



**BROWN**  
**SUMMER RESEARCH**  
**SYMPOSIUM**  
**2016**



**Sayles Hall**  
**11:00 am – 1:00 pm**

**Thursday, August 4**  
Life Sciences and Humanities

**&**

**Friday, August 5**  
Physical and Social Sciences and  
Student Teams

**PRESENTED BY**  
The Office of the Dean of the College

# SUMMER RESEARCH SYMPOSIUM

Sayles Hall  
Main Green

## Thursday, August 4

*Life Sciences and Humanities Posters*

- 11:00 – 11:10 am Welcome  
Associate Dean Oludurotimi Adetunji
- 11:10 – 11:20 am Brief remarks  
Deputy Dean of the College Christopher Dennis
- 11:00 am – 1:00 pm Research Poster Presentations

## Friday, August 5

*Physical and Social Sciences and Team Posters*

- 11:00 – 11:10 am Welcome  
Associate Dean Oludurotimi Adetunji
- 11:00 am – 1:00 pm Research Poster Presentations

~ A light lunch will be provided both days ~

**Descriptions of each poster session include a poster number indicating the poster's placement in Sayles. To locate a poster, refer to the layout maps at the end of this pamphlet.**

# SUMMER RESEARCH SYMPOSIUM POSTERS

Thursday, August 4

Humanities & Life Sciences

## Humanities

### Paula Gaither **Poster #A1**

**Home Institution:** Columbia University  
Summer Research Program: Leadership Alliance-Summer Research Early Identification Program (SR-EIP)  
**Faculty Mentor:** Jeri DeBrohun, Department of Classics  
**Poster Title:** Phillis Wheatley and America: Forging Identity and Fighting Tyrants

### Oscar Gutierrez **Poster #A2**

**Home Institution:** San Francisco State University  
Summer Research Program: Leadership Alliance-Summer Research Early Identification Program (SR-EIP)  
**Faculty Mentor:** Keisha-Khan Perry, Department of Africana Studies  
**Poster Title:** Settlements of Renewal: Urban Agriculture and the Promise of Belonging

### Adetobi Moses **Poster #A3**

**Home Institution:** Princeton University  
Summer Research Program: Leadership Alliance-Summer Research Early Identification Program (SR-EIP)  
**Faculty Mentor:** Olakunle George, Department of English  
**Poster Title:** Feminism & African Literature: A look at Chimamanda Ngozi Adichie

### Emerald Rutledge **Poster #A4**

**Home Institution:** The College of Wooster  
Summer Research Program: Leadership Alliance-Summer Research Early Identification Program (SR-EIP)

**Faculty Mentor:** Francoise Hamlin, Department of Africana Studies  
**Poster Title:** Nina Simone and Beyonce Knowles: Musical Icons Providing Liberation for the Black Woman

### Molly Sandstrom **Poster #A5**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)  
**Faculty Mentor:** Joan Richards, Department of History  
**Poster Title:** Defying Norms, Fulfilling Expectations-The Public Opinion and Private Obligations of England's Early Unitarians

## Life Sciences

### Nischal Acharya **Poster #A6**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)  
**Faculty Mentor:** Alexander Jaworski, Department of Neuroscience  
**Poster Title:** Understanding the Nell2 - Robo3 Interaction in Axon Guidance

### Joshua Amaya **Poster #A7**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)  
**Faculty Mentor:** Nicolas Fawzi, Department of Molecular Pharmacology, Physiology and Biotechnology  
**Poster Title:** Structural effects of mutations on the ALS-causing region in inclusion-forming protein hnRNP A2

**Kelsey Anderson                      Poster #A8**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate  
Teaching and Research Awards (UTRA)  
**Faculty Mentor:** Dawn Abbott,  
Interventional Cardiology, Rhode Island  
Hospital  
**Poster Title:** Accuracy and Prognostic Ability  
of Stress Testing in Pre-Renal Transplant  
Patients

**Tsikata Apenyo                      Poster #A9**

**Home Institution:** University of Portland  
Summer Research Program: Leadership  
Alliance-Summer Research Early  
Identification Program (SR-EIP)  
**Faculty Mentors:** Wen-Chih Wu,  
Department of Medicine & Tracey Taveira,  
Department of Medicine  
**Poster Title:** Negative emotional states and  
incident diabetes among African American  
adults: The Jackson Heart Study

**Naveen Balakrishnan                      Poster #A10**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate  
Teaching and Research Awards (UTRA)  
**Faculty Mentor:** Peter Belenky, Department  
of Molecular Microbiology and Immunology  
**Poster Title:** Differential Impacts of NAD  
Metabolism on Anti-fungal Toxicity in  
Mammalian and Fungal Cells

**Douglas Barber                      Poster #A11**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate  
Teaching and Research Awards (UTRA)  
**Faculty Mentors:** Christopher Born,  
Department of Orthopedics & Dioscaris  
Garcia, Department of Orthopedics  
**Poster Title:** Developing a Model for the  
Qualification and Quantization of Bacterial  
Biofilm

**Adriel Barrios-Anderson                      Poster #A12**

**Home Institution:** Brown University

Summer Research Program: Summer  
Research Assistantship in Biomedical Sciences

**Faculty Mentor:** Barbara Stonestreet,  
Department of Pediatrics

**Poster Title:** The effects of Inter-Alpha  
Inhibitor Proteins on neutrophil infiltration  
and matrix-metalloproteinase 9 levels in  
Hypoxic-Ischemia

*\*Presenting beside Sakura Nakada*

**Nikolas Baya                      Poster #A14**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate  
Teaching and Research Awards (UTRA)  
**Faculty Mentor:** Stephanie Jones,  
Department of Neuroscience  
**Poster Title:** Computational Neuroscience

**Julia Bleier                      Poster #A15**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate  
Teaching and Research Awards (UTRA)  
**Faculty Mentor:** Carlos Aizenman,  
Department of Neuroscience  
**Poster Title:** Multisensory Behavior in  
Developing *Xenopus Laevis* Tadpoles

**Hayley Bounds                      Poster #A16**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate  
Teaching and Research Awards (UTRA)  
**Faculty Mentor:** Rebecca Burwell,  
Department of Cognitive, Linguistic and  
Psychological Sciences  
**Poster Title:** Gait Abnormalities in the  
Kaolin Model of Normal Pressure  
Hydrocephalus

**Haley Carter                      Poster #A17**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate  
Teaching and Research Awards (UTRA)  
**Faculty Mentor:** Erika Edwards, Department  
of Ecology and Evolutionary Biology  
**Poster Title:** Leafing Through the Chemicals  
of *Viburnum* Species

**Haejun Cho Poster #B1**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)  
**Faculty Mentors:** Wolfgang Peti, Department of Molecular Pharmacology, Physiology, & Biotechnology & Senthil Ganesan, Department of Molecular Pharmacology, Physiology, & Biotechnology  
**Poster Title:** Biophysical Studies of ribosomal RNA Processing 1 Homolog B and Protein Phosphatase 1

**Victoria Cole Poster #B2**

**Home Institution:** University of Arizona  
Summer Research Program: Leadership Alliance-Summer Research Early Identification Program (SR-EIP)  
**Faculty Mentor:** Jun Feng, Cardiothoracic Surgery Research Center  
**Poster Title:** Expression and Localization of Calcium-Activated Potassium Channels in Diabetic Endothelial Cells in Mice and Humans

**Bethany Cucka Poster #B3**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)  
**Faculty Mentor:** Loren Fast, Department of Hematology/Oncology  
**Poster Title:** The Impact of Encountering Dying Cells on the Immune System

**Adrija Darsha Poster #B4**

**Home Institution:** Brown University  
Summer Research Program: N/A; Research done at Stanford University  
**Faculty Mentor:** Joy Wu, Department of Endocrinology  
**Poster Title:** Loss of Parathyroid Hormone in the Osteoblast Lineage Hinders Osteogenic Differentiation of Mesenchymal Progenitors

**Kelvin De Leon Poster #B5**

**Home Institution:** Hunter College

Summer Research Program: Leadership Alliance-Summer Research Early Identification Program (SR-EIP)  
**Faculty Mentor:** Tara White, Department of Behavioral and Social Sciences  
**Poster Title:** Emotional, Physiological and Neurocognitive Response to Adderall in Healthy Volunteers

**Jaelyn Dell Poster #B6**

**Home Institution:** University of South Florida St. Petersburg  
Summer Research Program: Leadership Alliance-Summer Research Early Identification Program (SR-EIP)  
**Faculty Mentors:** Karla Kaun, Department of Neuroscience & Emily Petruccelli, Department of Neuroscience  
**Poster Title:** Localization of Notch pathway proteins in the adult Drosophila brain

**Drevon Dobson Poster #B7**

**Home Institution:** North Carolina Agricultural and Technical State University  
Summer Research Program: Leadership Alliance-Summer Research Early Identification Program (SR-EIP)  
**Faculty Mentors:** Qing Lu, Department of Medicine, Alpert Medical School of Brown University & Eboni Chambers, Pathobiology Ph.D, Public Affairs M.P.A Candidate  
**Poster Title:** The Effect of Sustained Elevated Adenosine Exposure on Lung Microvascular Endothelial Cells

