Summer Research Symposium

Sayles Hall
11:00 a.m. to 1 p.m.

Thursday, August 7
Life Sciences and Humanities

&

Friday, August 8
Physical and Social Sciences

PRESENTED BY
The Office of the Dean of the College
Summer Research Symposium
Sayles Hall
Main Green

Thursday, August 7

*Life Sciences and Humanities Posters*

11:00-11:10 a.m  Welcome
Dean Oludurotimi Adetunji

11:10-11:20 a.m  Brief remarks
Dean of the College Maud Mandel

11 a.m.-1 p.m.  Research Poster Presentations

Friday, August 8

*Physical and Social Sciences Posters*

11:00–11:10 a.m: Welcome
Dean Oludurotimi Adetunji

11:10-11:20 a.m  Brief remarks
Dean of the College Maud Mandel

11:00 a.m.-1 p.m. 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 7
Humanities & Life Sciences

Humanities

Noah Fields Poster #A1
Home Institution: Brown University
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)
Faculty Mentor: Professor Nancy Rosenberg, Department of Music
Poster Title: Wonder World: Philosophical Adventures through Children’s Musical Theater

Alexander Meehan Poster #A2
Home Institution: Brown University
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)
Faculty Mentor: Professor Nina Emery, Department of Philosophy
Poster Title: The Philosophy of Time

Life Sciences

Shubh Agrawal Poster #A8
Home Institution: Brown University
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)
Faculty Mentor: Professor Megan Ranney, Department of Emergency Medicine
Poster Title: iDove: Developing a Text-Message Based Intervention for Depression and Violence Prevention

Danielle Alvarez Poster #G15
Home Institution: Brown University
Summer Research Program: Howard Hughes Medical Institute (HHMI)
Faculty Mentor: Professor Robert Reenan, Department of Molecular Biology, Cellular Biology and Biochemistry
Poster Title: Characterization and Suppression of SOD1-mediated ALS

Faculty Mentor: Professor Mark Johnson and Professor Alison DeLong, Department of Molecular, Cellular Biology and Biochemistry
Poster Title: Characterizing the phenotypic response of pollen tubes of thermotolerant Solanum Lycopersicum lines to heat stress in vitro

Ada Bersoza Hernandez Poster #A3
Home Institution: Brown University
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs), Voss Environmental Fellows
Faculty Mentor: Professor Dov Sax, Department of Ecology and Evolutionary Biology
Poster Title: Comparison of Latitudinal and Elevational Range Limits of North American Plant Species: Exploring the Role of Climate in Limiting Range Boundaries

Sydney Blattman Poster #A10
Home Institution: Brown University
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)
Faculty Mentor: Professor Edward Hawrot, Department of Molecular Pharmacology, Physiology and Biotechnology
Poster Title: Western Blot Analysis of Proteins Interacting with the α7 Nicotinic Acetylcholine Receptor

Godwin Boaful Poster #A14/A15
Home Institution: Brown University
Summer Research Program: Howard Hughes Medical Institute (HHMI)
Faculty Mentor: Professor Robert Reenan, Department of Molecular Biology, Cellular Biology and Biochemistry
Poster Title: Characterization and Suppression of SOD1-mediated ALS
Phenotype in Drosophila Melanogaster Knock-in Model/Analysis of Transcriptome Profile and Specific RNA Editing in Drosophila ALS Model With SOD1 Mutations

**Sonia Boor** Poster #B5
**Home Institution:** Brown University
**Summer Research Program:** Undergraduate Teaching and Research Awards (UTRAs)
**Faculty Mentor:** Professor Erica Larschan, Department of Molecular Biology, Cellular Biology, and Biochemistry
**Poster Title:** Factors influencing CLAMP-dependent dosage compensation

**Samantha Brady** Poster #B1
**Home Institution:** Brown University
**Summer Research Program:** National Science Foundation Research Experiences for Undergraduates (NSF REU)
**Faculty Mentor:** Professor Diane Hoffmann-Kim, Department of Molecular Pharmacology, Physiology, and Biotechnology
**Poster Title:** Investigating the Response of Fibroblasts to Environmental Forces: An in vitro Platform to Study Migration and Wound Healing

**Kirsten Bredvik** Poster #A14/A15
**Home Institution:** Brown University
**Summer Research Program:** Howard Hughes Medical Institute (HHMI)
**Faculty Mentor:** Professor Robert Reenan, Department of Molecular Biology, Cell Biology and Biochemistry
**Poster Title:** Characterization and Suppression of SOD1-mediated ALS Phenotype in Drosophila Melanogaster Knock-in Model/Analysis of Transcriptome Profile and Specific RNA Editing in Drosophila ALS Model With SOD1 Mutations

**Alyssa Browning** Poster #A4
**Home Institution:** Brown University
**Summer Research Program:** Voss Environmental Fellows
**Faculty Mentor:** Professor Christopher Neill, Department of Ecology and Evolutionary Biology
**Poster Title:** From putting greens to preserves: habitat connectivity and pollinators on Martha’s Vineyard, MA

**Julia Bu** Poster #A11
**Home Institution:** Brown University
**Summer Research Program:** Undergraduate Teaching and Research Awards (UTRAs)
**Faculty Mentor:** Professor Tom Bartnikas, Department of Pathology and Lab Medicine
**Poster Title:** Iron Metabolism in the Brain of the Hypotransferrinemic Mouse

**Jieyi Cai** Poster #E12
**Home Institution:** Brown University
**Summer Research Program:** Howard Hughes Medical Institute (HHMI)
**Faculty Mentor:** Professor Jeffrey Morgan, Department of Molecular Pharmacology, Physiology and Biotechnology
**Poster Title:** Duration of Action of Gap Junction Inhibiting Drugs

**Arturo Cardenas** Poster #A12
**Home Institution:** Brown University
**Summer Research Program:** Undergraduate Teaching and Research Awards (UTRAs)
**Faculty Mentor:** Professor William Warren, Department of Cognitive, Linguistic & Psychological Sciences
**Poster Title:** Analyzing Motion-Capture Data on the Collective Behavior of Human Crowds

**Gabriel Castro** Poster #B9
**Home Institution:** Brown University
**Summer Research Program:** Undergraduate Teaching and Research Awards (UTRAs)
**Faculty Mentor:** Professor Erica Shai Sabbah and Professor David Berson, Department of Neuroscience
**Poster Title:** Identification of ON-DS ganglion cell directional preference and connectivity
Charlene Chabata  Poster #F15
Home Institution: Brown University
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)
Faculty Mentor: Professor Nicolas Fawzi, Department of Molecular Pharmacology, Physiology and Biotechnology
Poster Title: Determining the structure and interactions of prion-like domains of ALS-associated RNA-binding proteins

Jacqueline Chang  Poster #B15
Home Institution: Brown University
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)
Faculty Mentor: Professor Edith Mathiowitz, Department of Molecular Pharmacology, Physiology and Biotechnology
Poster Title: Tracking the Untraceable: Monitoring the Biodistribution and Toxicity of Nanoparticles in Organ Systems

Stephanie Choo  Poster #B15
Home Institution: Brown University
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)
Faculty Mentor: Professor Edith Mathiowitz and Professor Ve Leandre, Department of Molecular Pharmacology, Physiology and Biotechnology
Poster Title: Tracking the Untraceable: Monitoring the Biodistribution and Toxicity of Nanoparticles in Organ Systems

Timothy Chou  Poster #B12
Home Institution: Brown University
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)
Faculty Mentor: Professor Wayne Bowen, Department of Molecular Pharmacology, Physiology and Biotechnology
Poster Title: Determining Aggregation Rates of Breast Cancer Cell Lines Using a Novel 3D Cell Culture Technology

