Wednesday, October 14, 2020

Platform Sessions – 11:15 AM - 12:30 PM including Q&A

Track: Technologies for Emerging Infectious Diseases

Novel Diagnostic Tools for Diagnostic Tools for Infectious Diseases

11:15 AM - 11:25 AM
Paper-Based Electrochemical Nanosensor for Rapid and Sensitive Detection of SARS-CoV-2
Maha Alafeef1,2, Parikshit Moitra2, Ketan Dighe3, and Dipanjan Pan1,2,3
1University of Illinois at Urbana Champaign, Urbana, IL, 2University of Maryland Baltimore School of Medicine, Baltimore, MD, 3University of Maryland, Baltimore County, Baltimore, MD

11:25 AM - 11:35 AM
Robust, Non-Enzymatic Detection of SARS-CoV-2 RNA Using Enantiomeric Catalyzed Hairpin Assembly
Zackary Zimmers1 and Frederick Haselton1
1Vanderbilt University, Nashville, TN

11:35 AM - 11:45 AM
Development of CRISPR-ENHANCE technology for rapid detection of SARS-CoV-2 RNA
Piyush Jain1, Long Nguyen1, and Brianna Smith1
1University of Florida, Gainesville, FL

11:45 AM - 11:55 AM
Point-of-Care Technology for Rapid Diagnosis of Viral Diseases
Darlin Lantigua1 and Gulden Camci-Unal2
1University of Massachusetts Lowell, Lawrence, MA, 2University of Massachusetts Lowell, Lowell, MA

11:55 AM - 12:05 PM
Rapid Assessment of Clostridium difficile Spore Germination Using Impedance Cytometry to Predict Disease Severity
John Moore1, Carlos Honrado2, Armita Salahi2, Christopher Warburton2, Cirle Warren2, and Nathan Swami2
1University of Virginia, Waynesboro, VA, 2University of Virginia, Charlottesville, VA

12:05 PM - 12:15 PM
Multiplexed Detection of Interleukins in Blood Plasma for Rapid Detection of Sepsis as A Point-Of-Care Biosensor
Ambalika Tanak1, Sriram Muthukumar2, and Shalini Prasad3
1The University of Texas at Dallas, Richardson, TX, 2EnLiSense LLC, Allen, TX, 3University of Texas at Dallas, Richardson, TX

12:15 PM - 12:30 PM
Session Q&A

Track: Biomaterials

Biomaterials for Regenerative Medicine

11:15 AM - 11:35 AM
Biomaterials alter the B cell response in injury (Invited)
Erika Moore1, David Maestas2, Hannah Comeau2, and Jennifer Elisseeff2
1University of Florida, Gainesville, FL, 2The Johns Hopkins University, Baltimore, MD
11:35 AM - 11:45 AM
Collagen Binding Proangiogenic Glycan Mimetics for the Treatment of Ischemic Wounds
Tanaya Walimbe¹, Siqi He¹, Aijun Wang¹, and Alyssa Panitch¹
¹University of California, Davis, Davis, CA

11:45 AM - 11:55 AM
Induced Pluripotent Stem Cell-Derived Matrix as a Scaffold Material for Diabetic Ulcer Treatment
Cathal Kearney¹,², Francesco Santarella², Rukmani Sridharan³, Milica Marinkovic², Ronaldo Do Amaral², Avi Smith³, Jonathan Garlick³, and Fergal O'Brien²
¹University of Massachusetts Amherst, Amherst, MA, ²Royal College of Surgeons in Ireland, Dublin, Ireland, ³Tufts University, Boston, MA

11:55 AM - 12:05 PM
Towards the Development of a Fibrin Microthread Scaffold for the Treatment of Volumetric Muscle Loss
Meagan Carnes¹, Cailin Gonyea¹, Rebecca Mooney², Jane Njihia³, Jeannine Coburn¹, and George Pins¹
¹Worcester Polytechnic Institute, Worcester, MA, ²Bucknell University, Lewisburg, PA, ³University of Maryland, College Park, MD

