# Fall 2021 Award Recipients

## College of Arts & Sciences

**Adams, Nick**
Measuring Cosmic Muons with NIM+ v5 and Hexaboard
Faculty Mentor: Lawrence Sulak (Physics)

**Alafriz, Kristen**
Investigation of Visuo-Haptic Aftereffects and Integration of Curved Lines & Surfaces
Faculty Mentor: Arash Yazdanbakhsh (Psychological & Brain Sciences)

**Alvarado, Douglas**
An Investigation of Genetic Mechanisms Underlying Strategic Growth in the Clown Anemonefish Amphiprion percula
Faculty Mentor: Peter Buston (Biology)

**Amin, Vibhuti**
Determining the Impact of Tethering on Inhibitor Binding through Kinetic Studies of BoNT/A-LC
Faculty Mentor: Karen Allen (Chemistry)

**Andrews, Kendall**
How does children's respiratory sinus arrythmia dynamically change over the course of an emotional movie clip and what does this say about child emotional regulation?
Faculty Mentor: Nicholas Wagner (Psychological & Brain Sciences)

**Bashiru, Mariam**
The Role of Nature in Facilitating Resilience and Well-being in Black Women Cancer Patients
Faculty Mentor: Brenda Phillips (Psychological & Brain Sciences)

**Bauer, Alexis**
Analysis of the Eradication of Smallpox in Africa: Epidemiological and Historical Lessons to be Learned from the Deadliest Disease prior to the 21st Century
Faculty Mentor: James McCann (History)

**Beatty, Charlotte**
Protective Paternalism and Masculine Justice in the Boston Anti-Abortion Movement
Faculty Mentor: Merav Shohet (Anthropology)

**Berard, Brennon**
Characterization of Neuritogenesis by RET-mediated Signaling Dynamics in Differentiating Neuroblastoma Cells
Faculty Mentor: Adrian Whitty (Chemistry)

Bolshakova, Sonia
Disparities in Global Schizophrenia Diagnoses
Faculty Mentor: Carolyn Hodges-Simeon (Anthropology)

Bronson, Hayden
Measurement of top-W scattering in CMS
Faculty Mentor: Indara Suarez (Physics)

Candelario, Kimberly
Investigating Adaptive Divergence in the Temperate Coral Astrangia poculata
Faculty Mentor: Sarah Davies (Biology)

Carty, Marissa
Self-Compassion and Self-Esteem Journaling as an Intervention to Reduce Loneliness
Faculty Mentor: Brenda Phillips (Psychological & Brain Sciences)

Chen, Angela
Identifying Novel Drug-like Inhibitors of the KEAP1-Nrf2 Protein-Protein Interaction
Faculty Mentor: Adrian Whitty (Chemistry)

Chen, Cici
A Neural Model Approach to Neuroanatomical and Neurobiological Changes in Alzheimer's Disease that Result in Visual Perception Changes Related to Spatio-Temporal Integration
Faculty Mentor: Arash Yazdanbakhsh (Psychological & Brain Sciences)

Chiulli, Nicole
The Role of Reward Maximization in Interval Timing Tasks
Faculty Mentor: Ben Scott (Psychological & Brain Sciences)

Choksi, Shania
Mapping of Ancient Hindu Sites and Mughal Roads of Kashmir, India, and the Use of Hindi on Historical Images of Kashmiri Sacred Sites
Faculty Mentor: Jan Haenraets (American & New England Studies)

Chon, Ryan
Towards the Reconstruction of the Consonantal Phonemic Inventory of Proto-Pahoturi
Faculty Mentor: Kate Lindsey (Linguistics)

Curiel, Keiddy
Effects of Climate Change Across Seasons on Soil Carbon and Nitrogen in a Northern Hardwood Forest
Faculty Mentor: Pamela Templer (Biology)

Currie, Lincoln
A Narrative Chronology of English-language Translations, Adaptations, and Performances of Amor de don Perlimplín con Belisa en su jardín by Federico García Lorca
Faculty Mentor: Christopher Maurer (Romance Studies (Spanish))

De Laney, Maura
Faculty and Student Perceptions of Academic Misconduct Cases
Faculty Mentor: Andrea Mercurio (Psychological & Brain Sciences)

Deng, Megan
Neural and Computational Analyses of Visual Perceptual Changes of Motion Illusions in Individuals with Alzheimer's Disease as Diagnostic and Disease Stage Indicators
Faculty Mentor: Arash Yazdanbakhsh (Psychological & Brain Sciences)

Diep, Mia
Dynamics of Neural Systems Modulating Defensive and Social Memories
Faculty Mentor: Steve Ramirez (Psychological & Brain Sciences)

Dong, Marshal
The Genji Poetry Database
Faculty Mentor: Keith Vincent (World Languages and Literatures)

Duffy, Erin
How does the type and amount of parental social support buffer against stress from COVID to promote parent and child mental health?
Faculty Mentor: Nicholas Wagner (Psychological & Brain Sciences)

Evans, Shaina
Building a Pre-Conviction Profile of Health in Massachusetts' Criminal-legal System
Faculty Mentor: Jessica Simes (Sociology)

