Mentor:** Andrea Spencer (MED Psychiatry)

**Jurgensen, JohnMichael** (127)

**Project Title:** Longitudinally Modeling the Predictors of Political Propaganda Valence in the US: 1800-2000

**Faculty Mentor:** Laurence Breiner (CAS English)

**Kamoona, Jude** (Electronic Poster)

**Project Title:** Microfluidics Reimplemented

**Faculty Mentor:** Radhakrishna Sanka (ENG Engineering)

**Kao, Brandon** (238)

**Project Title:** The Role of Glucose in Tendon Explant Health

**Faculty Mentor:** Brianne Connizzo (ENG Biomedical Engineering)

**Kaufmann, Marine** (84)

**Project Title:** Affective Auditory Stimuli and its influence on the Pupil

**Faculty Mentor:** Sam Ling (CAS Psychological & Brain Sciences)

**Khoudary, Anthony** (18)

**Project Title:** Investigating the Temporal Specificity of Sequence Learning through Predictive Coding

**Faculty Mentor:** Jeffrey Gavornik (CAS Biology)

**Kilcawley, Shana** (152)

**Project Title:** Examining the Effects of Parent-Child Interactions during Storybook Reading on Language Delay

**Faculty Mentor:** Jennifer Zuk (SAR Speech, Language, & Hearing Sciences)

**Kim, Connor** (186)

**Project Title:** Quantification of Cellular and Non Cellular Components of Arteriovenous Fistula Explants

**Faculty Mentor:** Vipul Chitalia (MED Medicine)

**Kim, Dain** (51)

**Project Title:** Empirical Algorithm Development and Validation of CDOM Absorption in Coastal Waters Along the Terrebonne Bay

**Faculty Mentor:** Cedric Fichot (CAS Earth & Environment)

**Kim, Sophia** (128)

**Project Title:** Defending Intersectionality: Aemilia Lanyer, Emilia, and White Feminism

**Faculty Mentor:** Erin Murphy (CAS English)

**King, Simon** (85)

**Project Title:** Teacher Happiness: Examining and Measuring Emotional Labor in Education

**Faculty Mentor:** Elizabeth Bettini (Wheelock Special Education)

**Klein, Piers** (187)

**Project Title:** The Marburgvirus Genome Does Not Follow the Rule of Six

**Faculty Mentor:** Rachel Fearn (MED Microbiology)

**Knox, Carlton** (239)

**Project Title:** Machine Learning Based Hot Spot Prediction on Processor Chips

**Faculty Mentor:** Ayse Coskun (ENG Electrical & Computer Engineering)

**Kolaghassi, Rashid** (240)

**Project Title:** Development of Molten Salt Flux for Solar-grade Silicon Production

**Faculty Mentor:** Uday Pal (ENG Mechanical Engineering)

**Kondratyev, Ivan** (86)

**Project Title:** Investigating the Compartmentalization of Hippocampal DG Spatial Memory Engrams

**Faculty Mentor:** Michael Hasselmo (CAS Psychological & Brain Sciences)

**Kostina, Elizabeth** (87)

**Project Title:** Spatial Linguistics: Movement as Morphology, Structuralist Syntax, and the Oratory Ornament

**Faculty Mentor:** Japonica Brown-Saracino (CAS Sociology)

**Kozlov, Nika** (188)

**Project Title:** Investigating SR-18292 and ZLN005 as Fetal Hemoglobin Coactivators for their Potential as Sickle Cell Anemia Therapies