Grace Cinderella  Poster #G15
Home Institution: Brown University
Summer Research Program: Howard Hughes Medical Institute (HHMI)
Faculty Mentor: Professor Mark Johnson and Professor Alison DeLong, Department of Molecular, Cellular Biology and Biochemistry
Poster Title: Characterizing the phenotypic response of pollen tubes of thermotolerant Solanum Lycopersicum lines to heat stress in vitro

Ineshia Coleman  Poster #B13
Home Institution: Tougaloo College
Summer Research Program: Independent research
Faculty Mentor: Professor Alison DeLong, Department of Molecular, Cellular Biology and Biochemistry
Poster Title: Knocking Down Bs: Using Artificial microRNAs to Alter Phosphatase Regulation

Samuel Angelo Crisanto  Poster #B14
Home Institution: Brown University
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)
Faculty Mentor: Professor William Warren, Department of Cognitive Linguistic & Psychological Sciences
Poster Title: The Relationship between Energetic Efficiency and Dynamic Stability in Human Movement

Sinéad Crotty  Poster #B11
Home Institution: Brown University
Summer Research Program: Voss Environmental Fellows
Faculty Mentor: Professor Mark Bertness, Department of Environmental Ecology and Biology
Poster Title:
David Deckey  Poster #C4
**Home Institution:** Brown University
Summer Research Program: Royce Fellows
**Faculty Mentor:** Professor Christopher Born and Professor Dioscaris Garcia, Department of Orthopedics
**Poster Title:** The Characterization of Biofilm Formation on Spinal Implants of Varying Compositions

Tyler Devlin  Poster #C12/C13
**Home Institution:** Brown University
Summer Research Program: Howard Hughes Medical Institute (HHMI)
**Faculty Mentor:** Professor David Rand, Department of Ecology and Evolutionary Biology
**Poster Title:** Mitonuclear AxGxE: Age-, genotype- and diet-dependent starvation tolerance as an indicator of health span in Drosophila/ Understanding aging by investigating genes, diet, and biochemistry in Drosophila

Julia Dewey  Poster #C15
**Home Institution:** Brown University
Summer Research Program: Howard Hughes Medical Institute (HHMI)
**Faculty Mentor:** Professor David Rand, Department of Biology
**Poster Title:** Mitochondrial metabolism in organisms and organelles: Mitochondrial, nuclear and dietary modifiers of respiration Drosophila

Baxter DiFabrizio  Poster #C7
**Home Institution:** Brown University
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)
**Faculty Mentor:** Professor Bertram Malle, Department of Cognitive, Linguistic and Psychological Sciences
**Poster Title:** Unlocking Theory of Mind

Caroline Doherty  Poster #B2
**Home Institution:** Brown University
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)
**Faculty Mentor:** Professor Erica Larschan, Department of Molecular Biology, Cellular Biology and Biochemistry
**Poster Title:** Generating a CLAMP Mutant Using the CRISPR/Cas9 System

Austin Draycott  Poster #C8
**Home Institution:** Brown University
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)
**Faculty Mentor:** Professor Mark Johnson, Department of Molecular, Cellular Biology and Biochemistry
**Poster Title:** Towards Thermotolerant Tomato Reproduction

Margaret Dushko  Poster #C9
**Home Institution:** Brown University
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)
**Faculty Mentor:** Professor Elena Oancea, Department of Molecular Pharmacology, Physiology and Biotechnology
**Poster Title:** Localization of human opsin 3 (OPN3) constructs in human epidermal melanocytes

Henry Fox  Poster #C3
**Home Institution:** Brown University
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)
**Faculty Mentor:** Professor Christopher Born, Department of Orthopedics
**Poster Title:** Visualization and quantification of bacterial biofilm on orthopaedic trauma explants

Julia Franckh  Poster #C10
**Home Institution:** Brown University
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)
**Faculty Mentor:** Professor Bertram Malle and Professor Fiery Cushman, Department of
Cognitive, Linguistic and Psychological Sciences

**Poster Title:** Is guilt self-blame?

**Brian Franklin**  
**Poster #C12/C13**

**Home Institution:** Brown University  
Summer Research Program: Howard Hughes Medical Institute (HHMI)  
**Faculty Mentor:** Professor David Rand and Professor Lei Zhu, Department of Ecology and Evolutionary Biology

**Poster Title:** Mitonuclear AxGxE: Age-, genotype- and diet-dependent starvation tolerance as an indicator of health span in Drosophila/ Understanding aging by investigating genes, diet, and biochemistry in Drosophila

**Michael Franklin**  
**Poster #C11**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)  
**Faculty Mentor:** Professor Stephen Helfand, Department of Molecular, Cellular Biology and Biochemistry

**Poster Title:** Investigating the Role of a Somatic piRNA Pathway in Drosophila melanogaster Fat Body

**Samuel Friedman**  
**Poster #C2**

**Home Institution:** Brown University  
Summer Research Program: CR Bard Fellowship  
**Faculty Mentor:** Professor Jacob Rosenstein and Professor Anubhav Tripathi, Department of Engineering

**Poster Title:** Automation of Magnetic Bead Movement for Molecular Biology Platforms

**Matthew Gasteiger**  
**Poster #C1**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)  
**Faculty Mentor:** Professor Gerwald Jogi, Department of Molecular Biology, Cellular Biology and Biochemistry

**Poster Title:** Utilizing X-ray Crystallography to Elucidate the Structure of Antibiotic Dependent Ribosomes

**Nimesha Gerlus**  
**Poster #E13**

**Home Institution:** Brown University  
Summer Research Program: Howard Hughes Medical Institute (HHMI)  
**Faculty Mentor:** Professor Jeffrey Morgan, Department of Molecular Pharmacology, Physiology and Biotechnology

**Poster Title:** Synergistic Effects and Chimeric Spheroids

**James Giarraputo**  
**Poster #C5**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)  
**Faculty Mentor:** Professor Barry Lester, Department of Psychiatry & Human Behavior

**Poster Title:** Impact of Medical Condition on DNA Methylation of NR3C1 and on Neurobehavior in Premature Infants

**Holly Gildea**  
**Poster #C6**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)  
**Faculty Mentor:** Professor Alexander Jaworski, Department of Neuroscience

**Poster Title:** Function of the Axon Guidance Molecule NELL2

**Emily Gleason**  
**Poster #D1**

**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)  
**Faculty Mentor:** Professor Joseph Austerweil, Department of Cognitive, Linguistic and Psychological Sciences