Feldman, Raphaël
Assessing Striatal-Wide Population Activity During Instrumental Learning.
Faculty Mentor: Mark Howe (Psychological & Brain Sciences)

Fulton, Sam
Designing an Aerogel Cherenkov Detector
Faculty Mentor: Edward Kearns (Physics)

Furmanek, Julia
Power in Poetry: Confessional, Homophile and Beatnik Poems as Assertions of Authentic Selfhood in Postwar America
Faculty Mentor: William Howell (English)

Gambino, Marco
The Cannabinoid CP 55,940 and its Effects on Locomotor Function in Drosophila Melanogaster
Faculty Mentor: Kyle Gobrogge (Neuroscience)

Gan, Yaoyuan
Investigating long non-coding RNA in corals' symbiont partner Symbiodiniaceae
Faculty Mentor: Sarah Davies (Biology)

Gardiner, Lara
Investigating the Relationship between the Psychological Wellbeing of Women of Color with Cancer and Nature Access
Faculty Mentor: Brenda Phillips (Psychological & Brain Science)

Gillis, Melissa
Development of Lipid Nanoparticles to Prevent and Treat SARS-CoV-2
Faculty Mentor: Mark Grinstaff (Chemistry)

Godfrey-Nwachukwu, Chinyere
Using a New Behavior Paradigm to Identify Distinct Choice Strategies and Associative Learning Processes
Faculty Mentor: Mark Howe (Psychological & Brain Sciences)

Gow, Sean
Mitochondrial Activity Analysis of Mutant Myoblasts with Impaired Expression of the Dlk1-Dio3 Noncoding RNA Locus
Faculty Mentor: Francisco Naya (Biology)

Gracia, David
Determining Proper Motions of Target Stars for the PINES Survey
Faculty Mentor: Philip Muirhead (Astronomy)

Gross, Abby
Assessing the Role of Hippocampal-Mediated, Drug-Related Memories in Relapse to Drug Seeking
Faculty Mentor: Steve Ramirez (Psychological & Brain Sciences)

Gu, Anming
Continuation of Optimal Transport Based Mixup Generalization for Deep Learning
Faculty Mentor: Edward Chien (Computer Science)

Harfouche, Lana
Do 3- to 8-year-old typically-developing children consider disability status when evaluating norm violations?
Faculty Mentor: Deb Kelemen (Psychological & Brain Sciences)

Hernandez, Ricardo
Terpene Remodeling of Raman Active Targets
Faculty Mentor: John Snyder (Chemistry)

Hong, Long
White Pine Encroachment into Hardwood Forests: Effects on Below Ground Microbial Communities, their Functions, and Soil Biogeochemistry
Faculty Mentor: Jennifer Bhatnagar (Biology)

Kanj, Natalia
Investigating the role of the imprinted Dlk1-Dio3 noncoding RNA locus in skeletal muscle
Faculty Mentor: Francisco Naya (Biology)

Kaufmann, Marine
Examining the role of affective arousal on pupillary light responses
Faculty Mentor: Sam Ling (Psychological & Brain Sciences)

Li, Jason
Completing the development of a general purpose fast electronics data acquisition system
Faculty Mentor: Lawrence Sulak (Physics)

Liu, Cerelia
Remote Natural Language Sampling of Parents and Children with Autism Spectrum Disorder: Role of Activity and Language Level
Faculty Mentor: Helen Tager-Flusberg (Psychological & Brain Science)

Lyu, Andy
Streaming analytics as-a-service on the Mass Open Cloud
Faculty Mentor: Vasiliki Kalavri (Computer Science)

Mashimo, Bryce
Brain Metabolic Scaling in Ant Specie Atta cephalotes
Faculty Mentor: James Traniello (Biology)

Mick, Steven
Characterizing Hybrid First Internal Exons with Comparative Genomics
Faculty Mentor: Ana Fiszbein (Biology)

Miranda, Crystal
The Evolving Minds Project
Faculty Mentor: Deborah Kelemen (Psychological & Brain Sciences)

Natarajan, Sahana
Evaluating the effects of Shank 1 on APP and Tau proteins
Faculty Mentor: Lucia Pastorino (Neuroscience)

Nguyen, Hieu
In Search For A Hypothetical Z Prime Boson At The LHC
Faculty Mentor: David Sperka (Physics)

Nguyen, Nicole
A Qualitative Analysis of Stigma Syndemics and Suffering among End-Stage Kidney Disease Patients in Disenfranchised Urban Communities during the COVID-19 Pandemic
Faculty Mentor: Merav Shohet (Anthropology)

Peterman, Natalie
Examining prosodic differences in spontaneous and stereotyped speech in individuals with ASD
Faculty Mentor: Helen Tager-Flusberg (Psychological & Brain Science)

**Pfaff, Amelia**
Understanding the Mechanism of NEMO Dimerization through Fluorescent Dimerization Experiments
Faculty Mentor: Adrian Whitty (Chemistry)