**Faculty Mentor:** Shuaiying Cui (MED Medical Oncology and Hematology)

**Krishna Kumar, Meera** (88)

**Project Title:** Electroconvulsive Therapy: Family Member Experiences

**Faculty Mentor:** Martha Thompson (CAS Psychological & Brain Sciences)

**Kunkel-Smith, Noah** (129)

**Project Title:** The Development and Impact of Popular Education in Early Modern Germany

**Faculty Mentor:** Phillip Haberkern (CAS History)

**Lane, Ryan** (19)

**Project Title:** Comprehensive Yeast Based Screen of Heterodimer DNA Binding

**Faculty Mentor:** Juan Fuxman Bass (CAS Biology)

**Laudon, Aksel** (189)

**Project Title:** Parvin-ILK-PINCH (PIP) Protein Complex is Essential for Normal Kidney Podocyte Adhesion

**Faculty Mentor:** Weining Lu (MED Medicine)



**Le, Teresa** (Electronic Poster)

**Project Title:** Effect of Chronic Social Defeat Stress on the PACAP System

**Faculty Mentor:** Pietro Cottone (MED Pharmacology)

**Lee, Harin** (241)

**Project Title:** Soft-Robotic Fiber Jamming Mechanism for Variable Stiffness in Catheter Applications

**Faculty Mentor:** Sheila Russo (ENG Mechanical Engineering)

**Lee, Pearl** (190)

**Project Title:** Clinico-radiographic Predictors of Progression in Benign Lung Nodules Found on Screening CT Scans

**Faculty Mentor:** Kei Suzuki (MED Surgery)

**Leung, Ying Hei** (130)

**Project Title:** The Perceptions of and Participation in Policy Among Boston Music Educators

**Faculty Mentor:** Kelly Bylica (CFA Music Education)

**Li, Brandon** (191)

**Project Title:** Application of Telemedicine Consultations for Chronic Pulmonary Disease: A Scoping Review

**Faculty Mentor:** Seppo Rinne (MED Medicine, Pulmonology)

**Li, Man** (20)

**Project Title:** Temperature Regulation of Anti-herbivory Defense Compounds in *Arabidopsis thaliana*

**Faculty Mentor:** John Celenza (CAS Biology)

**Li, Yuke** (242)

**Project Title:** Screening of Genomic Loci in Natural Isolates of *D. discoideum* for Targeted Integration Sites

**Faculty Mentor:** Allyson Sgro (ENG Biomedical Engineering)

**Liao, Sarah** (153)

**Project Title:** Effect of Gradually Reduced Portion Size Estimation Training on Portion Size Estimation Accuracy and Plausibility of Reported Energy Intake from a Web-Based Food Diary

**Faculty Mentor:** Megan McCrory (SAR Health Sciences)

**Lim, Zi Heng** (243)

**Project Title:** Development of Fully Soft Robot Stabilization System for Minimally Invasive Intracardiac Surgery

**Faculty Mentor:** Tommaso Ranzani (ENG Mechanical Engineering)

**Lin, Ben** (192)

**Project Title:** Role of Neutrophil Elastase (NE) on Autophagy Activities in Mouse Livers

**Faculty Mentor:** Zhen Jiang (MED Pharmacology)

**Lin, Mable** (21)

**Project Title:** Studying Mouse Monocular Visual Cortex Potentiation with C-fos Immediate Early Gene Expression in Response to Monocular Visual Sequence Stimulation

**Faculty Mentor:** Jeff Gavornik (CAS Biology)

**Liu, Amber** (193)

**Project Title:** Characterizing the Role of Aortic Carboxypeptidase-like Protein in Connective Tissue Disease

**Faculty Mentor:** Matthew Layne (MED Biochemistry)

**Liu, Jieyu** (131)

**Project Title:** Comparing the Construction and Maintenance of Religious Worlds and Video Game Worlds

**Faculty Mentor:** April Hughes (CAS Religion)

**Liu, Timothy** (194)

**Project Title:** Use of Electron Microscopy to Characterize A -PrPC Assembly's Structures

**Faculty Mentor:** David Harris (MED Biochemistry)

**Lohse, Max** (195)

**Project Title:** Creation of a Conditional hnRNPUL1 Knock-out in Human Cell Culture Using CRISPR/Cas9

**Faculty Mentor:** Michael Blower (MED Biochemistry)

**Love, Mattie** (89)

**Project Title:** Using Automated Activity Monitoring to Detect Preference in *Drosophila*

**Faculty Mentor:** Kyle Gobrogge (CAS Neuroscience)

**Lu, James** (196)

**Project Title:** The Effect of the Hippo Pathway on Multiciliated Cells in the Airway Epithelium

**Faculty Mentor:** Xaralabos Varelas (MED Biochemistry)

**Lu, Zhangchi** (Electronic Poster)

**Project Title:** Automatic Inter-Person Distance Measurement using Overhead Fisheye Cameras

**Faculty Mentor:** Janusz Konrad (ENG Electrical & Computer Engineering)

**MacVeagh, Lincoln** (132)

**Project Title:** Constructing the Religious Other: Space and Spatial Practice in Medieval Christian-Muslim travel narratives

**Faculty Mentor:** Deana Klepper (CAS History; Religion)

**Madsen Hardy, Ione** (154)

**Project Title:** Building Prosodic Proles for Pediatric Autism Spectrum Disorder and Developmental Language Disorder

**Faculty Mentor:** Jennifer Zuk (SAR Speech, Language, and Hearing Sciences)

**Mahan, Lydia** (155)

**Project Title:** Analysis of the Utilization of Intervention Foods as Nutritional Supplementation in the TB-LION Study

**Faculty Mentor:** Lindsey Locks (SAR Health Sciences)

**Malekan, Deborah** (156)

**Project Title:** Resistance to Frailty: Investigating Evidence of Osteoarthritis in a Mouse Model of Longevity

**Faculty Mentor:** LaDora Thompson (SAR Physical Therapy & Athletic Training)

**Malkin, David** (133)

**Project Title:** A Cultural History of the American Strip Mall

**Faculty Mentor:** Andrew Robichaud (CAS History)

**Man, Alexi** (90)

**Project Title:** Disciplinary Talk and Spatial Talk Analysis in Urban Head Start Preschool Classrooms

**Faculty Mentor:** Stephanie Curenton (Wheelock Education Leadership & Policy Studies; Applied Human Development)

**Marrujo, Simone** (22)

**Project Title:** Voltage-Gated Calcium and Potassium Channel Activity are Required for Normal Skeletal Patterning in *Lytechinus variegatus*

**Faculty Mentor:** Cynthia Bradham (CAS Biology)

**Martin, Rachel** (157)

**Project Title:** Racial Disparities in Child Exposure to Neighborhood Firearm Violence Before and During the COVID-19 Pandemic