**Poster Title:** How do categories affect feature learning?
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<td>Dana Goplerud</td>
<td>D2</td>
<td>Brown University</td>
<td>Undergraduate Teaching and Research Awards</td>
<td>Professor Loren Fast, Department of Hematology and Oncology</td>
<td>The Impact of Low-Dose Irradiation on Anti-Leukemic Responses</td>
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<td>Kathryn Graves</td>
<td>D3</td>
<td>Brown University</td>
<td>Undergraduate Teaching and Research Awards</td>
<td>Professor David Badre, Division of Cognitive, Linguistic and Psychological Sciences</td>
<td>Behavioral differences in a task-switching experiment with both novel and familiar sequences: a pilot study</td>
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<td>Ryan Greene</td>
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<td>Characterization and Suppression of SOD1-mediated ALS Phenotype in Drosophila Melanogaster Knock-in Model/Analysis of Transcriptome Profile and Specific RNA Editing in Drosophila ALS Model With SOD1 Mutations</td>
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<td>The Effects of Predator Depletion on Meiofauna</td>
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<td>Mitochondrial metabolism in organisms and organelles: Mitochondrial, nuclear and dietary modifiers of respiration Drosophila</td>
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<td>Mashfiq Hasan</td>
<td>D4</td>
<td>Brown University</td>
<td>Howard Hughes Medical Institute (HHMI)</td>
<td>Professor Carlos Aizenman, Department of Neuroscience</td>
<td>Probing Neurodevelopmental Changes from FMRP Knockdown in Xenopus Laevis Tadpoles through Behavior</td>
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<td>Dustin Hayden</td>
<td>D6</td>
<td>Brown University</td>
<td>Howard Hughes Medical Institute (HHMI)</td>
<td>Professor Anne Hart, Department of Neuroscience</td>
<td>The role of RGS proteins in sleep and arousal</td>
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<td>Elodi Healy</td>
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<td>Brown University</td>
<td>Howard Hughes Medical Institute (HHMI)</td>
<td>Professor Julie Kauer and Professor Abigail Polter, Department of</td>
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Molecular Pharmacology, Physiology and Biotechnology

Poster Title: Do phospho-p38 levels increase in the VTA of stressed animals?

Lucia Hernandez Poster #E14
Home Institution: Brown University
Summer Research Program: Howard Hughes Medical Institute (HHMI)
Faculty Mentor: Professor Jeffrey Morgan, Department of Molecular Pharmacology, Physiology and Biotechnology
Poster Title: Do phospho-p38 levels increase in the VTA of stressed animals?

Emma Herold Poster #D8
Home Institution: Brown University
Summer Research Program: Howard Hughes Medical Institute (HHMI)
Faculty Mentor: Professor Mark Johnson and Professor Alison DeLong, Department of Molecular Biology, Cellular Biology and Biochemistry
Poster Title: Do thermal tolerant tomato varieties have thermal tolerant reproductive systems? Measuring Solanum lycopersicum pollen tube growth under heat stress in vivo

Alicia Hersey Poster #D9
Home Institution: Brown University
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)
Faculty Mentor: Professor Betty Vohr, Department of Pediatrics
Poster Title: Investigating the influences of adolescent mothers’ accessibility and language level on infant outcomes

Nicholas Hilton Poster #D10
Home Institution: Brown University
Summer Research Program: Royce Fellows
Faculty Mentor: Professor Jonathan Kurtis, Department of Pathology
Poster Title: In vivo examination of PfSEA1 phosphorylation, a novel malaria vaccine candidate involved in host cell egress

Allan Huang Poster #D11
Home Institution: Brown University
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)
Faculty Mentor: Professor Jonathan Reichner, Department of Surgical Research
Poster Title: Integrin Crosstalk Regulation of Human Neutrophils Adhered to Fibronectin and Beta-glucan

Denis Huang Poster #D12
Home Institution: Brown University
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)
Faculty Mentor: Professor Richard Bennett, Department of Molecular Microbiology and Immunology
Poster Title: Isolation of Haploid Cells in Candida Tropicalis

Abigail Janke Poster #F15
Home Institution: Brown University
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)
Faculty Mentor: Professor Nicolas Fawzi, Department of Molecular Pharmacology, Physiology and Biotechnology
Poster Title: Determining the structure and interactions of prion-like domains of ALS-associated RNA-binding proteins

Arielle Johnson Poster #D8
Home Institution: Brown University
Summer Research Program: Howard Hughes Medical Institute (HHMI)
Faculty Mentor: Professor Mark Johnson and Professor Alison DeLong, Department of Molecular Biology, Cellular Biology and Biochemistry
Poster Title: Do thermal tolerant tomato varieties have thermal tolerant reproductive systems? Measuring Solanum lycopersicum pollen tube growth under heat stress in vivo
**David Johnson**  
*Poster #D15*

**Home Institution:** Brown University  
Summer Research Program:  
Howard Hughes Medical Institute (HHMI)  

**Faculty Mentor:** Professor Mark Johnson and Professor Alison DeLong, Department of Molecular Biology, Cellular Biology and Biochemistry  

**Poster Title:** Differential gene expression in Solanum lycopersicum pollen tubes following heat stress

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**Margaret Jordan**  
*Poster #A11*

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

**Faculty Mentor:** Professor Cynthia Loncar, Department of Pediatrics and Department of Psychiatry and Human Behavior  

**Poster Title:** Implications of the FIRST Study: Perinatal Maternal Depression, Mother-Infant Interactions, and Child Disruptive Behavior*  
*(scheduled to present on Friday, August 8)*

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**Ganaelle Joseph**  
*Poster #D14*

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

**Faculty Mentor:** Professor Nicole McLaughlin, Department of Psychiatry and Human Behavior  

**Poster Title:** Gender Differences and Pain

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**Jonathan Juliano**  
*Poster #D13*

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

**Faculty Mentor:** Professor Jeffrey Morgan, Department of Molecular Pharmacology, Physiology and Biotechnology and Professor Jacquelyn Schell, Department of Biology  

**Poster Title:** Engineering the Extracellular Matrix

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**Leo Kadota**  
*Poster #E13*

**Home Institution:** Brown University  
Summer Research Program:  
Howard Hughes Medical Institute (HHMI)  

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

**Poster Title:** Synergistic Effects and Chimeric Spheroids

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**Eric Kalosa-Kenyon**  
*Poster #E1*

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

**Faculty Mentor:** Professor Erika Edwards, Department of Ecology and Evolutionary Biology and Professor Govind Menon, Department of Applied Math  

**Poster Title:** How Leaves Got Their Shape

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**Katherine Kartheiser**  
*Poster #E2*

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

**Faculty Mentor:** Professor David Berson, Department of Neuroscience  

**Poster Title:** Illuminating Diversity: Rasgrp1 and Ras Signaling Specialization in ipRGCs

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**Charlotte Kim**  
*Poster #E15*

**Home Institution:** Brown University  
Summer Research Program:  
Howard Hughes Medical Institute (HHMI)  

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

**Poster Title:** An analysis of dose-dependent inhibition of gap junction intercellular communication by environmental contaminants in a 3D system

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**Seong Won Kim**  
*Poster #E3*

**Home Institution:** Brown University  
Summer Research Program:  
Undergraduate Teaching and Research Awards (UTRAs)
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<td>Professor William Fairbrother, Department of Molecular Biology, Cellular Biology and Biochemistry</td>
<td>Context Dependent Splicing of Disease Associated Genes</td>
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<td>Brown University</td>
<td>Summer Research Assistantship in Biomedical Sciences</td>
<td>Professor Wayne Bowen, Department of Molecular Pharmacology, Physiology and Biotechnology</td>
<td>Using proteasome inhibitors and sigma-2 receptor ligands for targeting brain cancer</td>
<td>Brown University</td>
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<td>The impact of viral/bacterial coinfection on macrophage function</td>
<td>Brown University</td>
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<td>Professor Edith Mathiowitz, Department of Molecular Pharmacology, Physiology and Biotechnology</td>
<td>Tracking the Untraceable: Monitoring the Biodistribution and Toxicity of Nanoparticles in Organ Systems</td>
<td>Brown University</td>
<td>Undergraduate Teaching and Research Awards (UTRAs)</td>
<td>Professor Gary Wessel, Department of Molecular Biology, Cellular Biology and Biochemistry</td>
<td>How to Make a Germ Cell: Gain by Loss</td>
<td>Brown University</td>
<td>Undergraduate Teaching and Research Awards (UTRAs)</td>
<td>Professor Kevin Bath, Department of Neuroscience</td>
<td>Effects of fragmented maternal care on anxiety and stress responding in mice</td>
<td>Brown University</td>
<td>Undergraduate Teaching and Research Awards (UTRAs)</td>
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</table>
**Faculty Mentor:** Professor Edith Mathiowitz, Department of Molecular Pharmacology, Physiology and Biotechnology  
**Poster Title:** Tracking the Untraceable: Monitoring the Biodistribution and Toxicity of Nanoparticles in Organ Systems