**Jonathan Dow Poster #B8**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)  
**Faculty Mentor:** Mark Johnson, Department of Molecular Biology, Cell Biology and Biochemistry  
**Poster Title:** Evolution of Reproduction in Plants: molecular mechanisms of double fertilization

**Lisset Duran Poster #B9**

**Home Institution:** John Jay College

Summer Research Program: Leadership Alliance-Summer Research Early Identification Program (SR-EIP)

**Faculty Mentor:** Elizabeth Harrington, Department of Biology and Medicine

**Poster Title:** Overexpression of Natriuretic Peptide Receptor A (NPR-A) by Lentivirus Transduction does not Enhance the Protective Effects of Atrial Natriuretic Peptide (ANP) on Endothelium Barrier Disruption

**Celia Ford** **Poster #B10**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)

**Faculty Mentor:** David Badre, Department of Cognitive, Linguistic, and Psychological Sciences

**Poster Title:** The Effects of Dual-Task Experience on the Development of Cognitive Control Policies

**Ellen Fu** **Poster #B11**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)

**Faculty Mentor:** Richard Bennett, Department of Molecular Microbiology and Immunology

**Poster Title:** Investigating Candida albicans' Clinical Persistence

**Mursal Gardezi** **Poster #B12**

**Home Institution:** Brown University  
Summer Research Program: Weiss-Sippelle Summer Undergraduate Fellowship

**Faculty Mentors:** Christopher Born, Department of Orthopedics & Dioscaris Garcia, Department of Orthopedics

**Poster Title:** Rapid In-Situ Detection and Quantification of Bacterial Colonization on Orthopedic Infection Sites

**Nimesha Gerlus** **Poster #B13**

**Home Institution:** Brown University  
Summer Research Program: Royce Fellows

**Faculty Mentors:** Richard Liu, Department of Psychiatry and Human Behavior & Anthony Spirito, Department of Psychiatry and Human Behavior

**Poster Title:** The Role of Behavioral Impulsivity in Adolescent Suicidality: A Computational Approach

**Howard Gonzalez Navarrete** **Poster #B14**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)

**Faculty Mentor:** Suzanne De La Monte, Department of Pathology

**Poster Title:** Histological and Biochemical Effects of Alcohol-Induced Frontal Lobe Degeneration

**Kelly Goo** **Poster #B15**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)

**Faculty Mentor:** Stephanie Parade, Department of Psychiatry and Human Behavior

**Poster Title:** Biological Stress Response and Behavioral Fear Regulation in At-Risk Infants

**Chyna Gray** **Poster #B16**

**Home Institution:** University of San Diego  
Summer Research Program: Leadership Alliance-Summer Research Early Identification Program (SR-EIP)

**Faculty Mentors:** Alfred Ayala, Department of Surgical Research & Eleanor Fallon, Department of Surgical Research

**Poster Title:** The Role of invariant Natural Killer (iNK) T- cells in Neonatal Sepsis

**Evan Gross** **Poster #B17**

**Home Institution:** Brown University  
Summer Research Program: Dean's Award

**Faculty Mentor:** Kristi Wharton, Department of Molecular Biology, Cell Biology, and Biochemistry

**Poster Title:** Phenotypic characterization in Mus musculus of a hBMP4 mutation associated with cleft lip and cleft palate

**Rachel Gutman** **Poster #C1**  
**Home Institution:** Brown University  
Summer Research Program: Undergraduate  
Teaching and Research Awards (UTRA)  
**Faculty Mentor:** Uriel Cohen Priva,  
Department of Linguistics  
**Poster Title:** Deriving consonant cost from  
cross-linguistic distributions

**Hala Haddad** **Poster #C2**  
**Home Institution:** Hunter College  
Summer Research Program: Leadership  
Alliance-Summer Research Early  
Identification Program (SR-EIP)  
**Faculty Mentors:** Kristi Wharton,  
Department of Molecular and Cellular  
Biology & Diane Lipscombe, Department of  
Neuroscience  
**Poster Title:** Morphological and functional  
studies of synaptic transmission in *Drosophila*  
models of familial human amyotrophic lateral  
sclerosis

**Heba Haleem** **Poster #C3**  
**Home Institution:** Brown University  
Summer Research Program: Undergraduate  
Teaching and Research Awards (UTRA)  
**Faculty Mentors:** Catherine Kerr,  
Department of Contemplative  
Studies/Embodied Neuroscience & Chloe  
Zimmerman, Department of Embodied  
Neuroscience  
**Poster Title:** Effect of Mindfulness and  
Meditation on Working Memory Capacity and  
Heart Rate Variability of Medical School  
Students

**Vivian Hawn** **Poster #C18**  
**Home Institution:** Brown University  
Summer Research Program: Undergraduate  
Teaching and Research Awards (UTRA)  
**Faculty Mentor:** Devasis Chatterjee,  
Department of Hematology-Oncology  
**Poster Title:** Characterization of molecular  
targets of the novel platinum agent PT-112 in  
human colon cancer cells

**Trung Ho** **Poster #C4**  
**Home Institution:** Brown University  
Summer Research Program: Undergraduate  
Teaching and Research Awards (UTRA)  
**Faculty Mentor:** David Rand, Department of  
Ecology and Evolutionary Biology  
**Poster Title:** Mitochondrial Function and  
Organismal Performance in *Drosophila* with  
Engineered Mutations in mtDNA

**Micah Holness** **Poster #C5**  
**Home Institution:** Xavier University of  
Louisiana  
Summer Research Program: Leadership  
Alliance-Summer Research Early  
Identification Program (SR-EIP)  
**Faculty Mentors:** Joo-Hyun Song,  
Department of Cognitive, Linguistic, and  
Psychological Sciences & Dan McCarthy,  
Department of Cognitive, Linguistic, and  
Psychological Sciences  
**Poster Title:** The Impact of Distractor  
Saliency on Changes-of-Mind

**Samantha Huynh** **Poster #C6**  
**Home Institution:** Brown University  
Summer Research Program: Undergraduate  
Teaching and Research Awards (UTRA)  
**Faculty Mentors:** Karla Kaun, Department  
of Neuroscience & Kristin Scaplen,  
Department of Neuroscience  
**Poster Title:** Mapping Neural Circuits that  
Underlie Alcohol Reward Memory

**Brianna Irons** **Poster #C7**  
**Home Institution:** Brown University  
Summer Research Program: Diane N. Weiss  
Center for Orthopaedic Trauma Research  
**Faculty Mentors:** Christopher Born,  
Department of Orthopedics & Dioscaris  
Garcia, Department of Molecular  
Pharmacology, Physiology and Biotechnology  
**Poster Title:** Elucidation and Purification of  
Secondary Bioactive Metabolites with  
Antimicrobial Activity from Natural Sources

**Jacob Jaffe** **Poster #C8**  
**Home Institution:** Brown University



Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)

**Faculty Mentor:** Daniel Weinreich, Department of Ecology and Evolutionary Biology

**Poster Title:** The effects of seasonality on multi-locus strain structure

**Tammy Jiang** **Poster #C9**

**Home Institution:** Brown University Summer Research Program: Solsbery Fellowship

**Faculty Mentor:** Stephen Buka, School of Public Health

**Poster Title:** Childhood Predictors of Adult Suicide Attempts

**Ambar Jimenez** **Poster #C10**

**Home Institution:** SUNY Plattsburgh Summer Research Program: Leadership Alliance-Summer Research Early Identification Program (SR-EIP)

**Faculty Mentors:** Agnes Kane, Department of Pathobiology and Molecular Medicine & Robert Hurt, Department of School of Engineering

**Poster Title:** Cytotoxicity Assessment of Bulk Manganese and 2D MnO<sub>2</sub> Nanomaterials In Vitro using Fish Liver Cells (PLHC-1)

**Joseph Johnson** **Poster #C11**

**Home Institution:** Brown University Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)

**Faculty Mentor:** Louis Lapierre, Department of Molecular Biology, Cell Biology, and Biochemistry

**Poster Title:** Identification of novel regulators of autophagy

**Megan Kelly** **Poster #C12**

**Home Institution:** Brown University Summer Research Program: Dean's Award

**Faculty Mentors:** Chun Geun Lee, Department of Molecular Microbiology and Immunology & Chang-Min Lee, Department of Molecular Microbiology and Immunology

**Poster Title:** Role of Chi311 in sexual dimorphism in the pathogenesis of pulmonary hypertension

**Aisha Keown-Lang** **Poster #C13**

**Home Institution:** Brown University Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)

**Faculty Mentor:** Susan Gerbi, Department of Molecular and Cellular Biology

**Poster Title:** Fine Tuning Fluorescent in Situ Hybridization for DNA Combing and the Identification of Genomic Sites of DNA Amplification in *Sciara*

**Eleanor Kim** **Poster #C14**

**Home Institution:** Brown University Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)

**Faculty Mentor:** Richard Bennett, Department of Molecular Microbiology and Immunology

**Poster Title:** Purification and biochemical characterization of Destructin-3

**Kenneth Kim** **Poster #C15**

**Home Institution:** Brown University Summer Research Program: Royce Fellows **Faculty Mentor:** Wayne Bowen, Department of Molecular Pharmacology, Physiology and Biotechnology