**Faculty Mentor:** Jonathan Jay (SPH Community Health Sciences)

**Martinez, Catalina** (23)

**Project Title:** Localizing Muscarinic Receptors Involved in Sequence Learning in Mouse V1

**Faculty Mentor:** Jeffrey Gavornik (CAS Biology)

**Mascarello, Alexandra** (134)

**Project Title:** In Defense of the Humanities: A Play

**Faculty Mentor:** Kyna Hamill (CAS Core)

**Mazumder, Miguel** (197)

**Project Title:** Microbial and Somatic Mutation Biomarkers in Male Prostate Cancer Inflammation

**Faculty Mentor:** William Johnson (MED Medicine: Computational Biomedicine)

**McCutcheon, Kelley** (24)

**Project Title:** PFAS Compounds are Teratogenic in Sea Urchin Embryos

**Faculty Mentor:** Cynthia Bradham (CAS Biology)

**McDonald, Riley** (25)

**Project Title:** The Effect of 4-AP on Action Potential and Synaptic Potential in the Crayfish Neuromuscular Junction

**Faculty Mentor:** Jen Wei Lin (CAS Biology)

**Meara, Grace** (198)

**Project Title:** Exploring the Effect of a Chemokine on MYCN Amplification Neuroblastoma

**Faculty Mentor:** Hui Feng (MED Pharmacology & Experimental Therapeutics)

**Medeiros, Gianna** (199)

**Project Title:** Determining The Effects of Chronic Intermittent Alcohol Drinking on the Levels of the Neuropeptide PACAP in the BNST

**Faculty Mentor:** Valentina Sabino (MED Pharmacology)

**Melsheimer, Trevor** (244)

**Project Title:** Modeling the Effect of Pulse Plating Protocols on Dendrite Growth in Li Metal Batteries

**Faculty Mentor:** Emily Ryan (ENG Mechanical Engineering)

**Menchaca, August** (52)

**Project Title:** Surveying Past Participants to Assess the Long-Term Impact of Project Accelerate

**Faculty Mentor:** Andrew Duffy (CAS Physics)

**Mikhail, Moriah** (135)

**Project Title:** Gender and Nationalism in Palestinian Resistance Literature

**Faculty Mentor:** Margaret Litvin (CAS World Languages & Literatures)

**Mikolaitis, Jayna** (136)

**Project Title:** Weaving as Metaphor: An Arts Investigation of Female Labor, Memory Retention, and Storytelling through the Fiber Arts

**Faculty Mentor:** Felice Amato (CFA Art Education)

**Milgrim, Kira** (53)

**Project Title:** Seeing the Forest AND the Trees: Computer Vision and Machine Learning Applied to Unmanned Aerial Vehicle Imagery at Harvard Forest

**Faculty Mentor:** Mark Friedl (CAS Earth & Environment)

**Miller, John** (91)

**Project Title:** Understanding the Influence of the Gut Microbiome on Serotonin via the Gut-Brain Axis

**Faculty Mentor:** Kyle Gobrogge (CAS Neuroscience)

**Minarik, Gillian** (54)

**Project Title:** Toward Controllable and Scalable Synthesis of 2D Ni(OH)<sub>2</sub> with Large Domains via the Hydrothermal Method

**Faculty Mentor:** Xi Ling (CAS Chemistry)

**Morrison, Cristina** (92)

**Project Title:** Onwards and Underground: Nuclear Waste Storage and Community Consent at New Mexico's Waste Isolation Pilot Plant (WIPP)

**Faculty Mentor:** Jayita Sarkar (Frederick S. Pardee School of Global Studies)

**Mullens, Isabel** (93)

**Project Title:** Supporting Students with Learning and Attention Issues During COVID-19: Insights from General Educators

**Faculty Mentor:** Jonathan Zaff (Wheelock Applied Human Development)

**Munsiff, Leela** (137)

**Project Title:** Multilingualism in Limol, Papua New Guinea

**Faculty Mentor:** Kate Lindsey (CAS Linguistics)

**Murillo, Homar** (200)

**Project Title:** Facilitators and Barriers of Youth Advisory Boards in Healthcare

**Faculty Mentor:** Astraea Augsburg (MED Clinical Practice)

**Murray, Liam** (245)

**Project Title:** Increasing 3DuF Microfluidics Design Potential

**Faculty Mentor:** Radhakrishna Sanka (ENG Electrical & Computer Engineering)

**Negassa, Abgel** (158)

**Project Title:** Building response capacity to extreme heat exposure in Chelsea and East Boston through Participatory Action Research

**Faculty Mentor:** Madeleine Scammell (SPH Environmental Health)

**Newell, Carly** (26)

**Project Title:** The Role of Nrp1 on Osteocyte Function

**Faculty Mentor:** Paola Divieti Pajevic (SDM Biology)

**Ngo, Julie** (159)

**Project Title:** Density of Inhibitory Populations of Neurons In First and High Order Thalamic Nuclei (LGN and MD) in Neurotypical Primate Brains

**Faculty Mentor:** Basilis Zikopoulos (SAR Health Sciences)

**Nguyen, Nicole** (201)

**Project Title:** Optimal Concentrations of Deoxycytidine Analog Decitabine that Maximize Fetal Hemoglobin Expression and Cell Vitality