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**Justine Maher**  
**Poster #E11**  
**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)  
**Faculty Mentor:** Professor Philip Chan, Department of Medicine  
**Poster Title:** Surveillance of HIV and Other Sexually Transmitted Infections in Rhode Island: Implications for Outreach and Prevention

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**Rahim Makani**  
**Poster #B15**  
**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)  
**Faculty Mentor:** Professor Edith Mathiowitz, Department of Molecular Pharmacology, Physiology and Biotechnology  
**Poster Title:** Tracking the Untraceable: Monitoring the Biodistribution and Toxicity of Nanoparticles in Organ Systems

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**Matthew McAteer**  
**Poster #C12**  
**Home Institution:** Brown University  
Summer Research Program: Howard Hughes Medical Institute (HHMI)  
**Faculty Mentor:** Professor David Rand, Department of Ecology and Evolutionary Biology  
**Poster Title:** Mitonuclear AxGxE: Age-, genotype- and diet-dependent starvation tolerance as an indicator of health span in Drosophila

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**Hayley McClintock**  
**Poster #B1**  
**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)

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**Faculty Mentor:** Professor Diane Hoffman-Kim, Department of Molecular Pharmacology, Physiology, and Biotechnology  
**Poster Title:** Investigating the Response of Fibroblasts to Environmental Forces: An in vitro Platform to Study Migration and Wound Healing

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**Julia McGirr**  
**Poster #A13**  
**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)  
**Faculty Mentor:** Dr. Fusun Gundogan, Liver Research Center  
**Poster Title:** Epigenetic Effects on the Placenta of Fetal Exposure to Alcohol and Nicotine

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**Oliver McLellan**  
**Poster #B6**  
**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)  
**Faculty Mentor:** Professor Stephen Gatesy, Department of Biology  
**Poster Title:** Skeletons reanimated: avian validation of tyrannosaur pose reconstruction

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**Stephen McShane**  
**Poster #E15**  
**Home Institution:** Brown University  
Summer Research Program: Howard Hughes Medical Institute (HHMI)  
**Faculty Mentor:** Professor Jeffrey Morgan, Department of Molecular Pharmacology, Physiology and Biotechnology  
**Poster Title:** An analysis of dose-dependent inhibition of gap junction intercellular communication by environmental contaminants in a 3D system

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**Jonathan Moore**  
**Poster #B7**  
**Home Institution:** Tougaloo College  
Summer Research Program: Independent Researcher  
**Faculty Mentor:** Professor Mark Johnson and Professor Alexander Leydon, Department of Molecular Biology, Cellular Biology and Biochemistry
**Poster Title:** The Use of Genome Editing Technology to Delete a Repetitive Locus in Arabidopsis Thaliana

*Karla Navarrete*  
**Poster #A14/A15**  
**Home Institution:** Brown University  
Summer Research Program: Howard Hughes Medical Institute (HHMI)  
**Faculty Mentor:** Professor Robert Reenan, Department of Molecular Biology, Cellular Biology and Biochemistry  
**Poster Title:** Characterization and Suppression of SOD1-mediated ALS Phenotype in Drosophila Melanogaster Knock-in Model/Analysis of Transcriptome Profile and Specific RNA Editing in Drosophila ALS Model With SOD1 Mutations

*Natasha Nelson*  
**Poster #B8**  
**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)  
**Faculty Mentor:** Professor Richard Bennett, Department of MMI  
**Poster Title:** Analysis of C. Albicans Regulatory Proteins for Prion-like Functionality

*Elaine Nguyen*  
**Poster #F1**  
**Home Institution:** Brown University  
Summer Research Program: Sheridan Center Mentorship Program  
**Faculty Mentor:** Professor David Berson, Department of Neuroscience  
**Poster Title:** A novel pathway sends ambient light information to the periaqueductal grey

*Mary Nguyen*  
**Poster #E12**  
**Home Institution:** Brown University  
Summer Research Program: Howard Hughes Medical Institute (HHMI)  
**Faculty Mentor:** Professor Jeffrey Morgan, Department of Molecular Pharmacology, Physiology and Biotechnology  
**Poster Title:** Duration of Action of Gap Junction Inhibiting Drugs

*Jonathan Nicholas*  
**Poster #F2**  
**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)  
**Faculty Mentor:** Professor David Badre and Professor Chris Chatham, Department of Cognitive, Linguistic and Psychological Sciences  
**Poster Title:** The Temporal Dynamics of Working Memory

*Kate Nussenbaum*  
**Poster #F3**  
**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)  
**Faculty Mentor:** Professor Dima Amso, Department of Cognitive, Linguistic and Psychological Sciences  
**Poster Title:** The Role of Distractor Suppression in Explicit Learning and Memory

*Asa Ohsaki*  
**Poster #F4**  
**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)  
**Faculty Mentor:** Professor Zoltan Derdak, Department of Medicine  
**Poster Title:** Regulation of TIGAR protein through glucose and glutamine metabolism

*Oladele Ojo*  
**Poster #F5**  
**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)  
**Faculty Mentor:** Professor Julie Kauer, Department of Bio Molecular Pharmacology, Physiology and Biotechnology  
**Poster Title:** Mapping of TRPV-1 Expressing Dorsal Root Neurons in Lamina II

*Bella Okiddy*  
**Poster #F6**  
**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)
**Iris Pak**  
**Poster #F7**  
**Home Institution:** Brown University  
**Faculty Mentor:** Professor Eric Darling, Department of Molecular Pharmacology, Physiology and Biotechnology  
**Poster Title:** Micropatterning of proteins for cell organization

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**Natalie Palaychuk**  
**Poster #A14/A15**  
**Home Institution:** Brown University  
**Faculty Mentor:** Professor Robert Reenan, Department of Molecular Pharmacology, Cellular Biology and Biochemistry  
**Poster Title:** The Effects of Substrate Stiffness on Cell Behavior

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**Savannah Pallango**  
**Poster #F8**  
**Home Institution:** Brown University  
**Faculty Mentor:** Professor Judith Bender, Department of Molecular Biology, Cellular Biology and Biochemistry  
**Poster Title:** A Yeast Two-Hybrid Screen for New Transcriptional Silencing Proteins

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**Zemplen Pataki**  
**Poster #C14**  
**Home Institution:** Brown University  
**Faculty Mentor:** Professor David Rand, Department of Ecology and Evolutionary Biology  
**Poster Title:** Automated Quantification of Climbing Performance in D. melanogaster: The Impact of Age, Mitonuclear Genotype and Diet

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**Sarah Perelman**  
**Poster #F10**  
**Home Institution:** Brown University  
**Faculty Mentor:** Professor Alexandra Deaconescu, Department of Molecular Biology, Cellular Biology and Biochemistry  
**Poster Title:** Characterization and Suppression of SOD1-mediated ALS Phenotype in Drosophila Melanogaster Knock-in Model/Analysis of Transcriptome Profile and Specific RNA Editing in Drosophila ALS Model With SOD1 Mutations

