2015 Seed Opportunity for Economic Development Partnerships

Funded Projects

To develop a new esophageal tissue engineering bridge for esophageal atresia in Neonates
PI: Ying Deng - University of South Dakota
Co-Investigator: Sara Jones-Sapienza - University of South Dakota

In this project, we propose to develop new poly (glycerol–sebacate) (PGS)-based scaffolds for esophageal tissue engineering to address the challenges associated with the current approaches and thus provide a new tension-reducing device, a tissue engineered esophageal bridge, for clinical applications. Our long-term goal is to use the new PGS-based scaffolds as an esophageal tissue engineering bridge to treat esophageal malformations, which are a significant clinical concern and affect a large population.

Award Amount: $50,000

Using the Ferret Model of Influenza to Study the Efficacy of SAB-100
PI: Victor Huber - University of South Dakota
Industrial Collaborator: SAB Biotherapeutics

The South Dakota-based company SAB Biotherapeutics, Inc. (SAB) utilizes transchromosomic cattle technology to generate fully human polyclonal antibodies for use as passive immunotherapies. Using this technology, antibodies against influenza virus, known as SAB-100, have been created by SAB and tested by Victor Huber, PhD, at the University of South Dakota (USD) in a mouse model of lethal influenza virus infection. The ultimate goal of this proposal is to further develop anti-influenza polyclonal antibodies for therapeutic use in severe cases of seasonal influenza.

Award Amount: $50,000

A Disposable Electrochemical Field-Effect Sensor Based Conducting Polymer Hydrogel for Detection of Tear Film MMP-9 Inflammatory Marker
PIs: Zhengtao Zhu, Steve Smith - South Dakota School of Mines and Technology
Industrial Collaborator: Mastel Precision Surgical Instruments, Incorporated

This BioSNTR seed proposal focuses on the development of a proof-of-concept disposable sensor for tear film MMP-9 inflammatory marker, which has been considered an emerging diagnosis technology to objectively identify 'dry eye' and is associated with multiple other immune system responses. This collaborative research project will utilize existing organic electronics and single molecule imaging methods at SDSMT, partnering with Mastel Precision Surgical Instruments, Inc. (MPSI) to develop an advanced diagnosis tool of high interest in the field of Ophthalmology.

Award Amount: $38,128