**Faculty Mentor:** Shuaiying Cui (MED Medicine)

**Novakovic, Alexander** (218)

**Project Title:** A Topological and Non-Euclidean Dynamic Model of Biological Membranes and Viral Infection

**Faculty Mentor:** Emma Previate (CAS Mathematics)

**O'Brien, Annalie** (160)

**Project Title:** Designing, Pretesting and Finalizing of the REDCap Database for the A-PLUS Growth & Microbiome Study

**Faculty Mentor:** Lindsey Locks (SAR Health Sciences)

**Obenreder, Mackenzie** (246)

**Project Title:** How Obesity Affects Human Breast Cancer Cell Invasion and Escape in a 3D Microfluidic Model

**Faculty Mentor:** Joe Tien (ENG Biomedical Engineering)

**Olsen, Christopher** (27)

**Project Title:** KHK Inhibition as a Potential Therapeutic Target for Type 2 Diabetes Mellitus

**Faculty Mentor:** Dean Tolan (CAS Biology)

**Onipede, Yeshim** (94)

**Project Title:** Precommitment: Exploring the Effect of Volatility in a Decision Environment

**Faculty Mentor:** Joseph McGuire (CAS Psychological & Brain Sciences)

**Osipovich, Maria** (138)

**Project Title:** Abridged Versions of Don Quixote: A Study

**Faculty Mentor:** James Iffland (CAS Romance studies)

**Osman, Sarah** (28)

**Project Title:** The Effect of Tryptophan Metabolism Mutants on Gene Expression in Arabidopsis thaliana

**Faculty Mentor:** John Celenza (CAS Biology)

**Ostrovsky, Nicole** (Electronic Poster)

**Project Title:** Engineering Peptides and Peptidomimetics to Interfere at the SARS-CoV-2 Spike Protein-ACE2 Interface

**Faculty Mentor:** Diane Joseph-McCarthy (ENG Biomedical Engineering)

**Ouyang, Beining** (247)

**Project Title:** Improving the user interface of 3D $\mu$ F, an Interactive Design Environment for Continuous Flow Microfluidic Devices

**Faculty Mentor:** Radhakrishna Sanka (ENG Electrical & Computer Engineering)

**Panchmatia, Ashna** (202)

**Project Title:** The Efficiency of ERG in Lymphatic Endothelial Cells that Induces Lung and Heart Fibrosis

**Faculty Mentor:** Maria Trojanowska (MED Rheumatology)

**Panetta, Eli** (95)

**Project Title:** Uncertainty Effect in Evaluating Moral Decisions in a Foreign Language

**Faculty Mentor:** Catherine Caldwell-Harris (CAS Psychological & Brain Sciences)

**Pang, Yanni** (248)

**Project Title:** MicroFaaS: Bare Metal Serverless on Single-board Computers

**Faculty Mentor:** Ayse Coskun (ENG Electrical & Computer Engineering)

**Paredes, Christian** (161)

**Project Title:** "I wish I actually had known what the heck sex was:" A Mixed Methods Analysis of What Adolescent Sexual Minority Males Wish They Knew Prior to their Sexual Debut with a Male Partner

**Faculty Mentor:** Kimberly Nelson (SPH Community Health Sciences)

**Park, Christopher** (55)

**Project Title:** Expression and Purification of Proteins to Interact with the CIA targeting complex

**Faculty Mentor:** Deborah Perlstein (CAS Chemistry)

**Park, Elaine** (203)

**Project Title:** Reconstitution of RNAi in Zebrafish

**Faculty Mentor:** Daniel Cifuentes (MED Biochemistry)

**Pascuccio, Krizia** (96)

**Project Title:** Female Labor Participation, Crime Rates, and Entrepreneurship

**Faculty Mentor:** Rachel Brule (Frederick S. Pardee School of Global Studies)

**Paul, Eleanor** (204)

**Project Title:** The Interactions of Eukaryotic Translation Initiation Factor eIF5 with eIF4A and eIF2's beta Subunit

**Faculty Mentor:** Assen Marintchev (MED Physiology & Biophysics)

**Peart, Jada** (29)

**Project Title:** Analysis of Gene Activation by a Protist Nuclear Factor B (NF- B) Transcription Factor

**Faculty Mentor:** Tom Gilmore (CAS Biology)

**Peng, Yulu** (Electronic Poster)

**Project Title:** Statistical Properties of Chorus-induced Electron Bursts with Butterfly Distributions Observed by Van Allen Probes

**Faculty Mentor:** Wen Li (CAS Astronomy)

**Pfaff, Amelia** (56)

**Project Title:** Understanding the Mechanism of NEMO Dimerization

**Faculty Mentor:** Adrian Whitty (CAS Chemistry)

**Phillips, Jensine** (97)

**Project Title:** How a Lesson on Earth's History Impacts Judgments about Environmental Transgressions

**Faculty Mentor:** Deborah Kelemen (CAS Psychological & Brain Sciences)

**Phillips, Maxine** (57)

**Project Title:** Continued Development of System Tests for the CMS Endcap Timing Layer Detector

**Faculty Mentor:** Indara Suarez (CAS Physics)

**Pickering, Alexis** (98)

**Project Title:** Developing Pedagogical Approaches for Facilitating Active Learning in Remote Engineering Laboratories

**Faculty Mentor:** Kathleen Corriveau (Wheelock Applied Human Development)

**Pickering, Sydney** (99)

**Project Title:** Gender and Professional Military Education (PME) in the United States: A Case Study of the Naval War College