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**Kishan Patel**  
**Poster #F9**  
**Home Institution:** Brown University  
**Faculty Mentor:** Professor Diane Lipscombe, Department of Neuroscience  
**Poster Title:** Regeneration of cell-specific inclusion of e37a in Cacna1b gene by multizinc-finger DNA binding protein CTCF-binding factor (CTCF)

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**David Perry**  
**Poster #C1**  
**Home Institution:** Brown University  
**Faculty Mentor:** Professor Gerwald Jogi, Department of Molecular Biology, Cellular Biology and Biochemistry  
**Poster Title:** Utilizing X-ray Crystallography to Elucidate the Structure of Antibiotic Dependent Ribosomes
Cassandra Pestana  Poster #F11
Home Institution: Brown University
Summer Research Program:
Undergraduate Teaching and Research Awards (UTRAs)
Faculty Mentor: Professor Ruth Colwill,
Department of Cognitive, Linguistic and Psychological Sciences
Poster Title: Communication in Canines

Tu Pham  Poster #G15
Home Institution: Brown University
Summer Research Program:
Howard Hughes Medical Institute (HHMI)
Faculty Mentor: Professor Mark Johnson and
Professor Alison DeLong, Department of Molecular Biology, Cellular Biology and Biochemistry
Poster Title: Characterizing the phenotypic response of pollen tubes of thermotolerant Solanum Lycopersicum lines to heat stress in vitro

Elina Pilakos  Poster #F12
Home Institution: Brown University
Summer Research Program:
Undergraduate Teaching and Research Awards (UTRAs)
Faculty Mentor: Professor Eleftherios Mylonakis, Department of Medicine, Molecular Microbiology, and Immunology
Poster Title: The relationship between colonization and infection for VRE, MRSA and Clostridium difficile.

Michelle Pombrol  Poster #D15
Home Institution: Brown University
Summer Research Program:
Howard Hughes Medical Institute (HHMI)
Faculty Mentor: Professor Mark Johnson and
Professor Alison DeLong, Department of Molecular Biology, Cellular Biology and Biochemistry
Poster Title: Differential gene expression in Solanum lycopersicum pollen tubes following heat stress

Carolina Ramirez  Poster #F13
Home Institution: Brown University
Summer Research Program:
APS Integrative & Organismal Physiology
Undergraduate Summer Research Fellowship
Faculty Mentor: Professor Carlos Aizenman,
Department of Neuroscience
Poster Title: Novel Behavioral Paradigms to Assay Neurodevelopmental Disorders in the Xenopus Laevis Tadpole

David Reich  Poster #E14
Home Institution: Brown University
Summer Research Program:
Howard Hughes Medical Institute (HHMI)
Faculty Mentor: Professor Jeffrey Morgan,
Department of Molecular Pharmacology, Physiology and Biotechnology
Poster Title: Gap Junctions in Chimeric Spheroids

Claire Rhee  Poster #F14
Home Institution: Brown University
Summer Research Program:
Undergraduate Teaching and Research Awards (UTRAs)
Faculty Mentor: Professor Jeffrey Morgan,
Department of Molecular Pharmacology, Physiology and Biotechnology
Poster Title: Assessing Gap Junction Function as a Model for Cardiotoxicity

Paul Rizzo  Poster #B10
Home Institution: Brown University
Summer Research Program:
Undergraduate Teaching and Research Awards (UTRAs)
Faculty Mentor: Professor Katherine Smith,
Department of Ecology and Evolutionary Biology
Poster Title: A Survey of RI Pediatricians on Lyme Disease Prevention Practices

Dina Sabetta  Poster #A14/A15
Home Institution: Brown University
Summer Research Program: Howard Hughes Medical Institute (HHMI)
**Faculty Mentor:** Professor Robert Reenan, Department of Molecular Biology, Cell Biology and Biochemistry  
**Poster Title:** Characterization and Suppression of SOD1-mediated ALS Phenotype in Drosophila melanogaster Knock-in Model/Analysis of Transcriptome Profile and Specific RNA Editing in Drosophila ALS Model With SOD1 Mutations

**George Sánchez**  
**Poster #G1**  
**Home Institution:** Brown University  
**Summer Research Program:** Undergraduate Teaching and Research Awards (UTRAs)  
**Faculty Mentor:** Professor Noah Philip, Department of Psychiatry and Human Behavior  
**Poster Title:** Telomere Length is Associated with Altered Amygdala Resting State Functional Connectivity

**Jens Sannerud**  
**Poster #D15**  
**Home Institution:** Brown University  
**Summer Research Program:** Howard Hughes Medical Institute (HHMI)  
**Faculty Mentor:** Professor Mark Johnson and Professor Alison DeLong, Department of Molecular Biology, Cellular Biology and Biochemistry  
**Poster Title:** Differential gene expression in Solanum lycopersicum pollen tubes following heat stress

**Beatrice Senocak**  
**Poster #G2**  
**Home Institution:** Brown University  
**Summer Research Program:** Undergraduate Teaching and Research Awards (UTRAs)  
**Faculty Mentor:** Professor Tara White, Department of Neuroscience  
**Poster Title:** The effect of common gene polymorphisms on brain responses to stimulants in healthy subjects

**Kelly Shan**  
**Poster #G3**  
**Home Institution:** Brown University  
**Summer Research Program:** Undergraduate Teaching and Research Awards (UTRAs)  
**Faculty Mentor:** Professor Joseph Kurtis, Department of Pathology  
**Poster Title:** Analyzing Interactions Between PfSEA-1, a Novel Malaria Vaccine Candidate, and Erythrocyte Proteins Using Surface Plasmon Resonance

**Jordan Shaw**  
**Poster #G4**  
**Home Institution:** Brown University  
**Summer Research Program:** Undergraduate Teaching and Research Awards (UTRAs)  
**Faculty Mentor:** Professor David Sheinberg, Department of Neuroscience and Professor Katherine Phillips, Department of Psychiatry  
**Poster Title:** Visual Processing in Body Dysmorphic Disorder and Anorexia Nervosa

**Daniel Shiebler**  
**Poster #G5**  
**Home Institution:** Brown University  
**Summer Program:** Undergraduate Teaching and Research Awards (UTRAs)  
**Faculty Mentor:** Professor Wael Asaad, Department of Neuroscience  
**Poster Title:** Intra-Operative Recording Analyses

**Benjamin Siranosian**  
**Poster #G6**  
**Home Institution:** Brown University  
**Summer Research Program:** Undergraduate Teaching and Research Awards (UTRAs)  
**Faculty Mentor:** Professor Nicola Neretti, Department of Molecular Biology, Cellular Biology and Biochemistry  
**Poster Title:** Hi-C reveals changes in the spatial organization of the aging genome

**Susannah Slepian**  
**Poster #G7**  
**Home Institution:** Brown University  
**Summer Research Program:** Undergraduate Teaching and Research Awards (UTRAs)  
**Faculty Mentor:** Professor Justin Fallon, Department of Neuroscience  
**Poster Title:** Does adult biglycan null mouse muscle tissue show denervation of neuromuscular junctions similar to that seen
in human Amyotrophic Lateral Sclerosis patients and in mouse models of ALS?

