

## **Congratulations to the recipients of Provost Undergraduate Summer Research Awards 2018**

The following is a list of students receiving 2018 Provost Summer Research Fellowships awards.

John Antley

Major: Environmental Science

Faculty Adviser: Alexei Khalizov, Department of Chemistry and Environmental Science

Project Title: Experimental Measurements of Uptake Coefficients of Gaseous Oxidized Mercury for Evaluation of its Atmospheric Deposition

Sean Bannon

Major: Chemical Engineering

Faculty Adviser: Kathleen McEnnis, Department of Chemical and Materials Engineering

Project Title: Creation of Microparticles for Drug Delivery Systems using Electrohydrodynamic Co-Jetting

Jonard Diamante Bolante

Major: Computer Science

Faculty Adviser: Eric Nersesian, Department of Informatics

Project Title: Augmented Reality Framework in Museum Exhibits

Daniela Bushiri

Major: Chemical Engineering

Faculty Adviser: Edward Dreizen, Department of Chemical and Materials Engineering

Project Title: Nickel fluoride as an ionic conductor oxidizer for new aluminum-based reactive materials

Jan Aira Castillo Calalo

Major: Biomedical Engineering

Faculty Adviser: Saikat Pal, Department of Biomedical Engineering

Project Title: Analysis of Old and Young Adult Muscle Co-Contraction During Stair Ascent and Descent

James Chao

Major: Interior Design

Faculty Adviser: Haimin Wang, Department of Physics

Project Title: A Statistical Study of Solar Polar Crown Filaments

Alexander Coelho

Major: Chemical Engineering

Faculty Adviser: Ecevit Bilgili, Department of Chemical and Materials Engineering

Project Title: Elucidating the Impact of Polymer–Drug Interactions on the Formation of Spray-Dried Amorphous Solid Dispersions and Drug Dissolution Enhancement

Nicholas Corrente

Major: Chemical Engineering

Faculty Adviser: Gennady Gor, Department of Chemical and Materials Engineering

Project Title: Molecular Dynamics Simulations Study of Confinement Effects on Compressibility and Heat Capacity of Fluids

Kaytlyn Crowe

Major: Biomedical Engineering

Faculty Adviser: Antje Ihlefeld, Department of Biomedical Engineering  
Project Title: Identification of Frequency Modulation within Energetic and Informational Maskers

Karina Dsouza  
Major: Biomedical Engineering  
Faculty Adviser: Camelia Prodan, Department of Physics  
Project Title: Large-Scale Replication of Tubulin Subunits for Analysis of Microtubule Vibrational Properties

Eman Elgouz  
Major: Chemical Engineering  
Faculty Adviser: Somenath Mitra, Department of Chemistry and Environmental Science  
Project Title: Nanocrystalline Cellulose as a Drug Delivery Vehicle

Sebastian Fine  
Major: Biomedical Engineering  
Faculty Adviser: Tara Alvarez, Department of Biomedical Engineering  
Project Title: Maddox Components of Vergence: Establishing Normative Data

Ajay Gandhi  
Major: Biology  
Faculty Adviser: Madhuvika Murugan, Department of Biomedical Engineering  
Project Title: Microglia Activation After Blast Induced Traumatic Brain Injury

Yasmine Ghattas  
Major: Biology + Chemistry  
Faculty Adviser: Eric Fortune, Federated Department of Biological Sciences  
Project Title: Feedback Control of Social Behavior

Jonpierre Grajales  
Major: Applied Physics  
Faculty Adviser: Andrei Sirenko, Department of Physics  
Project Title: Analysis and Simulations of Vortex Beam Propagation and Polarization Properties

Chloe Jelley  
Major: Biology  
Faculty Adviser: Phillip Barden, Federated Department of Biological Sciences  
Project Title: Revealing Trade-offs in Sensory Organs and Morphological Characteristics of Formicidae

Anuradha Kadam  
Major: Architecture  
Faculty Adviser: Alexei Khalizov, Department of Chemistry and Environmental Science  
Project Title: Design of Gas-Phase and Gas-Surface Chemistry Reactors for Mercury Experiments

Jeffrey Kim  
Major: Biomedical Engineering  
Faculty Adviser: Alev Erdi, Department of Biomedical Engineering  
Project Title: Assistive Device for Autistic People 2

Julianna Kosty  
Major: Biomedical Engineering  
Faculty Adviser: Bryan Pfister, Department of Biomedical Engineering  
Project Title: Behavioral and Cellular Consequences of Combination Blast and Blunt Traumatic Brain Injury

Karen Mandarina  
Major: Biomedical Engineering  
Faculty Adviser: Alev Erdi, Department of Biomedical Engineering  
Project Title: Assistive Device for Autistic People 2

Prarthana Manoj Rajai  
Major: Chemical Engineering  
Faculty Adviser: Rajesh Dave, Department of Chemical and Materials Engineering  
Project Title: Real Time Analysis in Continuous Manufacturing of Orally Dissolving Films

Maliha Mathew  
Major: Biology  
Faculty Adviser: Cristiano Dias, Department of Physics  
Project Title: The Effects of Small Drugs on Structure of Alzheimer's Disease Protein