**Faculty Mentor:** Sandra McEvoy (CAS Political Science)

**Pinto, Felicia** (249)

**Project Title:** The Role of Glutamine Supplementation in Protein Synthesis of Murine Tendon Explants

**Faculty Mentor:** Brianne Connizzo (ENG Biomedical Engineering)

**Pintor-Hoffmann, Lucia** (100)

**Project Title:** Qualitative Approach in Investigating Parental Autonomy Supportive Behavior and Child Engagement

**Faculty Mentor:** Kathleen Corriveau (Wheelock Applied Human Development)

**Pollak, Benjamin** (58)

**Project Title:** Optimization of Expression and Purification of Human Adenosine Kinase in BL21 E. coli for X-ray Crystallographic and Inhibition Studies with Kethoxinase Inhibitors

**Faculty Mentor:** Karen Allen (CAS Chemistry)

**Pompa, Isabella** (205)

**Project Title:** Plasma Exosomes Drive Prostate Cancer Progression in Men with Co-morbid Metabolic Disease

**Faculty Mentor:** Gerald Denis (MED Hematology/Oncology)

**Prabhu, Meha** (206)

**Project Title:** The Clinical Application of Digital Technology in Alzheimer's Disease Dementia

**Faculty Mentor:** Rhoda Au (MED Anatomy & Neurobiology)

**Price, Eliza** (162)

**Project Title:** Registered Dietitian/Nutritionists (RDNs) in Intensive Outpatient Program (IOP) Treatment for Eating Disorders

**Faculty Mentor:** Paula Quatromoni (SAR Health Sciences)

**Qi, Estelle** (59)

**Project Title:** Structural Determination of Enzymes PglA and PglC from Campylobacter Concisus

**Faculty Mentor:** Karen Allen (CAS Chemistry)

**Raiff, Laura** (163)

**Project Title:** The Impact of Remote Communication on Relative Fundamental Frequency

**Faculty Mentor:** Cara Stepp (SAR Speech, Language, and Hearing Sciences)

**Rajeh, Sahrah** (30)

**Project Title:** Purification of Fructose 1,6-Bisphosphate Aldolase from *Saccharomyces Cerevisiae* for Use in an Assay to Measure Fructose 1-phosphate Levels In Vitro

**Faculty Mentor:** Dean Tolan (CAS Biology)

**Rakoczy, Maya** (164)

**Project Title:** Density of Parvalbumin, Calbindin, and Calretinin Inhibitory Neurons in Subgenual Cingulate Area 25 of the Neurotypical Human

**Faculty Mentor:** Helen Barbas (SAR Health Sciences)

**Reiter, Harrison** (60)

**Project Title:** Sequence and Truncation Effects on the Population of Aggregation-Prone States on the Evolutionarily Conserved Lipid Scavenger Protein, Serum Amyloid A

**Faculty Mentor:** John Straub (CAS Chemistry)

**Reynolds, Leanna** (101)

**Project Title:** Strength of Aversive and Appetitive Associations and Maladaptive Behaviors

**Faculty Mentor:** Steve Ramirez (CAS Psychological & Brain Sciences)

**Richter, Sarah** (102)

**Project Title:** Hypergamy in America

**Faculty Mentor:** Erika Wells (CAS Psychological & Brain Sciences)

**Riese, Gabrielle** (Electronic Poster)

**Project Title:** Framing and its Uses in a Second Grade Science Investigation

**Faculty Mentor:** Eve Manz (Wheelock Science Education)

**Roberts, James** (Electronic Poster)

**Project Title:** Developing an Annotation Scheme for Referring Expressions

**Faculty Mentor:** Elizabeth Coppock (CAS Linguistics)

**Rodriguez, Gisela** (139)

**Project Title:** Puente: The Development of an International Latin American Theatre Conference.

**Faculty Mentor:** Kristin Leahy (CFA School of Theatre)

**Rowe, Nicholas** (140)

**Project Title:** Documenting and Illustrating New Findings on the Mughal Gardens of Kashmir, India

**Faculty Mentor:** Jan Haenraets (CAS Preservation Studies)

**Ruan, Xiangzhe** (250)

**Project Title:** 3DuF Feature and Algorithm Implementation

**Faculty Mentor:** Radhakrishna Sanka (ENG Electrical & Computer Engineering)

**Russell, Kelsey** (103)

**Project Title:** Women of Color Party Too

**Faculty Mentor:** Sadia Grundy (CAS Sociology)



**Russo, Lily** (104)

**Project Title:** Online Professional Development to Assess and Improve Teachers' Comprehension of Natural Selection

**Faculty Mentor:** Deborah Kelemen (CAS Psychological & Brain Sciences)

**Rustom, Faris** (105)

**Project Title:** Applying Animal Camouflage Training to Enhance Neural Network Detection of Brain Tumors from Imaging Data