Libby Stein  Poster #G8
Home Institution: Brown University
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)
Faculty Mentor: Professor Eric Darling, Department of Molecular Pharmacology, Physiology and Biotechnology
Poster Title: Effects of Methotrexate in Stromal Cells

Alexia Stylianou  Poster #G9
Home Institution: Brown University
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)
Faculty Mentor: Professor Joseph Crisco, Department of Biomedical Engineering
Poster Title: Bi-planar Videoradiography for Tracking Post-Arthroplasty Shoulder Joint Motion

Elena Suglia  Poster #A6
Home Institution: Brown University
Summer Research Program: Voss Environmental Fellows
Faculty Mentor: Professor Mark Bertness, Department of Ecology and Evolutionary Biology
Poster Title: Sea Level Rise, Die-off, and the Future of New England Salt Marshes

Ellen Sukharevsky  Poster #B3
Home Institution: Brown University
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)
Faculty Mentor: Professor Erica Larschan, Department of Molecular Biology, Cellular Biology and Biochemistry
Poster Title: Investigating the viability of Drosophila with the P-element insertion line at different temperatures

Austin Tam  Poster #C11
Home Institution: Brown University
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)
Faculty Mentor: Professor Stephen Helfand, Department of Department of Molecular Biology, Cellular Biology and Biochemistry
Poster Title: Investigating the Role of a Somatic piRNA Pathway in Drosophila melanogaster Fat Body

Rafael Tua-Caraccia  Poster #G10
Home Institution: Brown University
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)
Faculty Mentor: Professor Doug Anthony, Department Pathology and Laboratory Medicine and Professor Lisa Sturla, Department of Neurology
Poster Title: Molecular Characterization of Pseudo-progression in adult Glioblastoma

Bettina Voelcker  Poster #G11
Home Institution: Brown University
Summer Research Program: Independent Research
Faculty Mentor: Professor Barry Connors, Department of Neuroscience
Poster Title: Effects of Embryonic Deletion of Tsc1 in Juvenile Mice

Gordon Wade  Poster #G12
Home Institution: Brown University
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)
Faculty Mentor: Professor Alexandra Deaconescu, Department of Molecular Biology, Cellular Biology and Biochemistry
Poster Title: A Structural Analysis of a Human Transcription-Repair Coupling Factor

Angelia Wang  Poster #G13
Home Institution: Brown University
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)
**Faculty Mentor:** Professor Carlos Aizenman and Professor Chris Ciarleglio, Department of Neuroscience  
**Poster Title:** A characterization of gene contributions to developmental and plastic processes in Xenopus laevis brain  

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**Tyler Wishard**  
**Poster #D5**  
**Home Institution:** University of California – San Diego  
Summer Research Program: Minority Access to Research Careers  
**Faculty Mentor:** Professor Carlos Aizenman, Department of Neuroscience and Professor Hollis Cline, Department of Molecular and Cellular Neuroscience  
**Poster Title:** Developing Xenopus Laevis As a Model for Fragile X Syndrome  

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**Jimmy Xia**  
**Poster #A14/A15**  
**Home Institution:** Brown University  
Summer Program: Howard Hughes Medical Institute (HHMI)  
**Faculty Mentor:** Professor Robert Reenan, Department of Molecular Biology, Cell Biology and Biochemistry  
**Poster Title:** Characterization and Suppression of SOD1-mediated ALS Phenotype in Drosophila Melanogaster Knock-in Model/Analysis of Transcriptome Profile and Specific RNA Editing in Drosophila ALS Model With SOD1 Mutations  

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**Sophie Yan**  
**Poster #G14**  
**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)  
**Faculty Mentor:** Professor Karla Kaun, Department of Neuroscience  
**Poster Title:** The Role of Notch Signaling in Alcohol Reward and Memory  

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**Chen Ye**  
**Poster #C14**  
**Home Institution:** Brown University  
Summer Research Program: Howard Hughes Medical Institute (HHMI)  
**Faculty Mentor:** Professor David Rand, Department of Ecology and Evolutionary Biology  

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**Poster Title:** Automated Quantification of Climbing Performance in D. melanogaster: The Impact of Age, Mitonuclear Genotype and Diet  

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**Denise Yoon**  
**Poster #C13**  
**Home Institution:** Brown University  
Summer Research Program: Howard Hughes Medical Institute (HHMI)  
**Faculty Mentor:** Professor David Rand, Department of Ecology and Evolutionary Biology  
**Poster Title:** Understanding aging by investigating genes, diet, and biochemistry in Drosophila  

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**Anna Zeidman**  
**Poster #B4**  
**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)  
**Faculty Mentor:** Professor Erica Larschan, Department of Department of Molecular Biology, Cell Biology and Biochemistry  
**Poster Title:** New data suggests an ancient mechanism for a chromosome-specific factor
Summer Research Symposium Posters
Friday, August 8
Physical and Social Sciences

Physical Sciences

Dilum Aluthge Poster #A15
Home Institution: Brown University
Summer Research Program:
Undergraduate Teaching and Research
Awards (UTRAs)
Faculty Mentor: Professor Charles Lawrence and Professor William Thompson,
Department of Applied Mathematics and
Center for Computational Molecular Biology
Poster Title: Probabilistic approaches to alignment and SNP-calling in repetitive regions of DNA

Heather Aruffo Poster #C5
Home Institution: Brown University
Summer Research Program:
Undergraduate Teaching and Research
Awards (UTRAs)
Faculty Mentor: Professor Lai Sheng Wang and Professor Li Qong Wang, Department of Chemistry
Poster Title: Synthesis and Electrochemical Analysis of Au20 Nanoclusters

Nicholas Bower Poster #D1
Home Institution: Brown University
Summer Research Program:
Undergraduate Teaching and Research
Awards (UTRAs)
Faculty Mentor: Professor Derek Stein, Department of Physics
Poster Title: Experimental Studies of Micro and Nanoscale Capillarity

Einat Brenner Poster #B11
Home Institution: Brown University
Summer Research Program:
Undergraduate Teaching and Research
Awards (UTRAs)
Faculty Mentor: Professor Sean Deoni, School of Engineering
Poster Title: Brain Development Differences in Typically-Developing Children and Those with Autism Spectrum Disorder

Heekyung Chang Poster #B10
Home Institution: Brown University
Summer Research Program:
Undergraduate Teaching and Research Awards (UTRAs)
Faculty Mentor: Professor Kareen Coulombe, School of Engineering
Poster Title: Developing a method to correlate cell area and volume in hypertrophically stimulated human embryonic stem cell-derived cardiomyocytes (hESC-CMs)

Karen Chen Poster #C6
Home Institution: Brown University
Summer Research Program:
Independent Research
Faculty Mentor: Professor Kristie Koski, Department of Chemistry
Poster Title: Dual Metal Intercalation of Bi2Se3 NanoRibbons

Frank Chung Poster #C7
Home Institution: Brown University
Summer Research Program:
NASA Space Grant
Faculty Mentor: Professor Kristie Koski, Department of Chemistry
Poster Title: Towards a chemical method to synthesize two-dimensional chalcogenide heterostructures

Tiffany Citra Poster #D6
Home Institution: Brown University
Summer Research Program:
Undergraduate Teaching and Research Awards (UTRAs)
Faculty Mentor: Professor Colleen Dalton, Department of Geological Sciences  
Poster Title: Seismic velocity structure of the crust and mantle beneath northwestern Canada

Mahalia Clark Poster #D7  
Home Institution: Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)  
Faculty Mentor: Professor Meredith Hastings, Department of Geological Sciences  
Poster Title: Nitrogen Availability from Biochar and Manure Amendments

Daniel DeCiccio Poster #C8  
Home Institution: Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)  
Faculty Mentor: Professor Christoph Rose-Petruck, Department of Chemistry  
Poster Title: Electrochemical Reduction of Carbon Dioxide in Clathrate Hydrates

