

# **Congratulations to the recipients of Undergraduate Summer Research Awards 2016!**

The following is a list of students receiving 2016 Provost Summer Research Fellowships awards.

## **Paul Abatemarco**

Major: Chemical Engineering, Chem, Bio & Pharma Engr

Faculty Advisor: Dr. Roman Vonorov

**Project Short Title: Development of a Microfluidic Cell Culture System for the Study of Stem Cell Motility**

## **Nadia Al-Ebbinni**

Major: Chemical Engineering

Faculty Advisor: Dr. Robert Barat

**Project Short Title: Detailed Chemical Reaction Mechanism Simulations of Methane Partial Oxidation**

## **Ayesha Ali**

Major: Biomedical Engineering

Faculty Advisor: Dr. Sahin Mesut

**Project Short Title: The Fabrication of a Novel Carbon Fiber Microelectrode for Interfacing with the Brain**

## **Sugosh Anur**

Major: Biomedical Engineering

Faculty Advisor: Dr. Eun Jung Lee

**Project Short Title: Activation of Cardiac Fibroblasts Using Biaxial Stretching Replicating Heart Attack In Vivo**

## **Nahian Basith**

Major: Electrical and Computer Engineering

Faculty Advisor: Professor Mohammed Feknous

**Project Short Title: Computer Vision**

## **James Basuino**

Major: Computer Engineering

Faculty Advisor: Dr. Durga Misra

**Project Short Title: Modular Electronic Control Surface for Percussive Instruments**

## **Walter Berreta**

Major: Computer Engineering

Faculty Advisor: Dr. Cong Wang

**Project Short Title: A Reconfigurable Open-Architecture Servo System for Research on Advanced Robotic Manipulation**

## **Andrea Cano**

Major: Civil and Environmental Engineering

Faculty Advisor: Dr. Wen Zhang

**Project Short Title: Microbial Fuel Cell (MFC) Lighting System for Mobile Systems**

**Wilmin Ceballos**

Major: Electrical and Computer Engineering

Faculty Advisor: Prof. Mohammed Feknous

**Project Short Title: Computer Vision**

**Albert George Fraser V**

Major: Physics

Faculty Advisor: Dr. Cristiano Dias

**Project Short Title: Properties and Designs of Amyloid Fibrils**

**Michael Fredericks**

Major: Chemical Engineering

Faculty Advisor: Dr. Roman Voronov

**Project Short Title: Mesenchymal Stem Cell Migration and Growth in Microfluidic Devices**

**Einreb Funda**

Major: Electrical and Computer Engineering

Faculty Advisor: Prof. Mohammed Feknous

**Project Short Title: Implementation of Electroencephalography to Generate Digital Instructions**

**Hannah Gattuso**

Major: Biomedical Engineering

Faculty Advisor: Dr. Eric Fortune

**Project Short Title: Differences in Neural Processing of small and large moving sensory images**

**Robert Gioia**

Major: Information Technology

Faculty Advisor: Dr. Tara Alvarez

**Project Short Title: Proposal to Develop Novel Video Game for Oculus Rift Platform to Therapy Children with Traumatic Brain Injury and Vision Disorders**

**Beverly Glasgow**

Major: Civil Engineering

Faculty Advisor: Dr. Mengyan Li

**Project Short Title: Biotransformation of 1,4-Dioxane and Co-occurring Contaminants by an Enriched Propanotrophic Consortium**

**Ravindu Gunawardana**

Major: Computer Engineering

Faculty Advisor: Dr. Bipin Rajendran

**Project Short Title: Hand-written Digit Recognition on an Embedded GPU**

**Victoria Harbour**

Major: Department of Chemical, Biological and Pharmaceutical Engineering

Faculty Advisor: Dr. Sagnik Basuray; Dr. James Haorah

**Project Short Title: Characterizing the Blood-Brain-Barrier with the Micro-Total Neurological System**

**Zohour Hassan**

Major: Biomedical Engineering

Faculty Advisor: Dr. Bryan J. Pfister

**Project Short Title: Excitatory and inhibitory nerve study to generate a therapy for traumatic brain injury**

**Liem Ho**

Major: College of Science and Liberal Arts

Faculty Advisor: Dr. Michael Lee

**Project Short Title: Equality Network: Connecting Patients with LGBTQ Friendly Healthcare Providers**

**Andrew House**

Major: Biomedical Engineering

Faculty Advisor: Dr. Sagnik Basuray

**Project Short Title:  $\mu$ films-Micro Total Analytical System for studying Polymeric Film-Based Drug Delivery System**

**Assma Itani**

Major: Federal Department of Biological Sciences

Faculty Advisor: Dr. Gal Haspel

**Project Short Title: Role of specific inhibitory motoneurons in C. elegans locomotion examined via microfluids, tracking and optogenetics**

**Ashish John**

Major: Electrical Engineering

Faculty Advisor: Dr. Hieu P. Nygyen

**Project Short Title: III-Nitride Nanowire Solar Cells Grown by Molecular Beam Epitaxy**

**Richard Johnson**

Major: Mechanical Engineering

Faculty Advisor: Dr. Siva Nadimpalli

**Project Short Title: Design of a Testing Methodology to Measure the Polymer/Ceramic Interface**

**Ian Jordan**

Major: Electrical Engineering

Faculty Advisor: Dr. Denis Blackmore

**Project Short Title: Chaotic Circuits and a Method for Semi-Chaotic Encryption**

**Jimmy Lu**

Major: Computer Science and Mathematics

Faculty Advisor: Dr. Michael Bieber

**Project Short Title: Algorithms for contingencies and other features in highly flexible educational workflow systems**

**Kabir Mitra**

Major: Department of Chemical, Biological and Pharmaceutical Engineering

Faculty Advisor: Dr. Somenath Mitra

**Project Short Title:**  
**Utilization of Waste Heat to Generate Pure Water by Carbon Nanotube Enhanced Membrane Distillation: Application to Power Plants**