**Plzak, Zoe**
Simple Models for Pattern Formation on Growing Domains
Faculty Mentor: Ryan Goh (Mathematics and Statistics)

**Przekop, Kylia**
Brain and Body Metabolic Rate Subcaste Differences in Camponotus Floridanus
Faculty Mentor: James Traniello (Biology)

**Pyo, Angela**
Characterizing vCA1 astrocytic activity during stress and depression-like behaviors
Faculty Mentor: Steve Ramirez (Psychological & Brain Sciences)

**Remler, Ava**
Simple models for pattern formation on growing domains
Faculty Mentor: Ryan Goh (Mathematics and Statistics)

**Rice, Gabriella**
Out of Bounds: The Borders of the Bayeux Tapestry, Model Books and the Loire Valley
Faculty Mentor: Deborah Kahn (History of Art and Architecture)

**Rigor, Samantha**
Environments Affecting the Presence of coda /t/ and /d/ in Asian American speech
Faculty Mentor: Charles Chang (Linguistics)

**Riley, Jessica**
Whole Brain and Subregional Brain Metabolic Scaling Relationships in Atta cephalotes
Faculty Mentor: James Traniello (Biology)

**Rose, Maitreya**
Assembling Nucleosomes, Optical Tweezer Experimentation and Single-Molecule Force Spectroscopy on H3.3 Variant Nucleosomes
Faculty Mentor: Masha Kamenetska (Chemistry and Physics)

**Sabanos, Caroline**
Synthesis of{V(O)-pinF} complexes and their reactivity
Faculty Mentor: Linda Doerrer (Chemistry)

**Shin, Haneul**
French Missions and French Colonization in Modern China: Quantification via the China Historical Christian Database
Faculty Mentor: Eugenio Menegon (History)

Shukla, Akshata
Spatial Analysis of Microbial Interactions in Salt Marsh Sediment
Faculty Mentor: Jeffrey Marlow (Biology)

Simone, Iris
Functionalization of Betulin to Terpene-Separated Amino Acids
Faculty Mentor: John Snyder (Chemistry)

Singer, Ethan
Leveraging Mass Voter Files and Data Science to Improve Voting Rights Data
Faculty Mentor: Maxwell Palmer (Political Science)

Swanson, Morgan
Bornean orangutan mothers' double burden during periods of food scarcity
Faculty Mentor: Cheryl Knott (Anthropology)

Tang, Kylie
Large Scale Dynamics of Striatal Cholinergic Interneurons and Acetylcholine Release During Movement In Normal and Parkinsonian States
Faculty Mentor: Mark Howe (Psychological & Brain Sciences)

Tatlubaeva, Anastasiia
Divisor-Marking Strategies in the Languages of Europe: A Corpus-based Typology
Faculty Mentor: Elizabeth Coppock (Linguistics)

Tomljanovich, Lyra
Online Professional Development to Aid Teachers' Comprehension of Natural Selection
Faculty Mentor: Deborah Kelemen (Psychological & Brain Sciences)

Wu, Kassandra
Determination of conserved regions in Cia2 essential to binding with Met18 via site-directed mutagenesis
Faculty Mentor: Deborah Perlstein (Chemistry)

Wyszynski, Sofia
An Evolutionary Analysis Of Blood Group O And Malaria
Faculty Mentor: Carolyn Hodges-Simeon (Anthropology)

Xia, Angela
How does genomic architecture and thermal limits facilitate species invasions in marine mollusks?
Faculty Mentor: Sarah Davies (Biology)

Yang, Erwina
Characterizing Interaction Specificity between Transcription Factors and Cofactors P300 and CBP
Faculty Mentor: Trevor Siggers (Biology)

**Zong, Will**
National Science Foundation-Algorithms for Threat Detection Challenge (ATD 2021)
Faculty Mentor: Sang "Peter" Chin (Computer Science)

## College of Fine Arts

**Chang, Danielle**
Radical Characters: A Curatorial Project Exploring Design and Culture in the Chinese and Chinese American Community
Faculty Mentor: Mary Yang (Graphic Design)

**Howard, Brianna**
Ink Formulation Characteristics to Improve Print Quality in E. Coli Melanin Photographic Prints
Faculty Mentor: Lucy Kim (Painting)

**Mooneyham, Erin**
Dogs or Foxes? Applying Metric Analysis to Distinguish Canids in the Archaeological Record
Faculty Mentor: Catherine West (Archaeology)

**Prudhvi, Sanjana**
Utilizing Microencapsulation to Optimize Production and Retention of Melanin in Recombinant E. coli
Faculty Mentor: Lucy Kim (Painting)

**Regis, Ysabelle**
Culture through Costume: Understanding Theatre Globally
Faculty Mentor: Joel Brandwine (Theatre Arts/ Technical Production)

**Riedl, Jenna**
The Smile Market: Increasing Artistic Entrepreneurship
Faculty Mentor: Emily Worden (Visual Arts)

**Saathoff, Grace**
Researching the Effects of 3D Programming and Machinery on Costume Production within Theatre Productions
Faculty Mentor: Joel Brandwine (Technical Production)