**Poster Title:** Fighting Cancer: Characterizing Sigma-2 Agonists in Hepatocellular Carcinoma Tumor Cells

**Risako Kimura** **Poster #C16**

**Home Institution:** Brown University Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)

**Faculty Mentor:** Edward Hawrot, Department of Molecular Pharmacology, Physiology, and Biotechnology

**Poster Title:** The novel role of alpha-3 nicotinic acetylcholine receptor in early mammalian development

**Olena Kuksenko** **Poster #C17**

**Home Institution:** Brown University

Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)

**Faculty Mentor:** Diane Lipscombe, Department of Neuroscience

**Poster Title:** Characterizing the Gating of Voltage-dependent Calcium (CaV1.2) Channels

**Jonathan Lee Poster #D1**

**Home Institution:** Universidad de Puerto Rico - Aguadilla

Summer Research Program: Leadership Alliance-Summer Research Early Identification Program (SR-EIP)

**Faculty Mentor:** Alison DeLong, Department of Molecular Biology, Cell Biology and Biochemistry **Poster Title:** Analyzing PP2A mediated regulation of ethylene synthesis: a CRISPR approach

**Nari Lee Poster #D2**

**Home Institution:** Brown University Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)

**Faculty Mentor:** Amanda Jamieson, Department of Microbiology and Molecular Immunology

**Poster Title:** Lung responses to e-cigarette vapor exposure

**Alexis Lerner Poster #D3**

**Home Institution:** Brown University Summer Research Program: University of Georgia REU: Population Biology of Infectious Diseases

**Faculty Mentor:** John Drake, Department of Ecology

**Poster Title:** When ideas go viral: Early warning signals in theoretical and real-world social contagion systems

**Michelle Lin Poster #D4**

**Home Institution:** Brown University Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)

**Faculty Mentor:** Joo-Hyun Song, Department of Cognitive, Linguistic, and Psychological Sciences

**Poster Title:** Effect of Unconscious Face Processing on Attentional Allocation

**Karine Liu Poster #D5**

**Home Institution:** Brown University Summer Research Program: American Physiological Society

**Faculty Mentor:** Carlos Aizenman, Department of Neuroscience

**Poster Title:** Multisensory Plasticity in the Optic Tectum of the *Xenopus Laevis* Tadpole

**Desiree Lloyd Poster #D6**

**Home Institution:** DePaul University Summer Research Program: Leadership Alliance-Summer Research Early Identification Program (SR-EIP)

**Faculty Mentors:** Michael White, Department of Sociology & Tyler Myroniuk, Population Training and Studies Center

**Poster Title:** Health Care in South Africa: Understanding Access in the Context of Race and Migration

**Jacinta Lomba Poster #D7**

**Home Institution:** Brown University Summer Research Program: Summer Training in Academic Research and Scholarship (STARS) program, Brigham and Women's Hospital

**Faculty Mentor:** Kathleen Haley, Pulmonary and Critical Care Medicine, Brigham and Women's Hospital and Harvard Medical School

**Poster Title:** Chronic Critical Illness: Predictors and outcomes

**Nicolas Lopez Poster #D8**

**Home Institution:** University of Central Florida

Summer Research Program: Leadership Alliance-Summer Research Early Identification Program (SR-EIP)

**Faculty Mentor:** Andrew Foster, Department of Economics

**Poster Title:** India's Largest Public Works Program: Income, Health, and Labor Under MGNREGS

**Sarah Master** **Poster #D9**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)  
**Faculty Mentors:** David Badre, Department of Cognitive, Linguistic, and Psychological Sciences & Theresa Desrochers, Department of Neuroscience  
**Poster Title:** The Influence of Affect on Sequential Processing

**Kevin Mertz** **Poster #D10**

**Home Institution:** Brown University  
Summer Research Program: Weiss-Sippelle Summer Undergraduate Fellow  
**Faculty Mentors:** Christopher Born, Department of Orthopedics & Dioscaris Garcia, Department of Orthopedics  
**Poster Title:** Dose Response and Adherence patterns for *Candida albicans* to silver-based, titanium oxide/polymer-hybrid antimicrobial coating

**Anthony Minnah** **Poster #D11**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)  
**Faculty Mentors:** Christopher Born, Brown Alpert Medical School, Dept. of Orthopedics & Dioscaris Garcia, Brown Alpert Medical School, Dept. of Orthopedics  
**Poster Title:** Characterization of the Antimicrobial Effects of an Ag-Doped TiO<sub>2</sub>-PDMS Hybrid Coating on the Adherence and Proliferation of Vancomycin Resistant *E. faecalis* on Spinal Implant Rods of Varying Composition

**Josiah Moore** **Poster #D12**

**Home Institution:** Tougaloo College  
Summer Research Program: Brown-Tougaloo Partnership  
**Faculty Mentor:** Alison DeLong, Department of Molecular Biology, Cell Biology and Biochemistry  
**Poster Title:** Identifying Protein Phosphatase 2A Subunits That Positively Regulate Ethylene Synthesis

**Megumi Mori** **Poster #D13**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)  
**Faculty Mentor:** Elisabeth Mcgowan, Department of Biology/Medicine  
**Poster Title:** Maternal involvement in the neonatal intensive care unit and preterm infant vocalizations

**Shivam Nadimpalli** **Poster #D14**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)  
**Faculty Mentor:** Nicolas Fawzi, Department of Department of Molecular Pharmacology, Physiology and Biotechnology  
**Poster Title:** Atomic details of Male Specific Lethal (MSL) complex protein-protein interactions associated with X-chromosome transcript-level regulation

**Sakura Nakada** **Poster #A13**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)  
**Faculty Mentor:** Barbara Stonestreet, Department of Pediatrics  
**Poster Title:** Treatment with IAIPs after Exposure to Hypoxic-Ischemic Brain Injury Decreases Apoptosis

\*Presenting beside Adriel Barrios-Anderson

**Morcos Nakhla** **Poster #D15**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)  
**Faculty Mentors:** Jacquelyn Schell, Department of Biomedical Engineering & Jeffrey Morgan, Department of Biomedical Engineering  
**Poster Title:** Quantifying the Effects of Media Composition on Microtissue Self-Assembly and Stability

**Rachael Nilson** **Poster #D16**

**Home Institution:** Roger Williams University  
Summer Research Program: Leadership Alliance-Summer Research Early Identification Program (SR-EIP)  
**Faculty Mentor:** Alan Morrison, Department of Internal Medicine  
**Poster Title:** Statins Increase Rac1-dependent IL-1B Expression through Inhibition of Rac1 Isoprenylation

**Aisha Obeidallah** **Poster #D17**  
**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)  
**Faculty Mentor:** Christian Nixon, Center for International Health Research  
**Poster Title:** P. falciparum Gametocytes

**Grace Ogungbile** **Poster #D18**  
**Home Institution:** Rider University  
Summer Research Program: Leadership Alliance-Summer Research Early Identification Program (SR-EIP)  
**Faculty Mentor:** Ruhul Abid, Department of Cardiothoracic Surgery  
**Poster Title:** The Effects of Mitochondrial ROS on Endothelial Cells

**Katelynn Pan** **Poster #E1**  
**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)  
**Faculty Mentors:** Elissa Jelalian, Alpert Medical School & Whitney Evans, Alpert Medical School  
**Poster Title:** Promoting Health and Activity in the Summer Trial (PHAST)

**Jaehyun Park** **Poster #E2**  
**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)  
**Faculty Mentor:** Carlos Aizenman, Department of Neuroscience  
**Poster Title:** Early Developmental Exposure to SSRIs Results in Abnormal Neural Development in Xenopus Laevis Tadpoles

**Zemplen Pataki** **Poster #E3**  
**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)  
**Faculty Mentor:** Christopher de Graffenried, Department of Molecular Microbiology and Immunology  
**Poster Title:** Importance of p197 Phosphorylation in Trypanosoma brucei

**Alejandra Patino** **Poster #E4**  
**Home Institution:** New York University  
Summer Research Program: BP-Endure  
**Faculty Mentor:** Rebecca Burwell, Department of Cognitive, Linguistic, and Psychological Sciences  
**Poster Title:** Optogenetic Modulation of Recognition Memory via the Prefrontal Cortex

**Swathi Penumutthu** **Poster #E5**  
**Home Institution:** University of Maryland, Baltimore County  
Summer Research Program: Leadership Alliance-Summer Research Early Identification Program (SR-EIP)  
**Faculty Mentors:** Peter Belenky, Department of Molecular Microbiology and Immunology & Benjamin Korry, Department of Molecular Microbiology and Immunology  
**Poster Title:** Effects of Over-Expression of RecA on Transformation in Bacillus subtilis

**Andrew Pisaturo** **Poster #E6**  
**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)  
**Faculty Mentor:** Erika Edwards, Department of Biology  
**Poster Title:** Climate Space of CAM and C4 Plants

**Aziz Rangwala** **Poster #E7**  
**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)

**Faculty Mentors:** Gerwald Jogl, Department of Molecular Biology, Cell Biology, and Biochemistry

**Poster Title:** Investigation of the Streptomycin-Induced Misreading of the Bacterial Genetic Code

**David Reich** **Poster #E8**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)

**Faculty Mentor:** Jeffrey Morgan, Department of Molecular Pharmacology, Physiology and Biotechnology

**Poster Title:** High-Throughput Spheroids

**Gerardo Reyes** **Poster #E9**

**Home Institution:** College of Mount Saint Vincent

Summer Research Program: Leadership Alliance-Summer Research Early Identification Program (SR-EIP)