**Faculty Mentor:** Arash Yazdanbakhsh (CAS Neuroscience)

**Saab, Anthony** (251)

**Project Title:** Improvement of the Power Supply unit for Electrodynamic Screen (EDS) film and Development of Electric Field Monitoring Methods for monitoring the EDS film's Performance for Self-cleaning Solar Panels

**Faculty Mentor:** Malay Mazumder (ENG Electrical and Computer Engineering)

**Sadler, Justin** (252)

**Project Title:** Pythia: An Automated, Cross-Layer Instrumentation Framework for Diagnosing Performance Problems in Distributed Application

**Faculty Mentor:** Ayse Coskun (ENG Electrical & Computer Engineering)

**Salame, Cedric** (61)

**Project Title:** Molecular Simulation of Ionic Liquids: From Molecular Interactions to Transport Properties

**Faculty Mentor:** David Coker (CAS Chemistry)

**Santos, Ana** (106)

**Project Title:** Working Conditions and Instructional Decision Making in Classrooms for Students with Emotional and Behavioral Disabilities (EBD)

**Faculty Mentor:** Elizabeth Bettini (Wheelock Teaching and Learning)

**Sarpong, Afua** (31)

**Project Title:** Using Amplification-Refractory Mutation System-PCR to Discern Rising Frequency of Hereditary Fructose Intolerant Mutations

**Faculty Mentor:** Dean Tolan (CAS Biology)

**Sen, Riya** (253)

**Project Title:** Formulation of Trehalose Based Nanoparticles for Therapeutic Protein Delivery

**Faculty Mentor:** Timothy O'Shea (ENG BME)

**Sena, Katherine** (207)

**Project Title:** A Mouse model for Neonatal Opioid Withdrawal Syndrome (NOWS) induces Brain Region-specific Changes in Proteins Associated with Microglial Activation (IBA1) and Myelin Protein Expression (MBP)

**Faculty Mentor:** Camron Bryant (MED Pharmacology)

**Serafini, Angelina** (32)

**Project Title:** Probing the Effects of Habitat Geometry on *Bacillus Subtilis* Swarming Morphology

**Faculty Mentor:** Joe Larkin (CAS Biology)

**Sgrizzi, Samantha** (165)

**Project Title:** Investigating the Role of the Calponin-1 Isoform in Aortic Smooth Muscle Contractility and Signal Transduction Scaffolding in CNNI Knockout Mice

**Faculty Mentor:** Kathleen Morgan (SAR Health Sciences)

**Shah, Shashwat** (254)

**Project Title:** Development of a Behavioral Task Measuring Functional Activation Post-Stroke to Track Behavioral Recovery

**Faculty Mentor:** David Boas (ENG Biomedical Engineering)

**Shanabrook, Kristin** (208)

**Project Title:** Leveraging the Framingham Study to Investigate Relationships between Traumatic Brain Injury, Alzheimer's Disease and Related Dementias

**Faculty Mentor:** Jesse Mez (MED Neurology)

**Shekhar, Medha** (255)

**Project Title:** Characterization of Cell Death in Injured Heart Tissues

**Faculty Mentor:** Christopher Chen (ENG Biomedical Engineering)

**Shen, Vivian** (33)

**Project Title:** Uncovering Inhibitory Viral Mechanisms of Interferon Signaling

**Faculty Mentor:** Juan Fuxman Bass (CAS Biology)

**Shterenberg, Joshua** (256)

**Project Title:** Anomaly Detection and Diagnosis in High Performance Computing Systems via Semi-Supervised Machine Learning

**Faculty Mentor:** Ayse Coskun (ENG ECE)

**Silfen, Zachary** (257)

**Project Title:** In Silico Prototyping for Intranasally-Administered Agents for COVID-19 and Other Respiratory Pathogens

**Faculty Mentor:** Diane Joseph-McCarthy (ENG Biomedical Engineering)

**Simone, Iris** (62)

**Project Title:** Functionalization of Betulin to Terpene-Separated Amino Acids

**Faculty Mentor:** John Snyder (CAS Chemistry)

**Smith, Blaire** (258)

**Project Title:** Developing a Biologic AND Gate

**Faculty Mentor:** Ahmad Khalil (ENG Biomedical Engineering)

**Smolina, Darya** (259)

**Project Title:** Evaluating the Use of Homomorphic Encryption for CNN-based Inference on MNIST Dataset

**Faculty Mentor:** Ajay Joshi (ENG Electrical & Computer Engineering)

**Song, Angela** (107)

**Project Title:** The Fukushima Disaster: The Management of Radiation, Victims, Public Health, and Global Relations After a Decade from the 2011 Accident

