Stony Brook University

# 2019 Summer Undergraduate Research Symposium

Friday, August 2
Charles B. Wang Center

**Schedule**

*Poster Session: 9:00 -11:00 AM*

*Closing Ceremony: 11:00 - 11:30 AM*

## C-STEP: Collegiate Science & Technology Entry Program

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|---|---|---|
| **Lisa Fabien**<br>**Oluwatobi Fadugba**<br>**Tiffany Gonzalez**<br>**Kayla Parker**<br>*Stony Brook University* | The Effectiveness of Virtual Reality for Treating Concussions | **Daniel Irizarry** *(instructor)*<br>Lauren Raguette (*TA)*<br>*C-STEP* |
| **Brianna Gomerez**<br>**Sheyla Ochoa-Gil**<br>**Sebastien Lalanne**<br>**Aracely Chaves**<br>**Shirley Torres**<br>*Stony Brook University* | Evaluating the Effects of Microplastics on the Human Immune System and Open Ocean Ecosystem | **Daniel Irizarry** *(instructor)*<br>Abhay Kanodia (*TA)*<br>*C-STEP* |
| **Christina Chalmers**<br>**Kayla J. Brown**<br>**Dezmen L. Jenkins-Sierra**<br>**Rafael J. Arichavala**<br>**Sarah Jamal**<br>*Stony Brook University* | Can the Autonomous Sensory Meridian Response Be Used to Alleviate Pain Symptoms in Young Adults with Sickle Cell Disease? | **Daniel Irizarry** *(instructor);*<br>Michael Martinez (*TA)*<br>*C-STEP* |
| **Kimberly Mestizo**<br>**Rachel Rodriguez**<br>**Najee Reno**<br>**Chenel Morgan**<br>*Stony Brook University* | Investigating the Effectiveness of Meditation on Reducing Symptoms of Phantom Limb Pain | **Daniel Irizarry** *(instructor)*<br>Simba Charles (*TA)*<br>*C-STEP* |
| **Tatiana Rascoe**<br>**Rebekah Ofori**<br>**Vanessa Diaz**<br>**Abighail McKinney**<br>*Stony Brook University* | Examining the Link Between Human Infectious Diseases and Bacterial Concentrations in International Subways | **Daniel Irizarry** *(instructor)*<br>Meagan Irizarry (*TA)*<br>*C-STEP* |

## EXPLORATIONS in STEM — Biology[1] & Physics [2]

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| **Arlene Alvarez**[1]<br>*Stony Brook University* | C-fos Expression During Maze Learning in Western Painted Turtles | **Dr. Alice Powers**<br>*Psychology* |
| **Jerome Belford**[1]<br>*Stony Brook University* | The Expression, Purification, and Crystallization of Epstein Barr Virus Derived Protein Truncations | **Dr. Jarrod French**<br>*Biochemistry, Chemistry* |
| **Christian Chimezie**[2]<br>*Stony Brook University* | Identifying Massive Black Holes by Analyzing Microlensing Lightcurves | **Dr. Anja von der Linden**<br>*Physics & Astronomy* |
| **Samuel Escobar**[1]<br>*Stony Brook University* | Phenotypic Analysis of a Zebrafish Axial Extension Mutant | **Dr. Benjamin Martin**<br>*Biochemistry & Cell Biology* |