**Faculty Mentor:** Kim Boekelheide, Department of Pathology & Laboratory Medicine

**Poster Title:** The adverse effects of retinoic acid and mono-(2-ethylhexyl) phthalate and their interaction in fetal rat testes seminiferous cord development

**Mithun Saha** **Poster #E10**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)

**Faculty Mentors:** Gideon Koren, Department of Medicine/Cardiovascular Research Center & Karni Moshal, Cardiovascular Research Center

**Poster Title:** Effects of Lipopolysaccharide Induced TNF Factor and E3 ubiquitin-protein ligase NEDD4 on Cardiac L-type Calcium Channel Stability

**Natalie Schudrowitz** **Poster #E11**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)

**Faculty Mentors:** Mamiko Yajima, Department of Molecular Biology, Cell Biology, and Biochemistry & Gary Wessel, Department of Molecular Biology, Cell Biology, and Biochemistry

**Poster Title:** The Functional Contribution of Germline Factors in Cancer Cell Regulation

**Anna Schwartz** **Poster #E12**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)

**Faculty Mentors:** William Heindel, Department of Cognitive, Linguistic and Psychological Sciences & Elena Festa, Department of Cognitive, Linguistic and Psychological Sciences

**Poster Title:** The Differential Effect of Vocal versus Instrumental Music on Cognitive Function and Arousal

**Da Hee Seo** **Poster #E13**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)

**Faculty Mentor:** Nicolas Fawzi, Department of Molecular Physiology, Pharmacology and Biotechnology

**Poster Title:** Elucidating the structure and interactions of the RGG domains of ALS-associated FUS protein

**Maddali Shivaali** **Poster #E14**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)

**Faculty Mentor:** Ian Wong, Department of Biomedical Engineering

**Poster Title:** Silk Hydrogel Microfluidics Using 3D Printed Pluronic Sacrificial Elements

**Ellen Sukharevsky** **Poster #E15**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)

**Faculty Mentor:** Wayne Bowen, Department of Molecular Pharmacology and Physiology

**Poster Title:** Investigating the Role of Ceramide in the Sigma-2 Receptor Apoptosis Pathway

**Shantā Sykes** **Poster #E16**

**Home Institution:** Tougaloo College  
Summer Research Program: Brown-Tougaloo Partnership

**Faculty Mentor:** Mark Johnson, Department of Molecular Biology, Cell Biology, and Biochemistry

**Poster Title:** Ectopic Expression of DUO1 in Roots

**Morgan Talbot** **Poster #E17**

**Home Institution:** Brown University  
Summer Research Program: Dean's Award

**Faculty Mentors:** Michael Paradiso, Department of Neuroscience & Michael Migliori, Division of Ophthalmology

**Poster Title:** Development of a Visual Prosthetic for the Blind

**Neille-Ann Tan** **Poster #E18**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)

**Faculty Mentor:** Michael Frank, Department of Cognitive, Linguistic, and Psychological Sciences & Matthew Nassar, Department of Cognitive, Linguistic, and Psychological Sciences

**Poster Title:** Neurocognitive Computations in Parkinson's Disease

**Caleb Thomas** **Poster #F17**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)

**Faculty Mentor:** Michael Frank, Department of Neuroscience

**Poster Title:** Prefrontal Dopamine in Visual Working Memory

**Jason Thomas** **Poster #F2**

**Home Institution:** Brown University

Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)

**Faculty Mentor:** Kareen Coulombe, School of Engineering

**Poster Title:** Biophysical characterization of contraction and material properties of human-induced pluripotent stem cell-derived cardiac tissue

**Emma Thygesen** **Poster #F3**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)

**Faculty Mentor:** Erica Larschan, Department of Molecular Biology, Cell Biology and Biochemistry

**Poster Title:** Mapping the promoter region of the essential gene clamp in *D. melanogaster*

**Henry Vargas** **Poster #F4**

**Home Institution:** LaGuardia Community College

Summer Research Program: Leadership Alliance-Summer Research Early Identification Program (SR-EIP)

**Faculty Mentor:** Gary Wessel, Department of Molecular Biology, Cell Biology, and Biochemistry

**Poster Title:** Determining the function and regulation of the Germ line Factors in the Sea Star

**Gina Vimbela** **Poster #F5**

**Home Institution:** California State University Long Beach

Summer Research Program: Leadership Alliance-Summer Research Early Identification Program (SR-EIP)

**Faculty Mentor:** Suzanne de la Monte, Department of Pathology, Neurology, and Neurosurgery

**Poster Title:** Bioinformatics Approaches to White Matter Molecular and Biochemical Pathology in Neurodegeneration

**Jenna Washington** **Poster #F6**

**Home Institution:** Claflin University

Summer Research Program: Leadership Alliance-Summer Research Early Identification Program (SR-EIP)  
**Faculty Mentor:** Karen Fischer, Department of Earth, Environmental and Planetary Sciences  
**Poster Title:** Uppermost Mantle Velocity in Southern Appalachian Orogen from Pn Phases: Implications for Support of Mountain Topography

**River Williams** **Poster #F7**  
**Home Institution:** University of Maryland, College Park  
Summer Research Program: Leadership Alliance-Summer Research Early Identification Program (SR-EIP)  
**Faculty Mentor:** Yang Zhou, Department of Molecular Microbiology and Immunology  
**Poster Title:** Defining the CHI3L1-CRTH2 pathway in PBMCs from patients with Idiopathic Pulmonary Fibrosis

**Michele Winter** **Poster #F8**  
**Home Institution:** Brown University  
Summer Research Program: LINK Award for Computational Perception and Cognition Lab, MIT internship  
**Faculty Mentor:** Aude Oliva, MIT Computer Vision and Graphics Group  
**Poster Title:** Using Neuroimaging Techniques and Computational Modeling to Further Understand the Spatio-Temporal Dynamics of Scene Perception

**Christina Woo** **Poster #F9**  
**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)  
**Faculty Mentors:** Amanda Jamieson, Department of Molecular Microbiology and Immunology & Kayla Lee, Molecular Microbiology and Immunology

**Poster Title:** Drug discovery for host resilience pathways to IAV/bacterial coinfection

**Kevin Yan** **Poster #F10**  
**Home Institution:** Brown University  
Summer Research Program: Dean's Award  
**Faculty Mentors:** Wentian Yang, Department of Orthopaedics & John M. Sedivy, Department of Molecular Biology, Cell Biology and Biochemistry  
**Poster Title:** Cytokine Antibody Array in SHP2-deficient Macrophages and Preosteoclasts

**Chaewon Yoon** **Poster #F11**  
**Home Institution:** The University of Texas at Austin  
Summer Research Program: N/A  
**Faculty Mentor:** Phyllis Denny, Department of Molecular Biology, Cell Biology and Biochemistry  
**Poster Title:** Inverse relationship between CHI3L1 and HO-1

**Michelle Zabat** **Poster #F12**  
**Home Institution:** Brown University  
Summer Research Program: Dean's Award  
**Faculty Mentor:** Peter Belenky, Department of Molecular Microbiology and Immunology  
**Poster Title:** Interrogation of the Oral Microbiome

**Yinge Zhao** **Poster #F13**  
**Home Institution:** Brown University  
Summer Research Program: Dean's Award  
**Faculty Mentors:** Surendra Sharma, Department of Pediatrics & Shibin Cheng, Department of Pediatrics  
**Poster Title:** Protein Aggregation in Preeclampsia

# SUMMER RESEARCH SYMPOSIUM POSTERS

Friday, August 5

Physical and Social Sciences & Student Teams

## Social Sciences

### Elizabeth Cosby **Poster #A1**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate  
Teaching and Research Awards (UTRA)

**Faculty Mentor:** Willoughby Britton,  
Department of Psychiatry and Human  
Behavior

**Poster Title:** Early Trauma Predicts  
Mindfulness-Based Cognitive Therapy  
Outcome

### Madeline DiGiovanni **Poster #A2**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate  
Teaching and Research Awards (UTRA)

**Faculty Mentor:** Bertram Malle, Department  
of Cognitive, Linguistic, and Psychological  
Sciences

**Poster Title:** Adding a means to an end in  
the mind: How people connect mental states  
in behavior explanation

### Tatyana Donaldson **Poster #F14**

**Home Institution:** Claflin University  
Summer Research Program: Leadership  
Alliance-Summer Research Early  
Identification Program (SR-EIP)

**Faculty Mentor:** Hillary Friedman,  
Department of American Studies

**Poster Title:** A Pictorial Analysis of  
Hegemonic Femininity in Print Sources

*\*Presenting on Thursday, August 4*

### Lehidy Frias **Poster #A3**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate  
Teaching and Research Awards (UTRA)

**Faculty Mentor:** Jessaca Leinaweaver,  
Department of Anthropology  
**Poster Title:** Health, Race and Ethnicity:  
Media Perceptions of the aging population in  
Peru