**Young, Lillian**
Creating the Underrepresented Composers Recital Music Database
Faculty Mentor: Daniel Doña (Performance and Applied Music)

## College of General Studies

**Pereira, Noah**
Combating The Opioid Epidemic Through Decriminalization and Rehabilitation: Takeaways From Portugal and Drug Policy Reform in Massachusetts
Faculty Mentor: Daniela Melo (Social Sciences)

## College of Engineering

**Alba, Gabriela**
Patient Specific TGF-β Internalization Rate Dependent Engineered Cartilage Tissue Growth
Faculty Mentor: Michael Albro (Mechanical Engineering)

**Alghannam, Merna**
Improving the Online Defense of Trojaned Models using Misattributions tool
Faculty Mentor: Wenchao Li (Electrical and Computer Engineering)

**Ang, Benjamin**
Characterization of a Microfluidic Biosensor for Renal Proximal Tubule Epithelium Drug Toxicity Experiments
Faculty Mentor: Xin Zhang (Mechanical Engineering)

**Bachrach, Jacqueline**
CuPID Cubesat Observatory
Faculty Mentor: Brian Walsh (Mechanical Engineering)

**Bakre, Shirin**
Engineering protein signal peptides for more effective WNT ligand secretion from endothelial cells.
Faculty Mentor: Christopher Chen (Biomedical Engineering)

**Baumann, Amanda**
Solid Sorbent Carbon Capture
Faculty Mentor: Emily Ryan (Mechanical Engineering)

**Baweja, Apaar**
Fabrication and Frequency Measurements of Monolayer Tungsten Disulfide Nanomechanical Resonators
Faculty Mentor: Scott Bunch (Mechanical Engineering)

**Berniac, Gabriela**
Conditioning Neural Progenitor Cells for Transplantation into Injury Environments in the Central Nervous System
Faculty Mentor: Timothy O'Shea (Biomedical Engineering)

**Bolognino, John**
Fisheye Re-ID: Reliably re-identifying people in large indoor spaces for people-counting
Faculty Mentor: Prakash Ishwar (Electrical and Computer Engineering)

**Caplan, Sophie**
4D Printing Materials with Programmed Stiffness and Thermal Responsiveness
Faculty Mentor: J. William Boley (Mechanical Engineering)

Cheng, Chia Jen
Crack Detection via Convolutional Neural Network Trained on Synthetic Data
Faculty Mentor: Emma Lejeune (Mechanical Engineering)

Desai, Diya
Raman Spectroscopic Monitoring of Engineered Cartilage growth for Osteoarthritis Treatment
Faculty Mentor: Michael Albro (Mechanical Engineering)

Detering, Emerson
Computer controlled manipulation of nanoparticles using electric fields and control theory
Faculty Mentor: Sean Andersson (Mechanical Engineering)

Diamond, Elizabeth
Ingestible Micro-Bio-Electronic Device for Disease Diagnosis and Monitoring
Faculty Mentor: Rabia Yazicigil (Electrical & Computer Engineering)

Diaz, Sebastian
Increasing the throughput of an autonomous experimentation system for mechanics
Faculty Mentor: Keith Brown (Mechanical Engineering)

Ducharme, Benjamin
Characterizing the Young's Modulus of Nanoparticles via Mechanosensitive Ion Conduction in Solid-State Nanopores
Faculty Mentor: Chuanhua Duan (Mechanical Engineering)

Filippova, Sofiya
Solid Sorbent Carbon Capture
Faculty Mentor: Emily Ryan (Mechanical Engineering)

Goode, Isabelle
Sex Dependency of Murine Flexor Tendons in Response to Inflammation
Faculty Mentor: Brianne Connizzo (Biomedical Engineering)

Gruspier, Daniel
Mid-Infrared Photothermal Microscopy of Micro-Scale Samples in Water
Faculty Mentor: Michelle Sander (Electrical & Computer Engineering)

Holbert, Hannah
Realistic Behavior Simulation
Faculty Mentor: Eshed Ohn-Bar (Computer Science)

Huang, Fangrui
Using Attention-Based Machine Learning Models to Identify Gene-enhancer Pairs
Faculty Mentor: Ashok Cutkosky (Electrical and Computer Engineering)

Huang, Jami
"Generalizing Computer Vision from Simulation to Real for Accessibility"
Faculty Mentor: Eshed Ohn-Bar (Electrical & Computer Engineering)

Hui, Veronica
Exploring the Sufficiency of Akt Isoforms in Explaining Mutation-Specific Phenotypic Changes in Breast Cancer
Faculty Mentor: Christopher Chen (Biomedical Engineering)

Jalihal, Parth
Kinetic characterization of single-mismatched oligonucleotide pairs on a label-free sensor with potential diagnostic applications
Faculty Mentor: Selim Unlu (Electrical and Computer Engineering)

Kao, Brandon
The Role of Glucose in Tendon Explant Health
Faculty Mentor: Brianne Connizzo (Biomedical Engineering)

Katsarakes, Perry
Characterization of Quantum Dot Cytotoxicity
Faculty Mentor: Allison Dennis (Biomedical Engineering)