Camera Ford Poster #D8  
Home Institution: Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)  
Faculty Mentor: Professor Amanda Lynch and Lynn Carlson, Department of Geological Sciences  
Poster Title: Seeing with Two Eyes: Integrating Indigenous Knowledge and Climate Science to Understand Vulnerability in the Murray-Darling Basin, Australia

Layne Frechette Poster #C9  
Home Institution: Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)  
Faculty Mentor: Professor Richard Stratt, Department of Chemistry  
Poster Title: Navigating the potential energy landscape of liquid-crystal formers

Marielena Gamboa Castro Poster #B15  
Home Institution: Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)  
Faculty Mentor: Professor Ian Wong, Department of Biomedical Engineering  
Poster Title: An Integrated Experimental and Computational Approach to Tumor Spheroid Dynamics

Briana Garcia Poster #B9  
Home Institution: Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)  
Faculty Mentor: Professor Karen Haberstroh, School of Engineering  
Poster Title: Spira Engineering Camp: Infusing Engineering into the Lives of Providence Youth

Samantha Gates Poster #B8  
Home Institution: Brown University  
Summer Research Program: Independent Research  
Faculty Mentor: Professor Anita Shukla, School of Engineering  
Poster Title: Bacterial Stimuli-Responsive Antibiotic Delivery Coatings

Joey Genfi Poster #B7  
Home Institution: Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)  
Faculty Mentor: Professor Benjamin Kimia, School of Engineering  
Poster Title: BlindFind Maps - A Correspondence/Structure-based approach to Map Making

Grant Glovin Poster #D9  
Home Institution: Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)  
Faculty Mentor: Professor Amanda Lynch, Department of Geological Sciences
**Poster Title:** Wavelet Analysis of the Polar Vortex and Linkages to Climate Change  

**Nicholas Goelz**  
**Home Institution:** Brown University  
**Summer Research Program:** Undergraduate Teaching and Research Awards (UTRAs)  
**Faculty Mentor:** Professor Sorin Istrail, Department of Computational Biology  
**Poster Title:** Efficient Backtracking with the Dancing Links Data Structure and its Application to the HP Lattice Model of Protein Folding

**Ellen Goldberg**  
**Home Institution:** Brown University  
**Summer Research Program:** Undergraduate Teaching and Research Awards (UTRAs)  
**Faculty Mentor:** Professor Derek Stein, Department of Physics  
**Poster Title:** Studies of Ion Emission from a Nanoscale Tip in a Mass Spectrometer

**Adam Gosselin**  
**Home Institution:** Brown University  
**Summer Research Program:** Undergraduate Teaching and Research Awards (UTRAs)  
**Faculty Mentor:** Professor R. Iris Bahar, Department of Computer Engineering  
**Poster Title:** Enabling Autonomous Flight of Drones in Complex, Unpredictable Environments

**Patrice Groomes**  
**Home Institution:** Brown University  
**Summer Research Program:** Undergraduate Teaching and Research Awards (UTRAs)  
**Faculty Mentor:** Professor James Sello, Department of Chemistry  
**Poster Title:** Elucidating the mechanism of ADEP resistance in Streptomyces coelicolor

**Mehrdad Kiani**  
**Home Institution:** Brown University  
**DiMase Summer Internship**  
**Faculty Mentor:** Professor Ian Wong, Department of Biomedical Engineering  
**Poster Title:** An Integrated Experimental and Computational Approach to Tumor Spheroid Dynamics

**Taesoo Kim**  
**Home Institution:** Brown University  
**Summer Research Program:** Undergraduate Teaching and Research Awards (UTRAs)  
**Faculty Mentor:** Professor Charles Lawrence and Professor William Thompson, Department of Applied Mathematics and Center for Computational Molecular Biology  
**Poster Title:** Probabilistic approaches to alignment and SNP-calling in repetitive regions of DNA

**Yongha Kim**  
**Home Institution:** Brown University  
**Summer Research Program:** DiMase Summer Internship  
**Faculty Mentor:** Professor Sean Deoni, School of Engineering  
**Poster Title:** Investigation of the relationship between myelination and delayed language development in children

**Youn Kim**  
**Home Institution:** Brown University  
**Summer Research Program:** Undergraduate Teaching and Research Awards (UTRAs)  
**Faculty Mentor:** Professor Ben Raphael, Department of Computer Science  
**Poster Title:** An Improved Parameter Selection Method in HotNet2

**Lauren Levy**  
**Home Institution:** Brown University  
**Summer Research Program:** Undergraduate Teaching and Research Awards (UTRAs)
**Faculty Mentor:** Professor Anita Shukla, School of Engineering  
**Poster Title:** Geometric Control of Chondrogenic Differentiation  

**Sophia Liang**  
**Poster #B4**  
**Home Institution:** Brown University  
Summer Research Program:  
Undergraduate Teaching and Research Awards (UTRAs)  
**Faculty Mentor:** Professor G. Tayhas R. Palmore, School of Engineering  
**Poster Title:** DColi: An Intein-Based Biosensor for the Detection of Vitamin D  

**Lev Litichevskiy**  
**Poster #B3**  
**Home Institution:** Brown University  
Summer Research Program:  
Undergraduate Teaching and Research Awards (UTRAs)  
**Faculty Mentor:** Professor Beata Jarosiewicz, Department of Neuroscience and Professor Leigh Hochberg, School of Engineering  
**Poster Title:** Determining the Optimal Data Periods to Use for Decoder Calibration in Brain-Computer Interfaces  

**Robert Lusi**  
**Poster #C11**  
**Home Institution:** Brown University  
Summer Research Program:  
Undergraduate Teaching and Research Awards (UTRAs)  
**Faculty Mentor:** Professor Amit Basu, Department of Chemistry  
**Poster Title:** Rethinking the Yariv Reagent: Synthesis of the β-Glucosyl Yariv Reagent Using Protected Intermediates  

**Naser Mahfouz**  
**Poster #B2**  
**Home Institution:** Brown University  
Summer Research Program:  
Undergraduate Teaching and Research Awards (UTRAs)  
**Faculty Mentor:** Professor Robert H. Hurt, School of Engineering  
**Poster Title:** Graphene Oxide-base Membranes Transport Properties  

**Daniel Milstein**  
**Poster #B1**  
**Home Institution:** Brown University  
Summer Research Program:  
Undergraduate Teaching and Research Awards (UTRAs)  
**Faculty Mentor:** Professor Leigh Hochberg, School of Engineering  
**Poster Title:** Errant Unit Detection in Kalman Filter Based Neural Decoding  

**Richard Nally**  
**Poster #D3**  
**Home Institution:** Brown University  
Summer Research Program:  
Undergraduate Teaching and Research Awards (UTRAs)  
**Faculty Mentor:** Professor Chung-I Tan, Department of Physics  
**Poster Title:** Understanding Particle Scattering Through String Theory  

**Isabel Newton**  
**Poster #C1**  
**Home Institution:** Brown University  
Summer Research Program:  
Undergraduate Teaching and Research Awards (UTRAs)  
**Faculty Mentor:** Professor Karen Haberstroh, School of Engineering  
**Poster Title:** Spira Engineering Camp: Infusing Engineering Into the Lives of Providence Youth  

**Priya Patel**  
**Poster #C14**  
**Home Institution:** Brown University  
Summer Research Program:  
Undergraduate Teaching and Research Awards (UTRAs)  
**Faculty Mentor:** Professor Sarah Delaney, Department of Chemistry  
**Poster Title:** Interactions Between Au20 nanoclusters and DNA  

**Aaron Rachels**  
**Poster #D10**  
**Home Institution:** Brown University  
Summer Research Program:  
Undergraduate Teaching and Research Awards (UTRAs)  
**Faculty Mentor:** Professor Timothy Herbert, Department of Geological Sciences
**Poster Title:** A Global Decrease in Sea Surface Temperatures 7 Million Years Ago Contextualizes Terrestrial Evolutionary Events  

**Eliott Rosenberg**  
**Poster #D11**  
**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)  
**Faculty Mentor:** Professor James Head, Department of Earth, Environmental and Planetary Sciences  
**Poster Title:** The Water Volume Required to Erode the Valley Networks on Mars: Implications for Late Noachian Climate

**Nicolas Schank**  
**Poster #B12**  
**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)  
**Faculty Mentor:** Professor John Savage, Department of Computer Science  
**Poster Title:** Multiparty Computation

**Sha Sha**  
**Poster #D4**  
**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)  
**Faculty Mentor:** Professor Jay Tang, Department of Physics  
**Poster Title:** Can Viscoelastic Matrix Enhance Bacterial Motility?