### Jamila Gilmore **Poster #A4**

**Home Institution:** Brown University  
Summer Research Program: Institute at  
Brown for Environment and Society

**Faculty Mentor:** Leah Bamberger, Office of  
Sustainability & Dino Larson, Office of  
Sustainability

**Poster Title:** Recycling & Community  
Engagement

### Juliette Hernandez Carrasco **Poster #F15**

**Home Institution:** University of Puerto Rico  
at Ponce

Summer Research Program: Leadership  
Alliance-Summer Research Early  
Identification Program (SR-EIP)

**Faculty Mentors:** Lynn Hernandez,  
Department of Behavioral and Social Sciences  
& Judelysse Gomez, Department of  
Psychiatry and Human Behavior

**Poster Title:** Ethnic Differences in Parents'  
Interactions with their Alcohol Using  
Adolescents

*\*Presenting on Thursday, August 4*

### Evan Lehmann **Poster #A5**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate  
Teaching and Research Awards (UTRA)

**Faculty Mentor:** Robert Blair, Departments  
of International Affairs and Political Science



**Poster Title:** Peacekeeping, Statebuilding and the Rule of Law After Civil War

**Jessica O'Dell** **Poster #A6**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)

**Faculty Mentors:** Caroline Karp, Department of Environmental Studies & Ross Cheit, Department of Public Policy  
**Poster Title:** The Influence of Civil Society Actors on Fishery Management in the United States

**Caitlin Richard** **Poster #A7**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)  
**Faculty Mentor:** John Papay, Department of Education

**Poster Title:** Evaluation for Teacher Development: Exploring the Relationship between Features of Teacher Evaluation Systems and Teacher Improvement

## Physical Sciences

**Gabriel Buchsbaum** **Poster #A8**

**Home Institution:** Brown University  
Summer Research Program: Experimental Program to Stimulate Competitive Research (EPSCoR-NSF)

**Faculty Mentor:** Angus Kingon, Department of Engineering  
**Poster Title:** Investigation of Transport in Hybrid Perovskite MSM Devices

**Arseniy Butrin** **Poster #A9**

**Home Institution:** Tougaloo College  
Summer Research Program: Experimental Program to Stimulate Competitive Research (EPSCoR-NSF)

**Faculty Mentor:** Angus Kingon, Department of Engineering

**Poster Title:** Thermogravimetric studies on methylammonium lead iodide hybrid perovskite

**Sarah Cowles** **Poster #B1**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)

**Faculty Mentor:** Anita Shukla, Department of Biomedical Engineering  
**Poster Title:** A Novel Liposomal Formulation Targeting Opportunistic Fungi

**Anthony Daoud** **Poster #B2**

**Home Institution:** Brown University  
Summer Research Program: National Science Foundation (NSF) Research Experience for Undergraduates (REU)

**Faculty Mentor:** Benjamin Kimia, Department of Engineering  
**Poster Title:** GPU Implementation of a Curve Extraction Algorithm to Accelerate Object Recognition

**Jonathan Davies** **Poster #B3**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)

**Faculty Mentor:** Jason Sello, Department of Chemistry  
**Poster Title:** Development of Ugi Reaction Using Kemp's Triacid

**Kiran Dhatt Gauthier** **Poster #B4**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)

**Faculty Mentors:** Anita Shukla, Department of Engineering & Shashank Shukla, Department of Engineering  
**Poster Title:** Gellan-CENTA as a  $\beta$ -Lactamase Responsive Antimicrobial Hydrogel

**Renee Edelman** **Poster #B5**

**Home Institution:** Brown University

Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)  
**Faculty Mentor:** Elena Oancea, Department of Molecular Pharmacology, Physiology, and Biotechnology & Iliana Escobar, Department of Molecular Pharmacology, Physiology, and Biotechnology  
**Poster Title:** pH Regulation in Melanin Producing Organelles

**Joseph Fichera** **Poster #B10**

**Home Institution:** Brown University  
Summer Research Program: Research Assistant in the Department of Earth, Environmental, and Planetary Sciences  
**Faculty Mentor:** Marc Parmentier, Department of Earth, Environmental, and Planetary Sciences  
**Poster Title:** Flow of the Earth's Crust and Mantle in Strike-Slip Faults

**Samir Gadre** **Poster #B6**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)  
**Faculty Mentor:** Benjamin Kimia, Department of Engineering  
**Poster Title:** Design and Implementation of a Stereoscopic Visual Odometry Module

**Wendy Gonzalez** **Poster #B7**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)  
**Faculty Mentors:** Sherief Reda, Department of Computer Engineering & Reza Azimi, Department of Computer Engineering  
**Poster Title:** Energy-Efficient Computing Clusters for Cloud Applications

**Joshua Greene** **Poster #B8**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)  
**Faculty Mentors:** Alexander Zaslavsky, Department of Engineering & Kyung-Suk Kim, Department of Engineering

**Poster Title:** Electrical Characterization of Crinkled Graphene

**Bana Hadid** **Poster #B9**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)  
**Faculty Mentor:** Loren Fast, Department of Immuno-oncology  
**Poster Title:** Modeling Immunotherapy to Treat Leukemia

**Megan Hauptman** **Poster #C1**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)  
**Faculty Mentors:** Jason Sello, Department of Chemistry & Anubhav Tripathi, Department of Engineering  
**Poster Title:** Development of a Miniaturized HIV Oil Chip that Enables Adherence Monitoring of Antiretroviral Agents for HIV treatment and Prevention

**Patrick Heng** **Poster #C2**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)  
**Faculty Mentor:** Yongsong Huang, Department of Earth, Environmental, and Planetary Studies  
**Poster Title:** Identification of a Novel C36 Alkenone from Algae Haptophytes

**Alex Hirsch** **Poster #C3**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)  
**Faculty Mentor:** Rashid Zia, Departments of Engineering and Physics  
**Poster Title:** Extracting Two-dimensional Radiation Patterns from Wide-Angle Spectroscopic Images

**Oliver Isik** **Poster #C4**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)

**Faculty Mentor:** Derek Stein, Department of Physics

**Poster Title:** Spherical Virus Detection Using Nanoscale Capillaries

**William Klimpert** **Poster #C5**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)

**Faculty Mentor:** Jay Tang, Department of Biophysics

**Poster Title:** Bacterial Motility in Viscoelastic Media

**Sayaka Kochiyama** **Poster #C6**

**Home Institution:** Brown University  
Summer Research Program: IBES Internal Grant

**Faculty Mentors:** Robert Hurt, Department of Engineering & Zachary Saleeba, Department of Engineering

**Poster Title:** A New Laboratory-Scale Device for Investigating the Human Health Impacts of Biomass-Fired Domestic Cookstoves

**Monnawat Krasaesian** **Poster #C7**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)

**Faculty Mentor:** James Russell, Department of Earth, Environmental and Planetary Science

**Poster Title:** Reconstruction of Indo-Pacific Paleoclimate Using Elemental Chemistry

**Amy Lin** **Poster #C8**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)

**Faculty Mentor:** Sarah Delaney, Department of Chemistry

**Poster Title:** Determining Processivity of Uracil DNA Glycosylase in Nucleosome Core Particles

**Nicolas Lozada-Smith** **Poster #C9**

**Home Institution:** Brown University

Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)

**Faculty Mentor:** Daniel Mittleman, Department of Engineering

**Poster Title:** Terahertz The Last Frontier

**Lilibeth Martinez** **Poster #E5**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)

**Faculty Mentor:** Anubhav Tripathi, Department of Biomedical Engineering

**Poster Title:** Optimizing Bead Transfer Efficiency for an Immiscible Phase Filtration Separation Device

**Andrea Mastorakis** **Poster #E8**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)

**Faculty Mentor:** Meredith Hastings, Department of Earth, Environmental and Planetary Sciences

**Poster Title:** Investigation of nitrate sources and chemistry in the Arctic Ocean

**Rachel Meyen** **Poster #D2**

**Home Institution:** Rhode Island College  
Summer Research Program: Experimental Program to Stimulate Competitive Research (EPSCoR-NSF)

**Faculty Mentor:** Nitin Padture, Department of Engineering

**Poster Title:** Low-Cost Solution-Processed Perovskite Solar Cells Using Carbon Electrodes

**Lan Nguyen** **Poster #D3**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)

**Faculty Mentor:** Franklin Goldsmith, Department of Chemical and Biochemical Engineering

**Poster Title:** Developing a Molecular Model to Predict Equations of States from Computational Quantum Chemistry and Machine Learning

**Richard Oliver                      Poster #D4**

**Home Institution:** Brown University  
Summer Research Program: Space  
Grant/NASA, Undergraduate Teaching and  
Research Awards (UTRA)

**Faculty Mentor:** David Lowe, Department  
of Physics

**Poster Title:** Force-Free Electrodynamics  
Near the Event Horizon Of An Extremal  
Kerr Black Hole

**Maria Paredes                      Poster #F16**

**Home Institution:** Brown University  
Summer Research Program: Summer  
Research Assistantship in Biomedical Sciences

**Faculty Mentor:** Kareen Coulombe,  
Department of Engineering

**Poster Title:** Microcontact printing of cell  
shapes for quantitative analysis of hiPSCs  
cardiomyocytes maturation in aid of  
regenerative medicine

*\*Presenting on Thursday, August 4*

**Shivam Raikundalia                      Poster #D5**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate  
Teaching and Research Awards (UTRA)