Kelly, Owen
Characterization of the tumor-lymphatic model through immunofluorescence staining
Faculty Mentor: Joe Tien (Biomedical Engineering)

Knox, Carlton
Machine learning based hot spot prediction on processor chips
Faculty Mentor: Ayse Coskun (Electrical & Computer Engineering)

Krska, William
Two-Dimensional Non-Line-of-Sight Scene Estimation from Dual Edge Occluders
Faculty Mentor: Vivek Goyal (Electrical & Computer Engineering)

Langenbrunner, Eva
The Mechanical Consequences of the Curing Process on Photocurable Resins
Faculty Mentor: Keith Brown (Mechanical Engineering)

Lee, Megan
Integration of Components of Soft Robot for Heart Surgery
Faculty Mentor: Tommaso Ranzani (Mechanical Engineering)

Lee, Harin
Soft-Robotic Fiber Jamming Mechanism for Variable Stiffness in Catheter Applications
Faculty Mentor: Sheila Russo (Mechanical Engineering)

Li, Yuke
Testing Actin-Based Knock-In System in Natural Isolates of D. discoideum for Targeted Integration
Faculty Mentor: Allyson Sgro (Biomedical Engineering)

Lim, Zi Heng
Development of a fully soft stabilization system for minimally invasive intracardiac surgery
Faculty Mentor: Tommaso Ranzani (Mechanical Engineering)

Lu, Zhangchi
AI-Enabled Measurement of Inter-People Distances using Fisheye Cameras
Faculty Mentor: Janusz Konrad (Electrical and Computer Engineering)

Mahabir, Brian
Development and evaluation of electrodynamic screen (EDS) films for water-free removal of dust from solar panels
Faculty Mentor: Malay Mazumder (Electrical & Computer Engineering)

Margaronis, Artemis
Using Biodegradable Bornite Nanocrystals to Target Antibiotic-Resistant Bacteria Through the Photothermal Effect
Faculty Mentor: Allison Dennis (Biomedical Engineering)

Ngo, Jonathan
Ordered Reliability Bits Guessing Random Additive Noise Decoding (ORBGRAND)
Faculty Mentor: Rabia Yazicigil (Electrical & Computer Engineering)

Obenreder, Mackenzie
How fatty acids in obesity affect the invasion and escape of breast cancer
Faculty Mentor: Joe Tien (Biomedical Engineering)

Ostrovsky, Nicole
Engineering Peptides and Peptidomimetics to Interfere at the SARS-CoV-2 Spike Protein-ACE2 Interface
Faculty Mentor: Diane Joseph-McCarthy (Biomedical Engineering)

Panenko, tom
VIVID: Smartphone-based Ride Identification and Assistance for People with Visual Impairments
Faculty Mentor: Eshed Ohn-Bar (Electrical & Computer Engineering)

Pang, Yanni
MicroFaaS: Bare Metal Serverless on Single-board Computers
Faculty Mentor: Ayse Coskun (Electrical & Computer Engineering)

Pinto, Felicia
The Role of Glutamine Supplementation in Protein Synthesis of Murine Tendon Explants
Faculty Mentor: Brianne Connizzo (Biomedical Engineering)

Rathi, Anushka
Development of Gait Corrective Ankle-Foot Orthosis
Faculty Mentor: Tommaso Ranzani (Mechanical Engineering)

Sen, Riya
Formulation of Trehalose Based Nanoparticles for Therapeutic Protein Delivery
Faculty Mentor: Timothy O'Shea (Biomedical Engineering)

Shekhar, Medha
Characterization of cell death and fibrotic remodeling in an in vitro model of cardiac injury
Faculty Mentor: Christopher Chen (Biomedical Engineering)

Shterenberg, Joshua
Anomaly Diagnosis in High Performance Computing Systems Using Semi-Supervised Machine Learning
Faculty Mentor: Ayse Coskun (Electrical & Computer Engineering)

Silfen, Zachary
In Silico Prototyping for Intranasally-Administered Agents for COVID-19 and Other Respiratory Pathogens
Faculty Mentor: Diane Joseph-McCarthy (Bioengineering Technology & Entrepreneurship Center)

Smolina, Dasha
Bootstrappable Homomorphic Encryption-based Breast Cancer Prediction using Deep Convolutional Neural Network
Faculty Mentor: Ajay Joshi (Electrical & Computer Engineering)

Tasich, Ksenija
Developing a Minimally-Invasive Device that Quantifies Fibrosis and Assesses Chronic Kidney Disease Using Optical Spectroscopy
Faculty Mentor: Ousama Aamar (Biomedical Engineering)

Valdiviezo, Zenia
Electrophysiological and cerebrospinal fluid responses in the aging human brain during wakefulness
Faculty Mentor: Laura Lewis (Biomedical Engineering)

Watkins, Luisa
Demystifying Bounded Noise
Faculty Mentor: Vivek Goyal (Electrical & Computer Engineering)

Ye, Jonathan
Developing a Pneumatic Soft Robotic Haptic Feedback Glove to Assist Minimally Invasive Surgery
Faculty Mentor: Sheila Russo (Mechanical Engineering)