**Faculty Mentor:** Jayita Sarkar (Frederick S. Pardee School of Global Studies)

**Sotiropoulou, Katherine** (34)

**Project Title:** Effects of Pine Encroachment into Hardwood Forests on Fungal Communities and Soil Biogeochemistry

**Faculty Mentor:** Jennifer Bhatnagar (CAS Biology)

**Speranza, Nicholas** (141)

**Project Title:** Socializing Under Siege: Cataloging Relationships in Minnie Vautrin's Nanjing

**Faculty Mentor:** Daryl Ireland (STH Mission)

**Subramanian, Sandya** (260)

**Project Title:** Creating an Anatomical Atlas of Brainstem Cell Types

**Faculty Mentor:** Michael Economo (ENG Biomedical Engineering)

**Summit, Rebecca** (209)

**Project Title:** Attitudes and Practice Patterns in Breastfeeding Counseling in Women with Epilepsy among Neurologists and Obstetricians

**Faculty Mentor:** Abrar AL-Faraj (MED Neurology)

**Surets, Michelle** (108)

**Project Title:** Investigation of Chronic Hyperactivity for the Induction of Neurodegenerative Pathology

**Faculty Mentor:** Steve Ramirez (CAS Psychological & Brain Sciences)

**Swift, William** (166)

**Project Title:** Turn Detection in Post Stroke Walking Using Inertial Measurement Unit

**Faculty Mentor:** Louis Awad (SAR Physical Therapy)

**Tasich, Ksenija** (261)

**Project Title:** Developing a Minimally-Invasive Device that Quantifies Fibrosis and Assesses Chronic Kidney Disease Using Optical Spectroscopy

**Faculty Mentor:** Ousama Aamar (ENG Biomedical Engineering)

**Thakar, Bhargavi** (109)

**Project Title:** Perkins Automation Project

**Faculty Mentor:** Philip Muirhead (CAS Astronomy)

**Thaniana, Anusha** (35)

**Project Title:** Expression of a Library of Proteins Encoded by the Sars-Cov-2 Coronavirus

**Faculty Mentor:** Tom Gilmore (CAS Biology)

**Tharani, Yashasvi** (210)

**Project Title:** Effects of Fli 1 Downregulation on THP1 Migration

**Faculty Mentor:** Andreea Bujor (MED Rheumatology)

**Ting, Dayi** (142)

**Project Title:** China Historical Christian Database, Mapping Christianity in China, 1550-1950

**Faculty Mentor:** Daryl Ireland (STH Mission)

**Torres, Daniela** (63)

**Project Title:** Improving Student Learning by Embedding Questions and Feedback in Video Resources

**Faculty Mentor:** Binyomin Abrams (CAS Chemistry)

**Trachtenberg, Benyamin** (Electronic Poster)

**Project Title:** Two-Temperature Model for Femtosecond Laser Ablation of Graphene

**Faculty Mentor:** Michelle Sander (ENG Electrical & Computer Engineering)

**Tran, Kimberly** (36)

**Project Title:** Investigating the Effects of Zaire Ebola Virus Transcription Factors on Host Chromatin Structure

**Faculty Mentor:** Juan Fuxman Bass (CAS Biology)

**Truong, Emily** (211)

**Project Title:** VEGFA Promotes Cholangiocyte-driven Liver Regeneration in a Chronic Liver Injury Mouse Model

**Faculty Mentor:** Valerie Gouon-Evans (MED Medicine)

**Unni, Prasida** (212)

**Project Title:** In silico and Behavioral Analyses of CSNK2A1 Variants related to Okur-Chung Neurodevelopmental Syndrome

**Faculty Mentor:** Maria Isabel Dominguez (MED Hematology/Oncology)

**Vachani, Venika** (64)

**Project Title:** Using Computer Simulations To Model Viruses

**Faculty Mentor:** Erramilli Shyam (CAS Physics)

**VanWyngarden, Madison** (110)

**Project Title:** Identification of 63 New Pulsating White Dwarf Stars with TESS

**Faculty Mentor:** JJ Hermes (CAS Astronomy)

**Voetsch, C. Priya** (111)

**Project Title:** Providing Quality Career Programming in Elementary Schools: What Does it Take to Do it Well?

**Faculty Mentor:** Kimberly Howard (Wheelock Counseling Psychology & Applied Human Development)

**Walia, Anika** (219)

**Project Title:** Clinical Validation of a Deep-Learning Based Model To Predict Lung Cancer Risk from Chest X-Rays

**Faculty Mentor:** Vineet Raghu (MET Computer Science)

**Wang, Jiayi** (143)

**Project Title:** Hyakunin Isshu: Learning the Hundred Classical Japanese Poems with Maps

**Faculty Mentor:** Sarah Frederick (CAS Japanese and Comparative Literature)

**Washington, Rakiya** (112)

**Project Title:** Exploring the Logical Strategies Children Use to Remember Hidden Objects

**Faculty Mentor:** Melissa Kibbe (CAS Psychological & Brain Sciences)

**Watkins, Luisa** (262)

**Project Title:** Mitigating Current Variation in Particle Beam Microscopy

**Faculty Mentor:** Vivek Goyal (ENG Electrical & Computer Engineering)

**Watts, Cheyenne** (213)

**Project Title:** The Relationship Between Perceived Social Discrimination and Amygdala to Hippocampus Ratio Volume in Older Adults