**Roque Soto Castandeda**  
**Poster #D12**  
**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)  
**Faculty Mentor:** Professor Marc Parmentier and Professor Chris Havlin, Department of Earth, Atmospheric and Planetary Sciences  
**Poster Title:** Temperature and Stress Evolution in Continental Lithosphere and its’ Influence on Magma Migration

**Mary Tarantino**  
**Poster #C13**  
**Home Institution:** Brown University  
Summer Research Program: Summer Research Assistantship in Biomedical Sciences  
**Faculty Mentor:** Professor Sarah Delaney, Department of Chemistry  
**Poster Title:** Kinetics of Flap Removal in DNA Base Excision Repair by Flap Endonuclease-1

**Jacob Thomas**  
**Poster #A13**  
**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)  
**Faculty Mentor:** Professor Ben Raphael, Department of Computational Biology  
**Poster Title:** Analyzing Cancer Genomes with HotNet2

**Andrew Tian**  
**Poster #C2**  
**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)  
**Faculty Mentor:** Professor Jacob Rosenstein, School of Engineering  
**Poster Title:** A wireless system for alleviating freezing of gait in Parkinson’s disease

**Emily Toomey**  
**Poster #C3**  
**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)  
**Faculty Mentor:** Professor Jimmy Xu, School of Engineering  
**Poster Title:** Conductivity and Physical Characterization of Silver-Intercalated DNA

**Sarah Weingarten**  
**Poster #C12**  
**Home Institution:** Brown University  
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)  
**Faculty Mentor:** Professor Amit Basu, Department of Chemistry
**Poster Title:** Rethinking the Yariv Reagent: Use of binding studies to characterize interactions between arabinogalactan proteins and various Yariv reagents

**Edward Williams**  
**Home Institution:** Brown University  
**Summer Research Program:** Undergraduate Teaching and Research Awards (UTRAs), NASA Space Grant  
**Faculty Mentor:** Professor Gregory Tucker, Department of Physics  
**Poster Title:** Simulation of Exoplanet Atmosphere Data Collection with the Balloon-borne Exoplanet Experiment (BEE)

**Evelyn Williams**  
**Home Institution:** Brown University  
**Summer Research Program:** Undergraduate Teaching and Research Awards (UTRAs)  
**Faculty Mentor:** Professor Ian Wong, Department of Biomedical Engineering  
**Poster Title:** An Integrated Experimental and Computational Approach to Tumor Spheroid Dynamics

**Matthew Wong**  
**Home Institution:** Brown University  
**Summer Research Program:** Undergraduate Teaching and Research Awards (UTRAs)  
**Faculty Mentor:** Professor Chad Jenkins, Department of Computer Science  
**Poster Title:** 3D Mapping with Mobile Robots

**Jie Ying Wu**  
**Home Institution:** Brown University  
**Summer Research Program:** Undergraduate Teaching and Research Awards (UTRAs)  
**Faculty Mentor:** Professor Sherief Reda, School of Engineering  
**Poster Title:** Managing Power Consumption in Data Centers

**Victoria Wu**  
**Poster #B15**  
**Home Institution:** Brown University  
**Summer Research Program:** Undergraduate Teaching and Research Awards (UTRAs)  
**Faculty Mentor:** Professor Ian Wong, Department of Biomedical Engineering  
**Poster Title:** An Integrated Experimental and Computational Approach to Tumor Spheroid Dynamics

**Bereket Zekarias**  
**Poster #C15**  
**Home Institution:** Brown University  
**Summer Research Program:** Undergraduate Teaching and Research Awards (UTRAs)  
**Faculty Mentor:** Professor Jason Sello, Department of Chemistry  
**Poster Title:** Investigating the Resistance of Bacteria to Signal Peptidase Inhibitors, A Promising Class of Antibacterial Agents

**Social Sciences**

**Joseph Bacon**  
**Poster #A1**  
**Home Institution:** Brown University  
**Summer Research Program:** Undergraduate Teaching and Research Awards (UTRAs)  
**Faculty Mentor:** Professor Jin Li and Professor Yoko Yamamoto, Department of Education Studies  
**Poster Title:** Children’s Learning and Socialization

**Leila Blatt**  
**Poster #A4**  
**Home Institution:** Brown University  
**Summer Research Program:** Undergraduate Teaching and Research Awards (UTRAs)  
**Faculty Mentor:** Professor Lundy Braun, Department of Africana Studies  
**Poster Title:** Black Women and the Fight for Reproductive Justice, Contemporary and Historical Considerations
Burke Gao  Poster #A8
Home Institution: Brown University
Summer Research Program: Independent Research
Faculty Mentor: Professor Omar Galarraga, Department of Public Health
Poster Title: How to Cure Hepatitis C in Rhode Island and Save Money While Doing It: A Cost-Benefit Analysis of Sofosbuvir

Sarah Grace  Poster #A2
Home Institution: Brown University
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)
Faculty Mentor: Professor Matthew Kraft, Department of Education Studies
Poster Title: Non-Cognitive Skills & Schooling: An Exploratory Analysis

Carol Kim  Poster #A3
Home Institution: Brown University
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)
Faculty Mentor: Professor Eric Shed, Department of Education Studies
Poster Title: Teaching with Technology

Taylor Lanzet  Poster #A9
Home Institution: Brown University
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)
Faculty Mentor: Professor Dawn King, Center for Environmental Studies
Poster Title: Dairy in New England

Isaac MacDonald  Poster #A10
Home Institution: Brown University
Summer Research Program: Undergraduate Teaching and Research Awards (UTRAs)
Faculty Mentor: Professor Dawn King, Department of Environmental Studies
Poster Title: The Anthropocene: A Historical Perspective
Summer Research Programs at Brown

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- Howard Hughes Medical Institute (HHMI)
- Minority Access to Research Careers (MARC)
- National Science Foundation Research Experiences for Undergraduates (NSF REU)
- Royce Fellows (Swearer Center for Public Service)
- Sheridan Center Mentorship Program
- Space Grant/NASA
- Summer Research Assistantship in Biomedical Sciences
- Undergraduate Teaching and Research Awards (UTRA)
- Voss Environmental Fellows
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Humanities & Life Sciences

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Poster Layout—Friday, August 8

Physical & Social Sciences

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Symposium Organizers

Oludurotimi O. Adetunji,
Associate Dean of the College
Director, UTRA Program

Janice Rego, Program Coordinator
Christine Mullen, Symposium Intern

Acknowledgements

Vicki Colvin, Provost
Maud Mandel, Dean of the College
Brown University Library/Center for Digital Scholarship

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