Zhou, Brian
Comparing Spo0A Activity Level in B. Subtilis Using Fluorescent Reporters
Faculty Mentor: Allyson Sgro (Biomedical Engineering)

## School of Medicine

**Binaggia, Alessia**
Pilot Testing PRE-CARE to Address Unmet Social Needs for Preschoolers with Inattention and/or Hyperactivity
Faculty Mentor: Andrea Spencer (Psychiatry)

**Bodanapu, Geethika**
Assessing the feasibility and acceptability of embedding Paid Family Leave assistance in a Pediatric Clinic Setting to improve health equity.
Faculty Mentor: Lucy Marcil (Pediatrics)

**Chen, Raymon**
Regulation of γ-globin Gene Expression by Long Non-Coding RNA
Faculty Mentor: Shuaying Cui (Hematology & Medical Oncology)

**Chen, Serena**
SARS-CoV-2 Transmission Occurrences among healthcare Personnel (STOP)
Faculty Mentor: Tara Bouton (Section of Infectious Disease)

**Cheng, Fangzhou**
The Reversal of Protein S-glutathionylation by N-acetylcysteine in Vascular Endothelial Dysfunction Associated with Aging
Faculty Mentor: Jingyan Han (Medicine)

**Dholiya, Prakruti**
Tagging the endogenous dot1l gene with Auxin-Inducible Degron (AID) in colorectal cancer cell lines using CRISPR/Cas9
Faculty Mentor: Alla Grishok (Biochemistry)

**Faber-Rico, Bella**
Qualitative Analysis of Telehealth Inequities in Boston's Black and Latinx Communities
Faculty Mentor: Lance Laird (Family Medicine)

**Garcia, David**
The localization of golgin and P2X7 in cell-cell signaling, migration, and actin rearrangement in the context of corneal wound healing in diabetic and normal mice models.
Faculty Mentor: Vickery Trinkaus-Randall (Biochemistry)

**Gomez, Juliana**
Post-Operative Smoking and Patient Outcomes Among Patients Undergoing Resection of Primary Lung Cancer
Faculty Mentor: Kei Suzuki (Surgery)

**Gutterman, Anna**
Evaluation of GABA-A receptor composition at the transcriptomic and protein level during the prodromal period in a rat model of Alzheimer's Disease.
Faculty Mentor: Shelley Russek (Neuroscience)

Havale, Isha
Mechanism of Aortic Carboxypeptidase-like Protein Control of Extracellular Matrix Mechanics
Faculty Mentor: Matthew Layne (Biochemistry)

Henault, Emily
The Function of mrc1a in the Zebrafish Blood Stem Cell Niche
Faculty Mentor: Elliott Hagedorn (Hematology & Medical Oncology)

Holtcamp, Jessica
An Open-Label Clinical Trial Evaluating the Immunogenicity of the 9vHPV Vaccination Regimen over 6 Months Among Women Aged 16 to 45 years old, An Exploratory Immunogenicity Study
Faculty Mentor: Natalie Joseph (Pediatrics)

Ibrahim, Mohamed
To determine the PACAP neuronal projection to the BNST activated by chronic intermittent alcohol drinking in mice.
Faculty Mentor: Valentina Sabino (Pharmacology)

Kiyanda, Alexis
Investigating HIV, Endemic Infections, Hypertension and Atherosclerosis Together in Ghana (I HEART GHANA)
Faculty Mentor: Kaku So-Armah (Internal Medicine)

Lei, Yang
Investigating the Effect of CKLF on Treg in MYCN-Driven Neuroblastoma
Faculty Mentor: Hui Feng (Pharmacology and Experimental Therapeutics)

Lesch, Kayla
Community-Powered Food Systems Co-Design Project (CPFSCDP)
Faculty Mentor: Renee Boynton Jarrett (Pediatrics)

L'Huillier Lanna, Helena
Centering Parenting Research Network Pilot Initiative
Faculty Mentor: Renee Boynton-Jarrett (Pediatrics)

Lohse, Max
Creation of a conditional hnRNPUL1 knock-out in human cell culture using CRISPR/Cas9
Faculty Mentor: Michael Blower (Biochemistry)

Lu, James
Modeling multiciliated cells in human bronchial epithelial cells using air-liquid interface cell culture
Faculty Mentor: Xaralabos Varelas (Biochemistry)

Lu, Simon
Identification of the serine phosphorylation sites in interferon regulatory factor 5 (IRF5) required for IRF5 activation in a mouse model of the autoimmune disease systemic lupus erythematosus (SLE)
Faculty Mentor: Ian Rifkin (Nephrology)

Matsuo, Mao
Evaluating the role of flavivirus RNA secondary structure on host tropism
Faculty Mentor: Florian Douam (Microbiology)

Nanshah, Dhanvil
Porcine Corneal Cross-Linking Experiment
Faculty Mentor: Hyunjoo Lee (Opthalmology)

Ngo, Andrew
Investigating Impact of T cell Receptor Signaling on HIV Proviral Reservoir Using Bioengineered Receptor
Faculty Mentor: Andrew Henderson (Microbiology)