**Faculty Mentor:** Jacob Rosenstein,  
Department of Engineering

**Poster Title:** Single Molecule  
Communications Channels

**Elliott Rosenberg                      Poster #D6**

**Home Institution:** Brown University  
Summer Research Program: Space  
Grant/NASA, Undergraduate Teaching and  
Research Awards (UTRA)

**Faculty Mentor:** Jiji Fan, Department of  
Physics

**Poster Title:** Double Disk Dark Matter

**Giorgio Savini Zangrandi                      Poster #D7**

**Home Institution:** Brown University  
Summer Research Program: Experimental  
Program to Stimulate Competitive Research  
(EPSCoR-NSF)

**Faculty Mentor:** Domenico Pacifici,  
Department of Engineering

**Poster Title:** Optical characterization of thin-  
film perovskites

**Julia Schoenewald                      Poster #D8**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate  
Teaching and Research Awards (UTRA)

**Faculty Mentor:** Alexander Jaworski,  
Department of Neuroscience

**Poster Title:** Genetic Fate Mapping of Spinal  
Commissural Neurons

**Matthew Shorter                      Poster #D9**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate  
Teaching and Research Awards (UTRA)

**Faculty Mentors:** Jennifer Franck,  
Department of Engineering & Franklin  
Goldsmith, Department of Engineering

**Poster Title:** Computational Fluid Dynamics  
of Novel Shock Tube Design

**Placid Unegbu                      Poster #E7**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate  
Teaching and Research Awards (UTRA)

**Faculty Mentor:** David Borton, Department  
of Engineering

**Poster Title:** Computational Model of  
Thalamic Neural Circuitry

**Constantin Wedekind                      Poster #E3**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate  
Teaching and Research Awards (UTRA)

**Faculty Mentor:** Xingsheng Ling,  
Department of Physics

**Poster Title:** Balancing Change and  
Conservation: Investigating Mechanisms of  
Genetic Mutation due to Pfu Polymerase  
through a Physical Lense

**Robert (Jake) Wyatt                      Poster #E2**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate  
Teaching and Research Awards (UTRA)

**Faculty Mentor:** Eric Suuberg, Department of Engineering

**Poster Title:** Vapor Intrusion of Soil and Groundwater Sources: An Evolving Environmental Concern

## Student Teams: Humanities

**Lena Bohman** **Poster #F18**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)

**Faculty Mentors:** Susan Smulyan, Department of American Studies & Ron Potvin, Department of Public Humanities  
**Poster Title:** What is Old is New Again: The Digital Tour of the Nightingale-Brown House  
Team Members: Minah Seo & Emily Taylor

*\*Presenting on Thursday, August 4*

**Minah Seo** **Poster #F18**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)

**Faculty Mentors:** Susan Smulyan, Department of American Studies & Ron Potvin, Department of Public Humanities  
**Poster Title:** What is Old is New Again: The Digital Tour of the Nightingale-Brown House  
Team Members: Lena Bohman & Emily Taylor

*\*Presenting on Thursday, August 4*

**Emily Taylor** **Poster #F18**

**Home Institution:** Southern Oregon University  
Summer Research Program: Leadership Alliance-Summer Research Early Identification Program (SR-EIP)

**Faculty Mentors:** Susan Smulyan, Department of American Studies & Ron Potvin, Department of Public Humanities  
**Poster Title:** What is Old is New Again: The Digital Tour of the Nightingale-Brown House  
Team Members: Lena Bohman & Minah Seo

*\*Presenting on Thursday, August 4*

## Student Teams: Life Sciences

**Maryam Ahmad** **Poster #E1**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)

**Faculty Mentors:** Jeffrey Morgan, Department of Molecular Pharmacology, Physiology, and Biotechnology & Kali Manning, Department of Biomedical Engineering

**Poster Title:** The Bio-Pick, Place, and Perfuse (Bio-P3): A New Instrument for Building Organs

Team Members: Andrew Thomson, Joy Jiang

**Marjo Beltoja** **Poster #E10**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)

**Faculty Mentors:** David Berson, Department of Neuroscience & Shai Sabbah, Department of Neuroscience

**Poster Title:** Synaptic Inputs to ipRGCs in the Mouse Retina

Team Members: Carin Papendorp, Elizabeth Koplas, Cameron Etebari

**Cameron Etebari** **Poster #E10**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)

**Faculty Mentors:** David Berson, Department of Neuroscience & Shai Sabbah, Department of Neuroscience

**Poster Title:** Synaptic Inputs to ipRGCs in the Mouse Retina

Team Members: Carin Papendorp, Elizabeth Koplas, Marjo Beltoja

**Joy Jiang** **Poster #E1**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)

**Faculty Mentor:** Jeffrey Morgan,  
Department of Molecular Pharmacology,  
Physiology, and Biotechnology & Kali  
Manning, Department of Biomedical  
Engineering

**Poster Title:** The Bio-Pick, Place, and  
Perfuse (Bio-P3): A New Instrument for  
Building Organs  
Team Members: Maryam Ahmad, Andrew  
Thomson

**Elizabeth Koplas** **Poster #E10**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate  
Teaching and Research Awards (UTRA)

**Faculty Mentors:** David Berson,  
Department of Neuroscience & Shai Sabbah,  
Department of Neuroscience

**Poster Title:** Synaptic Inputs to ipRGCs in  
the Mouse Retina  
Team Members: Carin Papendorp, Marjo  
Beltoja, Cameron Etebari

**Carin Papendorp** **Poster #E10**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate  
Teaching and Research Awards (UTRA)

**Faculty Mentors:** David Berson,  
Department of Neuroscience & Shai Sabbah,  
Department of Neuroscience

**Poster Title:** Synaptic Inputs to ipRGCs in  
the Mouse Retina  
Team Members: Elizabeth Koplas, Marjo  
Beltoja, Cameron Etebari

**Andrew Thomson** **Poster #E1**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate  
Teaching and Research Awards (UTRA)

**Faculty Mentors:** Jeffrey Morgan,  
Department of Molecular Pharmacology,  
Physiology, and Biotechnology & Kali  
Manning, Department of Biomedical  
Engineering

**Poster Title:** The Bio-Pick, Place, and  
Perfuse (Bio-P3): A New Instrument for  
Building Organs  
Team Members: Maryam Ahmad, Joy Jiang

**Maaike Tiersma** **Poster #E4**

**Home Institution:** Brown University  
Summer Research Program: Institute at  
Brown for Environment and Society  
Internship

**Faculty Mentor:** Jeanne Loewenstein,  
Institute at Brown for Environment and  
Society

**Poster Title:** Oyster Restoration in Southern  
Rhode Island  
Team Members: Ellen Vitek

**Ellyn Vitek** **Poster #E4**

**Home Institution:** Brown University  
Summer Research Program: Institute at  
Brown for Environment and Society  
Internship

**Faculty Mentor:** Jeanne Loewenstein,  
Institute at Brown for Environment and  
Society

**Poster Title:** Oyster Restoration in Southern  
Rhode Island  
Team Members: Maaike Tiersma

**Jonathan Yakubov** **Poster #F6**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate  
Teaching and Research Awards (UTRA)

**Faculty Mentor:** Edith Mathiowitz,  
Department of Molecular Pharmacology,  
Physiology, and Biotechnology

**Poster Title:** Investigation of Endothelial and  
Progenitor Cell Migration in Response to  
Cytokine Stimulation

Team Members: George Zhou

**George Zhou** **Poster #F7**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate  
Teaching and Research Awards (UTRA)

**Faculty Mentor:** Edith Mathiowitz,  
Department of Molecular Pharmacology,  
Physiology, and Biotechnology

**Poster Title:** Encapsulation of Citronella Oil  
in Polycaprolactone as a Controlled Release  
Mosquito Repellent

Team Members: Jonathan Yakubov

## Student Teams: Social Sciences

### Caroline Carper **Poster #D10**

**Home Institution:** Brown University  
Summer Research Program: Independent Research

**Faculty Mentors:** Jin Li, Department of Education & Yoko Yamamoto, Department of Education

**Poster Title:** Children's Learning Beliefs and Family Socialization Processes in Diverse Cultural Contexts

Team Members: Cadence Lee, Yanqing Shen, Amanda Siegel

### Cadence Lee **Poster #D10**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)

**Faculty Mentors:** Jin Li, Department of Education & Yoko Yamamoto, Department of Education

**Poster Title:** Children's Learning Beliefs and Family Socialization Processes in Diverse Cultural Contexts

Team Members: Amanda Siegel, Yanqing Shen, Caroline Carper

### Yanqing Shen **Poster #D10**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)

**Faculty Mentors:** Jin Li, Department of Education & Yoko Yamamoto, Department of Education

**Poster Title:** Children's Learning Beliefs and Family Socialization Processes in Diverse Cultural Contexts

Team Members: Cadence Lee, Amanda Siegel, Caroline Carper

### Amanda Siegel **Poster #D10**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)

**Faculty Mentors:** Jin Li, Department of Education & Yoko Yamamoto, Department of Education

**Poster Title:** Children's Learning Beliefs and Family Socialization Processes in Diverse Cultural Contexts

Team Members: Cadence Lee, Yanqing Shen, Caroline Carper

## Student Teams: Physical Sciences

### Madeline Abbott **Poster #D1**

**Home Institution:** Brown University  
Summer Research Program: Institute for Computational and Experimental Research in Mathematics (ICERM), Undergraduate Teaching and Research Awards (UTRA)

