iSURE Research Projects for 2016

Below is the list of iSURE research projects for summer 2016. In the online application, please select your top three research projects in rank order.

College of Science

Department of Chemistry and Biochemistry

- Surface-enhanced Raman scattering for the detection of small molecules
- Synthesis and characterization of hybrid perovskite nanostructures

Department of Biological Sciences

- Investigate the dynamic interplay between tumor cells and metastatic tumor microenvironment using interdisciplinary approaches
- The Evasion of Detachment-Induced Metabolic Defects in Breast Cancer

Department of Chemistry and Biology

- Design and use of catalysts for the copolymerization of carbon dioxide with epoxides
- Late-Transition Metal Pincer-Type Complexes Involving Metal-Ligand Cooperation for Alkane and Small Molecule Activation

College of Engineering

Department of Computer Science and Engineering

- Medical imaging methods
- Analysis of images of the eye for iris recognition
- Big Data Research and Applications
- From Big Data to Small Data: Taming the two V's of Veracity and Variety
- Visual Data Analytics
- Assessment of Cognitive and Motor Skills using iOS-Based Tablet Games
- Experimental Comparison of Indoor Localization Techniques
- Detection of Emotions in Voice Recordings and Images of the Face

Department of Aerospace and Mechanical Engineering

- Multiscale modeling of the cell

Department of Electrical Engineering

- Design and analysis of high-performance compound semiconductor devices
- Fabrication process development for high-performance devices

- Formal design of human-robot collaboration in complex tasks

Department of Civil & Environmental Engineering & Earth Sciences

- Renewable Biocatalysis for Water Reuse through Enzyme Surface Display
- Engineering yeast for renewable biofuel production
- Waste to Value: Simultaneous Wastewater treatment and energy production using solar photo photoelectrochemical fuel cells

College of Arts and Letters

Department of Psychology

- Online Statistical Power Analysis for Simple and Complex Models
- Computerized Adaptive Testing System with Cognitive Diagnostic Feature