Park, Elaine
MicroRNA as the Driving Force Behind the Cambrian Explosion
Faculty Mentor: Daniel Cifuentes Buira (Biochemistry)

Patel, Priya
Juvenile Bioarchaeology: The Study of Weaning Practices through Isotopic Analysis
Faculty Mentor: Sean Tallman (Anatomy and Neurobiology)

Sakharkar, Mitali
Distribution and Transcriptomic Profiling of Muscarinic Receptors on Excitatory and Inhibitory Cell Types in primate lateral prefrontal and anterior cingulate cortices
Faculty Mentor: Maria Medalla (Neurobiology)

Sarjoo, Arianna
Identifying peptides that bind IL13Rα2 in basal-like breast cancer cells to inhibit cell proliferation and tumorgenicity
Faculty Mentor: Sam Thiagalingam (Biomedical Genetics)

Schingo, Victor
Modeling Colorectal Cancer initiation using human iPSC-derived intestinal organoids.
Faculty Mentor: Gustavo Mostoslavsky (Medicine)

Shanabrook, Kristin
Leveraging the Framingham Study to Investigate Relationships between Traumatic Brain Injury, Alzheimer's Disease and Related Dementias
Faculty Mentor: Jesse Mez (Neurology)

Siddiqui, Omar
Dermatology Education Project
Faculty Mentor: Margaret Lee (Pediatric Dermatology)

Siu, Jessica
In vivo Analysis of Kidney Glomerular Tubular and Fibrosis Phenotypes in Two Genetically Modified Mouse Models
Faculty Mentor: Weining Lu (Medicine)

**Sood, Himani**
Clinical and Diagnostic Predictors of Functional Outcome in Patients with Traumatic Brain Injury at Boston Medical Center
Faculty Mentor: Ali Daneshmand (Neurology)

**Tseng, Angeline**
The Effect of Recombinant ApoE Proteins on ApoE and mCRP Model
Faculty Mentor: Wendy Qiu (Pharmacology & Experimental Therapeutics)

**Tuekam Nono, Evans**
Flavivirus derived self-replicating RNA vaccine platform
Faculty Mentor: Florian Douam (Virology and Immunology)

**Zaltz, Emily**
Understanding the molecular mechanisms of glomerular kidney disease and renal fibrosis in a mouse model using single cell RNA sequencing technology
Faculty Mentor: Weining Lu (Nephrology)

## Pardee School of Global Studies

**Sever, Levent**
Mobility Diplomacy: How States in the Global South Maximize Passport Power
Faculty Mentor: Noora Lori (International Relations)

## Questrom School of Business

**Chen, Xingru**
Regression Discontinuity with Measurement Error: Implementation in Stata
Faculty Mentor: Jetson Leder-Luis (Markets, Public Policy, and Law)

**Liu, Sihan**
Analyzing Company Review Changes Under the Pandemic
Faculty Mentor: Giorgos Zervas (Marketing)

**Nguyen, Khanh Ly**
The Effects of Government Policies on Market Returns under Covid-19 in the United States: Implications for Policymakers and Investors
Faculty Mentor: Vidit Munshi (Markets, Public Policy, and Law)

**Wright, Baiden**
Exploring the Complicated Nature of Fraud in the Public and Private Sectors
Faculty Mentor: Jetson Leder-Luis (Markets, Public Policy, and Law)

## Sargent College

**Addesso, David**
Understanding Inequalities in Health Outcomes For Hispanic Post-stroke Bilinguals
Faculty Mentor: Swathi Kiran (Neurorehabiliation)

**Albright, Cate**
Designing Methods for Estimating the Rate of Transmission of Novel SARS-CoV-2 Variants
Faculty Mentor: Laura Forsberg White (Biostatistics)

**Bujiriri, Baderha**
Experiences of African and Latinx Immigrant in the Greater Boston Area during COVID-19: A Qualitative Thematic Analysis
Faculty Mentor: Shannon Peters (Health Sciences)

**Chen, Sean**
Identifying Skeletal Muscle Characteristics in Idiopathic Pulmonary Disease
Faculty Mentor: LaDora Thompson (Physical Therapy and Athletic Training)

**Chen, Selena**
Preparation of the Global 24-hr Recall Software, INDDEX24 Dietary Data App, for the APLUS-BU Growth and Microbiome Study.
Faculty Mentor: Jacqueline Lauer (Health Sciences)

**Chen, ShiMin**
Investigating the direct responses to semantic-based treatment in Mandarin-English bilinguals with aphasia
Faculty Mentor: Swathi Kiran (Speech, Language, and Hearing Sciences)

**Greenhill, Charlotte**
How Global LGBTQ+ Identities Affect Health, Relationships, and Experiences: Qualitative Interviews with Queer Individuals from Around the World
Faculty Mentor: Kaytlin Eldred (Health Science)

**Jiang, Lauren**
Investigating Phoneme Sequence Learning in Individuals with Parkinson's Disease
Faculty Mentor: Frank Guenther (Speech, Language, and Hearing Sciences)