12:05 PM - 12:15 PM
Resorbable, Shape Memory Stents to Improve Vaginal Wound Healing
Andrew Robinson¹, Felipe Beltran², Megan Wancura¹, Jennifer McCraken³, Julie Hakim³, Melissa Grunlan², and Elizabeth Cosgriff-Hernandez¹
¹University of Texas at Austin, Austin, TX, ²Texas A&M University, College Station, TX, ³Baylor College of Medicine, Houston, TX

12:15 PM - 12:30 PM
Session Q&A

Track: Biomedical Imaging and Instrumentation

Molecular Imaging

11:15 AM - 11:25 AM
Effect of Blood Transfusion on Cerebral Hemodynamics Measured by Diffuse Optical Spectroscopies
Seung Yup Lee¹, Eashani Sathialingam¹, Kyle Cowdrick¹, and Erin Buckley¹,²
¹Georgia Tech/Emory University, Atlanta, GA, ²Emory School of Medicine, Atlanta, GA

11:25 AM - 11:45 AM
Chemical Imaging in Biomedical Science (Invited)
Sapun Parekh¹
¹University of Texas at Austin, Austin, TX

11:45 AM - 11:55 AM
Simplified Instrument Calibration for FRET Microscopy
Nada Boustany¹, Audrey Menaesse², Daniel Sumetsky¹, Evan Gates³, and Brenton Hoffman³
²Rutgers University, Piscataway, NJ, ³EPFL, Lausanne, Switzerland, ³Duke University, Durham, NC

11:55 AM - 12:05 PM
Highly Multiplexed Molecular Profiling Platform Using Fluorescence Lifetime Imaging Microscopy (FLIM)
Hinesh Patel¹, Maha Rahim¹, Alexander Vallmitjana¹, Enrico Gratton¹, and Jered Haun¹
¹University of California, Irvine, Irvine, CA
12:15 PM - 12:30 PM  
Session Q&A

Track: Cellular and Molecular Bioengineering  
**Immunengineering**

11:15 AM - 11:35 AM  
**Transcriptional Programmes in Tumour-Infiltrating T Cells** (Invited)  
Anjana Rao$^1$  
$^1$University of California San Diego, La Jolla, CA

11:35 AM - 11:45 AM  
**Towards Computer-Made Antibiotics**  
Cesar de la Fuente$^1$  
$^1$University of Pennsylvania, Philadelphia, PA

11:45 AM - 11:55 AM  
**Leukotriene B4 Inhibits Lymphatic Drainage During Lymphedema Progression, Leading to Reduced Leukocyte Proliferation in Draining Lymph Node**  
Matthew Cribb$^1$, Aileen Suarez$^1$, and J. Brandon Dixon$^1$  
$^1$Georgia Institute of Technology, Atlanta, GA

11:55 AM - 12:05 PM  
**Patient-specific ‘Glioblastoma-on-a-chip’ for Personalized Anti-PD-1 Immunotherapy**  
Chao Ma$^1$, Xin Cui$^1$, Varshini Vasudevaraja$^2$, Dimitris Placantonakis$^2$, Matija Snuderl$^2$, and Weiqiang Chen$^1$  
$^1$New York University, Brooklyn, NY, $^2$New York University, New York, NY

12:05 PM - 12:15 PM  
**Macrophage Checkpoint Disruption and Tumor Opsonization Repress the Growth of Syngeneic Mouse Melanoma and Enhance the Endogenous Antitumor IgG Response**  
Lawrence Dooling$^1$, Jason Andrechak$^1$, Ruby Pan$^1$, Siddhant Kadu$^1$, Brandon Hayes$^1$, and Dennis Discher$^1$  
$^1$University of Pennsylvania, Philadelphia, PA

12:15 PM - 12:30 PM  
Session Q&A