## EXPLORATIONS in STEM — PSEG Scholars

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| **Giorgian Borca-Tasciuc**<br>*Stony Brook University* | Creating Multiple-Qubit Quantum Memory Systems using Acousto-Optic Modulators | **Dr. Eden Figueroa**<br>*Physics & Astronomy* |
| **Leonardo Castillo Veneros**<br>*Stony Brook University* | Control and Optimization of Light-Matter Based Quantum Memories | **Dr. Eden Figueroa**<br>*Physics & Astronomy* |
| **Kristin Cimmerer**<br>*Stony Brook University* | Exploring Compliant Properties of Delrin | **Dr. Anurag Purwar**<br>*Mechanical Engineering* |
| **Elinor Coats**<br>*Stony Brook University* | Impact of Processing on Corrosion Properties of Laser Powder Bed Formed 316L Stainless Steel | **Dr. Gary Halada**<br>*Materials Science & Chemical Engineering* |
| **Sara Kurdi**<br>*Stony Brook University* | Design and Construction of the Time Projection Chamber for High Resolution Tracking | **Dr. Thomas Hemmick**<br>**Dr. Klaus Dehmelt**<br>*Physics & Astronomy* |
| **Dorothy Lee**<br>*Stony Brook University* | Explorations of Multi-Dimensional Gaussian Regression | **Dr. Petar Djuric**<br>*Electrical & Computer Engineering* |
| **Nga Ying Lo**<br>*Stony Brook University* | Identify Globular Cluster Candidates in Ultra-Diffuse Galaxies using SExtractor and GalFit | **Dr. Jin Koda**<br>*Physics & Astronomy* |
| **Gerard Miles**<br>*Stony Brook University* | Comparing the Results of Capillary Action Using the Smoluchowski Equation and the Lucas-Washburn Equation | **Dr. Carlos Colosqui**<br>*Mechanical Engineering* |
| **Jihu Mun**<br>*Stony Brook University* | Defending Plants from Tobacco Mosaic Virus with XRN1 Gene | **Dr. J. Peter Gergen**<br>*Biochemistry & Cell Biology* |
| **Xinyi Nam**<br>*Stony Brook University* | Generating Realistic, Extreme Weather Data for Solar Panel Testing | **Dr. Yue Zhao**<br>*Electrical & Computer Engineering* |
| **Nathanael Payen**<br>*Stony Brook University* | Application of Knowledge Authoring Logic Machine (KALM) on bAbI tasks | **Dr. Paul Fodor**<br>*Computer Science* |
| **Maggie Shata**<br>*Stony Brook University* | Molecular Dynamics Simulations of Soil Strengthening Materials | **Dr. Sherif Abdelaziz**<br>*Civil Engineering* |
| **Saeed Zainul**<br>*Stony Brook University* | Studies of Cetane Improver Peroxides on the Autoignition Properties of Wet Ethanol | **Dr. Benjamin Lawler**<br>*Mechanical Engineering* |

# INDUCER: Increasing Diversity in Undergraduate Cancer Biology Education and Research

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| **Paul Boasiako**<br>*Stony Brook University* | Saturated Fatty Acids induced Endoplasmic Reticulum Stress in Intestinal Epithelial Cells | **Dr. Ashley Snider**<br>**Dr. Songhwa Choi**<br>**Dr. Yusuf Hannun**<br>**Dr. Lina Obeid**<br>*Medicine* |
| **Doreen Dadson**<br>*Stony Brook University* | The Role of the Protein Scribble in Epithelial Carcinoma Invasion | **Dr. Maya Shelley**<br>*Neurobiology & Behavior* |
| **Bismark Owusu Frimpong**<br>*Stony Brook University* | Overexpression of Krüppel-Like Factor 6 and Podocyte Injury in Diabetic Kidney Disease | **Dr. Sandeep Mallipattu**<br>*Medicine* |
| **Emmaly Gutierrez**<br>*Stony Brook University* | Intratumoral Macrophage Analysis and Characterization of Pretreatment HER2 Neoadjuvant Patient Samples Using Multiplex Immunofluorescence | **Dr. Patricia Thompson-Carino**<br>*Pathology* |
| **Maame Gyamfi**<br>**Maryam Tayyab**<br>*Stony Brook University* | Investigating the Interplay of Monocytes in the Tumor Microenvironment of Glioblastomas | **Dr. Styliani-Anna Tsirka**<br>*Pharmacological Sciences* |
| **Jemima Morgan**<br>*Stony Brook University* | Central Protease Activated Receptor 2 Mechanisms in Cancer Pain | **Dr. David K. Lam**<br>*Oral & Maxillofacial Surgery* |
| **Chinyere Julie Nwaogbe**<br>*Stony Brook University* | Quercetin Derivative Compounds in a Colitis/Colorectal Cancer Model | **Dr. Grace Gathungu**<br>*Pediatrics* |
| **Tiana Nicole Reyes**<br>*Stony Brook University* | The Effect of C1q and gC1qR in Breast Cancer: Racial Health Disparities | **Dr. Jennie Williams**<br>*Family, Population & Preventive Medicine* |
| **Malik Tranquille**<br>*Stony Brook University* | The Role of BST2 in Regulating Drug Resistance in Breast Cancer Cells | **Dr. Chioma Okeoma**<br>*Pharmacological Sciences* |