Mary A McGuinness  
Major: Chemistry  
Faculty Adviser: David Apigo, Department of Physics  
Project Title: Modeling the Topological Dynamics of Microtubules

Tracey Mraw  
Major: Biomedical Engineering  
Faculty Adviser: Bharat Biswal, Department of Biomedical Engineering  
Project Title: Functional Connectivity in Stroke Subjects

Waleed Mujib  
Major: Biology  
Faculty Adviser: Madhuvika Murugan, Department of Biomedical Engineering  
Project Title: Understanding changes in brain oscillations following blast induced traumatic brain injury

Justin Newkirk  
Major: Mechanical Engineering  
Faculty Adviser: Shawn Chester, Department of Mechanical Engineering  
Project Title: Vanishing Viscoelasticity in Polymeric Gels

Kush Patel  
Major: Civil Engineering  
Faculty Adviser: Jay Meegoda, Department of Civil and Environmental Engineering  
Project Title: Expediting the process of Food Waste Decomposition through Anaerobic Digestion

Reshma Paul  
Major: Biomedical Engineering  
Faculty Adviser: Vivek Kumar, Department of Biomedical Engineering  
Project Title: Application of Antibacterial Peptide Hydrogels in Diabetic Wound Healing Model

Ujjwala Rai  
Major: Chemical Engineering  
Faculty Adviser: Mathew Schwartz, College of Architecture and Design  
Project Title: Migration of Bacteria in Aggregates for optimized VOC uptake

Pedro Reis Moura  
Major: Chemical Engineering  
Faculty Adviser: Sagnik Basuray, Department of Chemical and Materials Engineering  
Project Title: Shear enhanced platform for protein purification

Ayushi Sangoi

Major: BME & CoE  
Faculty Adviser: Kyle Dobiszewski, Albert Dorman Honors College  
Project Title: Silica Implementation in Topological Body Armor

Rahul Shah  
Major: Biomedical Engineering  
Faculty Adviser: Namas Chandra, Department of Biomedical Engineering  
Project Title: Influence of Skull Strength on Shock Wave Propagation in Rats

Vatsal Shah  
Major: Mechanical Engineering and Computer Science  
Faculty Adviser: Roman Voronov, Department of Chemical and Materials Engineering  
Project Title: Automation of Stem Cell Migration and Growth Control using Electronically-Actuated Microfluidic Devices

Nitya Shah  
Major: Biology  
Faculty Adviser: Shahriar Afkhami, Department of Mathematical Sciences  
Project Title: Modeling the Distribution of Superparamagnetic Nanoparticles in the Bloodstream for Use in Magnetic Drug Targeting

Mansi Sheth  
Major: Biomedical Engineering  
Faculty Adviser: Treena Arinzeh, Department of Biomedical Engineering  
Project Title: Piezoelectric Biomaterial Characterization

Sydnee Sicherer  
Major: Biomedical Engineering  
Faculty Adviser: Alice Eun Jung Lee, Department of Biomedical Engineering  
Project Title: The Effect of a Native Pancreatic Tissue Matrix on Insulin-producing Cells for the Treatment of Diabetes

Niharika Singh  
Major: Biomedical Engineering  
Faculty Adviser: Bharat Biswal, Department of Biomedical Engineering  
Project Title: Machine Learning to further earlier studies on Alzheimer's Disease

Catherine Sousa  
Major: Mathematics and Computer Science  
Faculty Adviser: Lou Kondic, Department of Mathematical Sciences  
Project Title: Modeling Filtering Process Using Stochastic Simulations of Monte-Carlo Type

Sydney Sweet  
Major: Chemical Engineering  
Faculty Adviser: Xiaoyang Xu, Department of Chemical and Materials Engineering  
Project Title: Development of Nanogel Drug Delivery Systems for Heart Regeneration

Vinaya Thadhani  
Major: Biomedical Engineering  
Faculty Adviser: Bipin Rajendran, Department of Electrical and Computer Engineering  
Project Title: An Efficient Visual Learning System based on a Biomimetic Camera

Arif Uddin  
Major: History  
Faculty Adviser: Louis Hamilton, Albert Dorman Honors College  
Project Title: Wealth and Secularization in the Eternal City

Rytis Vaitekonis

Major: Civil Engineering

Faculty Adviser: Wen Zhang, Department of Civil and Environmental Engineering

Project Title: Multifunctional Reactive Electrochemical Membrane (REM) Filtration for Efficient Water Purification

Aayush Verma

Major: Mechanical Engineering

Faculty Adviser: Namas Chandra, Department of Biomedical Engineering

Project Title: Development and validation of a computational model of the interactions of a primary shock wave with a human head surrogate

Hazal Yalcin

Major: Biomedical Engineering

Faculty Adviser: Murat Guvendiren, Department of Chemical and Materials Engineering

Project Title: HA/PCL scaffolds for bone tissue regeneration

Juliana Yang

Major: Biomedical Engineering

Faculty Adviser: Xiaoyang Xu, Department of Chemical and Materials Engineering

Project Title: Nanoparticle-based Formulation for Oral Delivery of GLP-1 for Treatment of Diabetes