**Faculty Mentor:** Karin Schon (MED Anatomy & Neurobiology)

**Welter, Carrie** (144)

**Project Title:** Reconstructing the Past in Stephen Sondheim and John Weidman's "Assassins" and "Pacific Overtures"

**Faculty Mentor:** Phillip Haberkern (CAS History)

**Xie, Ziwen** (Electronic Poster)

**Project Title:** Engineering Small Molecules and Peptides that Bind to SARS-CoV-2 Spike Protein in Closed Form

**Faculty Mentor:** Diane Joseph-McCarthy (ENG Biomedical Engineering)

**Xu, Kailin** (167)

**Project Title:** Understanding Clinical Settings for Cervical Cancer Screening and HPV Vaccination in the U.S.

**Faculty Mentor:** Eleanor Murray (SPH Epidemiology)

**Yakumithis, Sophia** (145)

**Project Title:** Establishing Prestige: Holland's Golden Age in the Modern American Museum

**Faculty Mentor:** Charles Dellheim (CAS History)

**Yamin, Nikka** (113)

**Project Title:** The Direct and Interactive Effects of Identity Centrality and Community Connectedness on Mental Health Among LGBTQ+ people

**Faculty Mentor:** Anthony Rosellini (CAS Psychological & Brain Sciences)

**Yang, Joanna** (214)

**Project Title:** Effect of Antibiotics Use in Outcomes in Subarachnoid Hemorrhage (SAH) Patients

**Faculty Mentor:** Anna Cervantes-Arslanian (MED Neurology)

**Ye, Jonathan** (263)

**Project Title:** Developing a Pneumatic Soft Robotic Haptic Feedback Glove to Assist Minimally Invasive Surgery

**Faculty Mentor:** Sheila Russo (ENG Mechanical Engineering)

**Ye, Young** (114)

**Project Title:** Assessment of a Manual Tracking Algorithm for Dense Reconstruction of Transgenic Zebra Finch Neurons

**Faculty Mentor:** Ben Scott (CAS Psychological & Brain Sciences)

**Yin, Junze** (220)

**Project Title:** Fractal Analysis of the Urbanization Development in Boston: 2000-2020

**Faculty Mentor:** Emma Previato (CAS Mathematics)

**Yucebas, Defne** (115)

**Project Title:** Associations of Category Fluency Clustering and Switching Performance with in vivo Brain Pathology in Autosomal Dominant Alzheimer's Disease

**Faculty Mentor:** Alice Cronin-Golomb (CAS Psychological and Brain Sciences)

**Zdanowicz, Victoria** (116)

**Project Title:** Fiber Digestibility in Wild Bornean Orangutans: Age-Sex Class Differences and Implications for Slow Juvenile Growth

**Faculty Mentor:** Cheryl Knott (CAS Anthropology)

**Zhai, Jintao** (146)

**Project Title:** The Catholic Missions in Modern Chinese History: Case-Studies based on the U.S. Passionist Archives (1921-1951) and the Maryknoll Archives (1918-1955) for the Boston University China Historical Christian Database (1550-1950)

**Faculty Mentor:** Eugenio Menegon (CAS History)

**Zhang, Tao** (264)

**Project Title:** Investigating Machine Learning-Based Optical Flow Algorithms on a Simulated Beating Heart

**Faculty Mentor:** Emma Lejeune (ENG Mechanical Engineering)

**Zhang, Xiaoyu** (215)

**Project Title:** Improving the Accuracy of Glycan Structural Assignments with Stable Isotope Labeling

**Faculty Mentor:** Catherine E Costello (MED Biochemistry)

**Zheng, Allyson** (216)

**Project Title:** The Effect of SARS-CoV-2 on Heart Muscle Cells: Comparison of Cultured Cardiomyocytes and Serum of COVID-19 Patients

**Faculty Mentor:** James Hamilton (MED Physiology and Biophysics)

**Zheng, Minglan** (265)

**Project Title:** X-World: Accessibility, Vision, and Autonomy Meet

**Faculty Mentor:** Eshed Ohn-Bar (END Electrical & Computer Engineering)

**Zhou, Brian** (266)

**Project Title:** Comparing Spo0A Activity Level in B. Subtilis Using Fluorescent Reporters

**Faculty Mentor:** Allyson Sgro (ENG Biomedical Engineering)

**Zhou Peng, Hui Cong (Kreiver)** (267)

**Project Title:** Measurement of Thin SiO<sub>2</sub> Films on IRIS Chips Using Color Images

**Faculty Mentor:** Selim Unlu (ENG Electrical & Computer Engineering)

# Get Involved!

## How to Apply to UROP:

**Step 1: Find a research mentor in your field of interest**

**Step 2: Select or Propose a Project**

Contribute to your mentor's existing projects or design your own!

**Step 3: Complete UROP's online application**

- Contact UROP team to schedule an application review.
- Follow up with your mentor to confirm that they have sent in your letter of recommendation.

**Step 4: Receive funds to research!**

## What Awards does UROP Offer?

**Student Research Award (SRA)  
or Faculty Matching Grant (FMG)**

UROP funds students to conduct research with a BU faculty member for a given semester.

**Supplies Award**

We fund the purchase of supplies for student research projects.

**Travel Award**

UROP supports students who present at conferences or conducting off-site research.

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