**Lee, Megan**
Exploration of Musicianship and Enhanced Neural Processing of Speech
Faculty Mentor: Tyler Perrachione (Speech, Hearing, and Language Science)

**Liao, Sarah**
Effect of gradually reduced training on portion size estimation and the plausibility of reported energy intake from a web-based food diary
Faculty Mentor: Megan McCrory (Health Sciences)

**Malekan, Deborah**
Resistance to Frailty: Investigating Immunity to Osteoarthritis Due to Hormone Deficiency
Faculty Mentor: LaDora Thompson (Physical Therapy and Athletic Training)

**Mount, Amanda**
Understanding the relationship between the speech intelligibility of Persons with Parkinson's Disease and acoustic measures of speech over time
Faculty Mentor: Cara Stepp (Speech, Language, and Hearing Sciences)

**Roy, Steph**
The role of indexical features in feedforward streaming during cocktail party listening
Faculty Mentor: Tyler Perrachione (Speech, Language, and Hearing Sciences)

**Swift, William**
Turn Detection in Post Stroke Walking Using Inertial Measurement Unit
Faculty Mentor: Louis Awad (Physical Therapy)

**Tak, Kendrick**
Examining Heschl's Gyrus and Planum Temporale Morphology in Autism Spectrum Disorder
Faculty Mentor: Tyler Perrachione (Speech, Language, and Hearing Sciences)

## School of Dental Medicine

**Kim, Ji Won**
Osteonecrosis of the Jaw: Effect of BP and Denosumab on osteocytes and osteoclasts
Faculty Mentor: Paola Pajevic (Translational Dental Medicine)

**Torres, Maria Fernanda**
Effect of Aging on the b-catenin/CBP Epigenetic Pathway
Faculty Mentor: Maria Kukuruzinska (Translational Dental Medicine)

## School of Public Health

**Bock, Emily**
An Investigation into National Rates of Students With Disabilities Experiencing Homelessness
Faculty Mentor: Eric Rubenstein (Epidemiology)

**Martin, Rachel**
Gun Violence 20/20
Faculty Mentor: Jonathan Jay (Community Health Sciences)

**Mei, Winnie**
Designing Methods for Estimating the Reduction in Transmission from COVID-19 Vaccines in Clinical Trials
Faculty Mentor: Laura White (Biostatistics)

**Negassa, Abgel**
Building Capacity to Adapt to Excessive Heat Exposure in Chelsea and East Boston through Photovoice and Current Intervention Strategies
Faculty Mentor: Madeleine Scammell (Environmental Health)

**Nelson, Elizabeth**
Demographic Patterns of Aviation Noise Pollution
Faculty Mentor: Junenette Peters (Environmental Health)

**Paredes, Christian**
The Relationship between Sexually Explicit Online Media Consumption, Condom Attitudes, and Engagement in Condomless Anal Sex among Adolescent Sexual Minority Males.
Faculty Mentor: Kimberly Nelson (Community Health Sciences)

**Thakur, Aditya**
Investigating Viral Transmission Rates of SARS-CoV-2 Using Simulation Techniques & Game Theoretic Approaches
Faculty Mentor: Laura White (Biostatistics)

**Xu, Kailin**
Survey to Evaluate the Effectiveness of AWFH Cervical Health Program
Faculty Mentor: Eleanor Murray (Epidemiology)

## Wheelock College of Education & Human Development

**Caplan, Leila**
The Use of Models and Modeling Conversations during Fifth-Grade Science Investigations
Faculty Mentor: Eve Manz (Science Education)

**Pickering, Lexy**
Engineering Laboratory Project
Faculty Mentor: Kathleen Corriveau (Applied Human Development)

**Santos, Abi**
Working Conditions and Instructional Decision Making in Classrooms for Students with Emotional and Behavioral Disabilities (EBD)
Faculty Mentor: Elizabeth Bettini (Special Education)

**Voetsch, Priya**
Exemplary School Career Development: Exemplars of Practice
Faculty Mentor: Kimberly Howard (Counseling Psychology and Applied Human Development)

## Other

**Critchfield-Jain, Isabella**
Identifying the Frontal Lobe Activation Areas of the Brain During Interactions with Teachers and Students with Autism Spectrum Disorder (ASD)
Faculty Mentor: Jonathan Wisco (Anatomy and Neurobiology)

**Sapru, Krish**
A Comprehensive Dive into Minimal Computing and the Applicability of Serverless Libraries in the Digital Humanities Space for the Dictionary of African Christian Biography (DACB.org)
Faculty Mentor: Michele Sigg (STH)

**Shi, Hui**
Modeling Chemotaxis in a Collaborative Platform for Systems Biology of Microbial Communities
Faculty Mentor: Daniel Segre (Bioinformatics)

**Xi, Yue**
Chinese Christian Posters
Faculty Mentor: Daryl Ireland (Mission)

**Zheng, Allyson**
The deadly synergy between cardiovascular disease and coronavirus infections
Faculty Mentor: James Hamilton (Physiology and Biophysics)