**Mehnaz Moon**

Major: Chemical Engineering  
Faculty Advisor: Dr. Wen Zhang

**Project Short Title: Microwave-Assisted Antifouling Membrane Filtration Technology**

**Jorge Murgueytio**

Major: Mechanical and Industrial Engineering  
Faculty Advisor: Dr. Zhiming Ji

**Project Short Title: Analysis of Stress and Strain in a Depressurized Tank with Wall Embedded Channels**

**Mariam Mushtaq**

Major: Department of Chemical, Biological and Pharmaceutical Engineering  
Faculty Advisor: Dr. Edward L. Dreizin

**Project Short Title: Energy Storage Materials with oxide-encapsulated inclusions of low melting metal**

**John Palmieri**

Major: Biomedical Engineering  
Faculty Advisor: Dr. Camelia Prodan

**Project Short Title: Microtubule Research**

**Shyamal Patel**

Major: Chemistry and Environmental Science  
Faculty Advisor: Dr. Yong-Ick Kim

**Project Short Title: Reconstitution of two component Circadian Oscillator from "proKaiC like seKaiC" to determine specific function of KaiA on KaiC A-loop and provide greater insight into Circadian Clock mechanism**

**Rohit Premkumar**

Major: Biological Sciences  
Faculty Advisor: Dr. Dirk Bucher

**Project Short Title: Co-modulation of neural circuit activity by different neuropeptides**

**Omar Qari**

Major: Biological Sciences  
Faculty Advisor: Dr. Daphne Soares

**Project Short Title: Mapping the Neural Connectivity of Midwater Amphipod Phronima**

**Umar Rao**

Major: Electrical and Computer Engineering  
Faculty Advisor: Prof. Mohammed Feknous

**Project Short Title: Implementation of Electroencephalography to Generate Digital Instructions**

**Gopal Ravindhran**

Major: Biology

Faculty Advisor: Dr. Cristiano L. Dias

**Project Short Title: The role of trimethylamine N-oxide in preventing protein misfolding during Alzheimer's disease**

**Ryan Rayman**

Major: Biology

Faculty Advisor: Dr. Roman Voronov

**Project Short Title: Transfection for the Expression of Fluorescent Proteins in Mesenchymal Stem Cells for High-Resolution**

**Matthew Reda**

Major: Mechanical Engineering

Faculty Advisor: Dr. Lu Lu

**Project Short Title: Autonomous Snow Removal**

**Jennifer Rochette**

Major: Biomedical Engineering

Faculty Advisor: Dr. Antje Ihlefeld

**Project Short Title: AudIQ: Auditory Cue Training to improve Auditory Awareness**

**Alan Romano**

Major: Computer Science

Faculty Advisor: Dr. Michael Bieber

**Project Short Title: Designing Instructor Mentoring and Oversight for Engaging Students in Participatory learning System**

**Kristen Scotti**

Major: Department of Chemical, Biological and Pharmaceutical Engineering

Faculty Advisor: Dr. Xiaoyang Xu

**Project Short Title: Engineering Ligand Targeted Polymer Nanoparticles for Drug Delivery across the Blood-Brain Barrier**

**Aesha Shah**

Major: Chemistry and Environmental Science

Faculty Advisor: Dr. Yong Kim

**Project Short Title: Circadian Clock Oscillation Mechanism in Cyanobacteria**

**Tasneem Shaltout**

Major: Chemistry and Environmental Science

Faculty Advisor: Dr. Alexei Khalizov

**Project Short Title: Tiny Particles, massive Impacts: The Relationship between the Morphological and Optical properties**

**Mansi Sheth**

Major: Biomedical Engineering

Faculty Advisor: Dr. Treena Arinzeh

**Project Short Title: Needleless Electrospinning**

**Michael Tadros**

Major: Federated History

Faculty Advisor: Dr. Elizabeth Petrick

**Project Short Title: Investigating the lack of voter participation among the demographic of 18-24 year olds**

**Prasanna Tati**

Major: Civil and Environmental Engineering

Faculty Advisor: Dr. Jay Meegoda

**Project Short Title: Low Cost Easily Replicated Water Filter made From Local Materials for Developing Countries**

**Ulysee Thompson**

Major: Information Technology

Faculty Advisor: Dr. Augustus Wendell; Dr. Burcak Ozludil

**Project Short Title: Prototyping a Temporospacial Simulation Framework: Case of an Ottoman Insane Asylum**

**Maira Valencia**

Major: Chemistry and Environmental Science

Faculty Advisor: Dr. Kevin Belfield

**Project Short Title: New Probes for Deep Vascular Imaging by Two-Photon Fluorescence Microscopy**

**Nevin Varghese**

Major: Electrical and Computer Engineering

Faculty Advisor: Dr. Hieu P. Nygyen

**Project Short Title: III-Nitride Nanowire Solar Cells Grown by Molecular Beam Epitaxy**