**Faculty Mentor:** Bjorn Stanstede, Department of Applied Mathematics

**Poster Title:** Zebrafish: Modelling Fin Patterns

Team Members: Francesca Lim, Dorothy Catey, Bethany Dubois, Neil Chandra

### Kevin Anderson **Poster #E9**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)

**Faculty Mentors:** Iris Bahar, Department of Engineering & Kenneth Breuer, Department of Engineering

**Poster Title:** ENGN 1931I: Designing Robotic Systems

Team Members: Rohan Rastogi

### Colette Bare **Poster #F2, F3, F4**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)

**Faculty Mentors:** Domenico Pacifici, Department of Engineering & Nitin Padture, Department of Engineering, & Angus Kingon, Department of Engineering & Rashid Zia, Department of Engineering

**Poster Title:** The Next-Generation Solar Cells for the Clean Energy Revolution: Part I, II, & III

Team Members: Sophia Gluskin-Braun, Anjelica Claxton, Mollie Koval, Isabelle Bauman, Connor Watts

**Isabelle Bauman      Poster #F2, F3, F4**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)

**Faculty Mentors:** Domenico Pacifici, Department of Engineering & Nitin Padture, Department of Engineering, & Angus Kingon, Department of Engineering & Rashid Zia, Department of Engineering

**Poster Title:** The Next-Generation Solar Cells for the Clean Energy Revolution: Part I, II, & III

Team Members: Sophia Gluskin-Braun, Anjelica Claxton, Mollie Koval, Colette Bare, Connor Watts

**Julia Bujalski      Poster #C10**

**Home Institution:** University of Virginia  
Summer Research Program: Institute for Computational and Experimental Research in Mathematics (ICERM)

**Faculty Mentors:** Todd Kapitula, Institute for Computational and Experimental Research in Mathematics & Bjorn Sandstede, Department of Applied Mathematics

**Poster Title:** True Believer Models and The Spread of Ideas

Team Members: Harjasleen Malvai, Grace Dwyer, Jordan Rosenthal-Kay

**Dorothy Catey      Poster #D1**

**Home Institution:** Brown University  
Summer Research Program: Institute for Computational and Experimental Research in Mathematics (ICERM), Undergraduate Teaching and Research Awards (UTRA)

**Faculty Mentor:** Bjorn Stanstede, Department of Applied Mathematics

**Poster Title:** Zebrafish: Modelling Fin Patterns

Team Members: Francesca Lim, Madeline Abbott, Bethany Dubois, Neil Chandra

**Carter Chain      Poster #F5**

**Home Institution:** Purdue University  
Summer Research Program: Institute for Computational and Experimental Research in Mathematics (ICERM)

**Faculty Mentors:** Bjorn Sandstede, Department of Applied Mathematics

**Poster Title:** Spectral Theory of Koopman Operators

Team Members: Ryan Utke, Micah Pedrick

**Neil Chandra      Poster #D1**

**Home Institution:** Brown University  
Summer Research Program: Institute for Computational and Experimental Research in Mathematics (ICERM), Undergraduate Teaching and Research Awards (UTRA)

**Faculty Mentor:** Bjorn Stanstede, Department of Applied Mathematics

**Poster Title:** Zebrafish: Modelling Fin Patterns

Team Members: Francesca Lim, Dorothy Catey, Madeline Abbott, Bethany Dubois

**Tracy Chin      Poster #F10**

**Home Institution:** Brown University  
Summer Research Program: Institute for Computational and Experimental Research in Mathematics (ICERM)

**Faculty Mentor:** Bjorn Sandstede, Department of Applied Mathematics

**Poster Title:** Diffusion Maps in Equation Free Modeling

Team Members: Jacob Ruth, Rebecca Santorella

**Anjelica Claxton      Poster #F2, F3, F4**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)

**Faculty Mentors:** Domenico Pacifici, Department of Engineering & Nitin Padture, Department of Engineering, & Angus Kingon, Department of Engineering & Rashid Zia, Department of Engineering



**Poster Title:** The Next-Generation Solar Cells for the Clean Energy Revolution: Part I, II, & III

Team Members: Sophia Gluskin-Braun, Mollie Koval, Colette Bare, Isabelle Bauman, Connor Watts

**Cassandra Cole** **Poster #F1**

**Home Institution:** Brown University  
Summer Research Program: Institute for Computational and Experimental Research in Mathematics (ICERM)

**Faculty Mentor:** Bjorn Sandstede, Department of Applied Mathematics

**Poster Title:** Stability in Agent-Based Models  
Team Members: Philip Doldo, Qing Fan

**Jordan Collignon** **Poster #F8**

**Home Institution:** California State University, Monterey Bay  
Summer Research Program: Institute for Computational and Experimental Research in Mathematics (ICERM)

**Faculty Mentors:** Todd Kapitula, Departments of Mathematics and Statistics & Bjorn Sanstede, Department of Applied Mathematics

**Poster Title:** Propagation of Lead in Mammals  
Team Members: Melissa Morrissey

**Neville Dadina** **Poster #E6**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)

**Faculty Mentor:** Kathleen Hess, Department of Chemistry

**Poster Title:** Green chemistry: Good practices for Undergraduate Organic Laboratories and a Freshmen Seminar  
Team Members: Bowie Lee

**Surabhi Desai** **Poster #F9**

**Home Institution:** University of St Andrews  
Summer Research Program: Institute for Computational and Experimental Research in Mathematics (ICERM)

**Faculty Mentors:** Bjorn Sandstede, Department of Applied Mathematics & Margaret Beck, Department of Mathematics at Boston University

**Poster Title:** Snaking for Non Orientable Floquet Bundles

Team Members: Melissa Stadt, Aric Wheeler

**Philip Doldo** **Poster #F1**

**Home Institution:** Rensselaer Polytechnic Institute

Summer Research Program: Institute for Computational and Experimental Research in Mathematics (ICERM)

**Faculty Mentor:** Bjorn Sandstede, Department of Applied Mathematics

**Poster Title:** Stability in Agent-Based Models  
Team Members: Qing Fan, Cassandra Cole

**Bethany Dubois** **Poster #D1**

**Home Institution:** Brown University  
Summer Research Program: Institute for Computational and Experimental Research in Mathematics (ICERM), Undergraduate Teaching and Research Awards (UTRA)

**Faculty Mentor:** Bjorn Stanstede, Department of Applied Mathematics

**Poster Title:** Zebrafish: Modelling Fin Patterns

Team Members: Francesca Lim, Dorothy Catey, Madeline Abbott, Neil Chandra

**Grace Dwyer** **Poster #C10**

**Home Institution:** University of Virginia  
Summer Research Program: Institute for Computational and Experimental Research in Mathematics (ICERM)

**Faculty Mentors:** Todd Kapitula, Institute for Computational and Experimental Research in Mathematics & Bjorn Sandstede, Department of Applied Mathematics

**Poster Title:** True Believer Models and The Spread of Ideas

Team Members: Harjasleen Malvai, Julia Bujalski, Jordan Rosenthal-Kay

**Qing Fan** **Poster #F1**

**Home Institution:** Pomona College

Summer Research Program: Institute for Computational and Experimental Research in Mathematics (ICERM)

**Faculty Mentor:** Bjorn Sandstede, Department of Applied Mathematics

**Poster Title:** Stability in Agent-Based Models  
Team Members: Philip Doldo, Cassandra Cole

**Sophia Gluskin-Braun Poster #F2, F3, F4**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)

**Faculty Mentors:** Domenico Pacifici, Department of Engineering & Nitin Padture, Department of Engineering, & Angus Kingon, Department of Engineering & Rashid Zia, Department of Engineering

**Poster Title:** The Next-Generation Solar Cells for the Clean Energy Revolution: Part I, II, & III

Team Members: Anjelica Claxton, Mollie Koval, Colette Bare, Isabelle Bauman, Connor Watts

**Chinedu Irofuala Poster #F1**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)

**Faculty Mentor:** Kareen Coulombe, Department of Engineering

**Poster Title:** Inducing Collapse of Custom Designed Valveless Vessels to Promote Directional Flow

Team Members: Jackie Vu

*\*Presenting on Thursday, August 4*

**Mollie Koval Poster #F2, F3, F4**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)

**Faculty Mentors:** Domenico Pacifici, Department of Engineering & Nitin Padture, Department of Engineering, & Angus Kingon, Department of Engineering & Rashid Zia, Department of Engineering

**Poster Title:** The Next-Generation Solar Cells for the Clean Energy Revolution: Part I, II, & III

Team Members: Sophia Gluskin-Braun, Anjelica Claxton, Colette Bare, Isabelle Bauman, Connor Watts

**Bowie Lee Poster #E6**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)

**Faculty Mentor:** Kathleen Hess, Department of Chemistry

**Poster Title:** Green chemistry: Good practices for Undergraduate Organic Laboratories and a Freshmen Seminar  
Team Members: Neville Dadina

**Francesca Lim Poster #D1**

**Home Institution:** Brown University  
Summer Research Program: Institute for Computational and Experimental Research in Mathematics (ICERM), Undergraduate Teaching and Research Awards (UTRA)