## Infectious Diseases / Medicine

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| **Dilsa Perez**<br>*Stony Brook University* | Socioeconomic Factors in the Hispanic/Latino Community Impacting Preventative Measures against Lyme Disease in Eastern Long Island, New York | **Dr. Benjamin Luft**<br>**Dr. Stalin Vilcarromero**<br>*Medicine* |
| **Dawid Stepnowski**<br>**Marjan Halimi**<br>*Stony Brook University* | Household Pets on Seroprevalence of Human Borreliosis in Hispanic Workers of Eastern Long Island | **Dr. Benjamin Luft**<br>**Dr. Stalin Vilcarromero**<br>*Medicine* |

## Research Experiences for Undergraduates (REU): Big Spacial and Image Data Analytics

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| **Anthony Xiang**<br>*Stony Brook University* | Big Spatial and Image Data Analytics | **Dr. Fusheng Wang**<br>*Biomedical Informatics, Computer Science* |

# Research Experiences for Undergraduates (REU): Nanotechnology for Health, Energy & the Environment

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| **Katherine Alanya**<br>*Stony Brook University* | Green Synthesis of Catalytic Nanoparticles on 304 Stainless Steel | **Dr. Gary Halada**<br>**Dr. Michael Cuiffo**<br>*Materials Science & Chemical Engineering* |
| **Jordan Armstead**<br>*University of Maryland, Baltimore County* | Using Theil Index to Measure Inequality in U.S. Science Funding | **Dr. Thomas Woodson**<br>*Technology & Society* |
| **Emily Evans**<br>*SUNY Polytechnic Institute* | Environmentally Benign Degradation of Muslin Waste to Cellulose | **Dr. Miriam Rafailovich**<br>*Materials Science & Chemical Engineering* |
| **Roberto Flores**<br>*University of Maryland, Baltimore County* | Corrosion of Laser Bed Formed 316L Steel | **Dr. Gary Halada**<br>*Materials Science & Chemical Engineering* |
| **Liana Gerhardt**<br>*Kennesaw State University* | Characterization Techniques for Batteries: An Introduction to XAS and PXRD | **Dr. Amy Marschilok**<br>**Dr. Kenneth Takeuchi**<br>**Dr. Esther Takeuchi**<br>*Materials Science & Chemical Engineering; Chemistry* |
| **Stephen Jones**<br>*College of New Jersey* | The Impact of Micro and Nanostructure on the Hardness of 3D Printed 316L Stainless Steel | **Dr. Gary Halada**<br>**Dr. T. Venkatesh**<br>*Materials Science & Chemical Engineering* |
| **Jacob Kasday**<br>*University at Buffalo* | Effects of Preparation Methods on Supported Metal Oxide Catalysts for NO Reduction by CO | **Dr. Tae Jin Kim**<br>*Materials Science & Chemical Engineering* |
| **Amira Manes**<br>*Hampton University* | Comparison of HUVEC and HDMEC Morphology Under Shear Stress and HAE Conditions | **Dr. Wei Yin**<br>*Biomedical Engineering* |
| **Jashey Matheson**<br>*SUNY College at Old Westbury* | Analyzing the NSF Broader Impacts Criterion Through Nanotechnology Progress Outcome Reports | **Dr. Thomas Woodson**<br>*Technology & Society* |
| **Dalya Omeishi**<br>*Farmingdale State College* | The Effects of Low Intensity Vibrations on the Cytoskeleton of T Cells for CAR T Cancer Therapy | **Dr. Mei Lin Chan**<br>*Biomedical Engineering* |

## Thank you to our program staff and contributors:

**INDUCER**
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Dr. Jennie Williams

**C-STEP**
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Dorys Johnson
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**Explorations in STEM**
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Toni Sperzel

**REU Big Spatial & Image Data Analytics**
Dr. Fusheng Wang

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## CIE / Center for Inclusive Education

### Department of Physics & Astronomy

Institute for STEM Education
STONY BROOK UNIVERSITY

NIH NATIONAL CANCER INSTITUTE

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PSEG
*We make things work for you.*

**Undergraduate Biology:** the *Dr. Steven K. Galson, Ellen Geis, & Dr. Mitchell Wortzman Undergraduate Research awards*

URECA
Undergraduate Research & Creative Activities

Stony Brook University