**Faculty Mentor:** Bjorn Stanstede, Department of Applied Mathematics  
**Poster Title:** Zebrafish: Modelling Fin Patterns

Team Members: Dorothy Catey, Madeline Abbott, Bethany Dubois, Neil Chandra

**Harjasleen Malvai Poster #C10**

**Home Institution:** Brown University  
Summer Research Program: Institute for Computational and Experimental Research in Mathematics (ICERM)

**Faculty Mentors:** Todd Kapitula, Institute for Computational and Experimental Research in Mathematics & Bjorn Sandstede, Department of Applied Mathematics

**Poster Title:** True Believer Models and The Spread of Ideas

Team Members: Jordan Rosenthal-Kay, Julia Bujalski, Grace Dwyer

**Melissa Morrissey Poster #F8**

**Home Institution:** Brown University

Summer Research Program: Institute for Computational and Experimental Research in Mathematics (ICERM)

**Faculty Mentors:** Todd Kapitula, Departments of Mathematics and Statistics & Bjorn Sandstede, Department of Applied Mathematics

**Poster Title:** Propagation of Lead in Mammals

Team Members: Jordan Collignon

**Micah Pedrick** **Poster #F5**

**Home Institution:** Harvey Mudd College  
Summer Research Program: Institute for Computational and Experimental Research in Mathematics (ICERM)

**Faculty Mentors:** Bjorn Sandstede, Department of Applied Mathematics

**Poster Title:** Spectral Theory of Koopman Operators

Team Members: Ryan Utke, Carter Chain

**Rohan Rastogi** **Poster #E9**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRA)

**Faculty Mentors:** Iris Bahar, Department of Engineering & Kenneth Breuer, Department of Engineering

**Poster Title:** ENGN 1931I: Designing Robotic Systems

Team Members: Kevin Anderson

**Jordan Rosenthal-Kay** **Poster #C10**

**Home Institution:** Tufts University  
Summer Research Program: Institute for Computational and Experimental Research in Mathematics (ICERM)

**Faculty Mentors:** Todd Kapitula, Institute for Computational and Experimental Research in Mathematics & Bjorn Sandstede, Department of Applied Mathematics

**Poster Title:** True Believer Models and The Spread of Ideas

Team Members: Harjasleen Malvai, Julia Bujalski, Grace Dwyer

**Jacob Ruth** **Poster #F10**

**Home Institution:** Brown University  
Summer Research Program: Institute for Computational and Experimental Research in Mathematics (ICERM)

**Faculty Mentor:** Bjorn Sandstede, Department of Applied Mathematics

**Poster Title:** Diffusion Maps in Equation Free Modeling

Team Members: Tracy Chin, Rebecca Santorella

**Rebecca Santorella** **Poster #F10**

**Home Institution:** The College of New Jersey

Summer Research Program: Institute for Computational and Experimental Research in Mathematics (ICERM)

**Faculty Mentor:** Bjorn Sandstede, Department of Applied Mathematics

**Poster Title:** Diffusion Maps in Equation Free Modeling

Team Members: Jacob Ruth, Tracy Chin

**Melissa Stadt** **Poster #F9**

**Home Institution:** University of Washington-Seattle

Summer Research Program: Institute for Computational and Experimental Research in Mathematics (ICERM)

**Faculty Mentor:** Bjorn Sandstede, Department of Applied Mathematics & Margaret Beck, Department of Mathematics at Boston University

**Poster Title:** Snaking for Non Orientable Floquet Bundles

Team Members: Surabhi Desai, Aric Wheeler

**Ryan Utke** **Poster #F5**

**Home Institution:** Grinnell College  
Summer Research Program: Institute for Computational and Experimental Research in Mathematics (ICERM)

**Faculty Mentors:** Bjorn Sandstede, Department of Applied Mathematics

**Poster Title:** Spectral Theory of Koopman Operators

Team Members: Micah Pedrick, Carter Chain

**Jackie Vu** **Poster #F1**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate  
Teaching and Research Awards (UTRA)

**Faculty Mentor:** Kareen Coulombe,  
Department of Engineering

**Poster Title:** Inducing Collapse of Custom  
Designed Valveless Vessels to Promote  
Directional Flow

Team Members: Chinedu Irofuala

\*Presenting on Thursday, August 4

**Connor Watts** **Poster #F2, F3, F4**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate  
Teaching and Research Awards (UTRA)

**Faculty Mentors:** Domenico Pacifici,  
Department of Engineering & Nitin Padture,  
Department of Engineering, & Angus  
Kington, Department of Engineering &  
Rashid Zia, Department of Engineering

**Poster Title:** The Next-Generation Solar  
Cells for the Clean Energy Revolution: Part I,  
II, & III

Team Members: Sophia Gluskin-Braun,  
Anjelica Claxton, Mollie Koval, Colette Bare,  
Isabelle Bauman

**Aric Wheeler** **Poster #F9**

**Home Institution:** UNC Chapel Hill  
Summer Research Program: Institute for  
Computational and Experimental Research in  
Mathematics (ICERM)

**Faculty Mentors:** Bjorn Sandstede,  
Department of Applied Mathematics &  
Margaret Beck, Department of Mathematics  
at Boston University

**Poster Title:** Snaking for Non Orientable  
Floquet Bundles

Team Members: Melissa Stadt, Surabhi Desai

## SUMMER RESEARCH PROGRAMS AT BROWN

Generous support for the undergraduate summer research presented in this symposium has been provided by:

- American Physiological Society
- BP-Endure
- Brown-Tougaloo Partnership
- Dean's Award Program
- Experimental Program to Stimulate Competitive Research (EPSCoR-NSF)
- IBES Internal Grant
- Institute at Brown for Environment and Society
- Institute for Computational and Experimental Research in Mathematics (ICERM)
- Leadership Alliance-Summer Research Early Identification Program (SR-EIP)
- LINK Awards
- National Science Foundation (NSF) Research Experience for Undergraduates (REU)
- Royce Fellows
- Solsbery Fellowship
- Space Grant/NASA
- Summer Research Assistantship in Biomedical Sciences
- Summer Training in Academic Research and Scholarship (STARS) program, Brigham and Women's Hospital
- Undergraduate Teaching and Research Awards (UTRA)
- University of Georgia REU: Population Biology of Infectious Diseases
- Weiss-Sippelle Summer Undergraduate Fellows

POSTER LAYOUT  
Thursday, August 4  
Humanities and Life Sciences

**[STAGE]**

A1		B1	C1		D1	E1		F1
A2		B2	C2		D2	E2		F2
A3		B3	C3		D3	E3		F3
A4		B4	C4		D4	E4		F4
A5		B5	C5		D5	E5		F5
A6		B6	C6		D6	E6		F6
A7		B7	C7		D7	E7		F7
A8		B8	C8		D8	E8		F8
A9		B9	C9		D9	E9		F9
A10		B10	C10		D10	E10		F10
A11		B11	C11		D11	E11		F11
A12		B12	C12		D12	E12		F12
A13		B13	C13		D13	E13		F13
A14		B14	C14		D14	E14		F14
A15		B15	C15		D15	E15		F15
A16		B16	C16		D16	E16		F16
A17		B17	C17		D17	E17		F17
			C18		D18	E18		F18

**[ENTRANCE]**

**[LOBBY]**

POSTER LAYOUT  
Friday, August 5  
Physical and Social Sciences & Student Teams

**[STAGE]**

A1		B1	C1		D1	E1		F1
A2		B2	C2		D2	E2		F2
A3		B3	C3		D3	E3		F3
A4		B4	C4		D4	E4		F4
A5		B5	C5		D5	E5		F5
A6		B6	C6		D6	E6		F6
A7		B7	C7		D7	E7		F7
A8		B8	C8		D8	E8		F8
A9		B9	C9		D9	E9		F9
		B10	C10		D10	E10		F10

**[ENTRANCE]**

**[LOBBY]**

## REPRESENTED INSTITUTIONS

- Brown University
- California State University, Long Beach
- Claflin University
- College of Mount Saint Vincent
- Columbia University
- DePaul University
- Emmanuel College
- Grinnell College
- Harvey Mudd College
- Hunter College
- John Jay College
- LaGuardia Community College
- Macalester College
- North Carolina Agricultural and Technical State University
- NYU
- Pomona College
- Princeton University
- Purdue University
- Rensselaer Polytechnic Institute
- Rhode Island College
- Rider University
- Roger Williams University
- San Francisco State University
- Southern Oregon University
- Stanford University
- SUNY Plattsburgh
- The College of New Jersey
- The College of Wooster
- The University of Texas at Austin
- Tougaloo College
- Tufts
- UNC Chapel Hill
- Universidad de Puerto Rico - Aguadilla
- University of Arizona
- University of Central Florida
- University of Idaho
- University of Maryland, Baltimore County
- University of Maryland, College Park
- University of Portland
- University of Puerto Rico at Ponce
- University of San Diego
- University of South Florida St. Petersburg
- University of St Andrews
- University of Virginia
- University of Washington-Seattle
- Xavier University of Louisiana



## SYMPOSIUM ORGANIZERS

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## ACKNOWLEDGEMENTS

Christina Paxson, President

Richard Locke, Provost

Maud Mandel, Dean of the College

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