

SCHEDULE OF PRESENTATIONS

Current as of March 6, 2020; subject to change

THURSDAY, MARCH 19

1:00PM - 6:00PM	Registration Desk Open <i>Pecan Tree Galleria</i>
5:30PM - 7:00PM	Welcome Reception <i>Pecan Tree Galleria</i>
7:15PM - 9:00PM	IBE Council Meeting <i>Betty Jean Craig Boardroom</i>

FRIDAY, MARCH 20

7:00AM - 6:00PM	Registration Desk Open <i>Kellogg Concourse</i>
7:00AM - 8:00AM	Continental Breakfast and Welcome Address <i>Magnolia Ballroom</i>
8:00AM - 9:00AM	Keynote Presentation <i>Magnolia Ballroom</i> The Interdisciplinarity of Innovation <i>Dr. Karen Burg</i>
9:00AM - 9:15AM	Coffee Break <i>Kellogg Concourse</i>
9:15am - 9:30AM	Presentation <i>Room TU</i> Printed Graphene and Nanoporous Gold Leaf Electrochemical Sensors for In-field Pesticide Monitoring <i>Jonathan Claussen, John Hondred, Igor Medintz, Scott Walpar, Bryan Van Belle and Zachary Johnson</i>
9:15AM - 9:45AM	Presentation <i>Room VW</i> Engineering an Extremely Thermophilic Cellulolytic Microorganism to Make Useful Products <i>Michael Adams</i>
9:15AM - 9:45AM	Presentation <i>Room YZ</i> Potential Problem of Irreversibly Absorbed Proteins for Long-Term Blood Compatibility of Biomaterials <i>Robert Latour</i>
9:30AM - 9:45AM	Presentation <i>Room TU</i> Laser Induced Graphene Electrochemical Immunosensors for Rapid and Label-free Monitoring of Foodborne Pathogens in Food Samples <i>Raquel Soares, Robert Hjort, Cicero Pola, Kshama Parate, Daniela Oliveira, Eric McLamore, Jonathan Claussen and Carmen Gomes</i>

9:45AM - 10:00AM	Presentation <i>Room TU</i> Electrochemical Biosensor for Highly Sensitive and Selective Detection of miRNA Cancer Biomarkers <i>Hamid Asadi and Ramaraja Ramasamy</i>
9:45AM - 10:15AM	Presentation <i>Room VW</i> Modular Cell Design Platform and Its Validation for Combinatorial Biosynthesis of Chemicals and Fuels <i>Cong Trinh</i>
9:45AM - 10:15AM	Presentation <i>Room YZ</i> Multi-Faceted Approaches to Biomaterial Modification to Improve Hemocompatibility <i>Christopher Siedlecki</i>
10:00AM - 10:15AM	Presentation <i>Room TU</i> Development of a Biosensor for Rapid Detection of Pesticides Residues in Honeybee Colony <i>Eric S McLamore and Yifan Tang</i>
10:15AM - 10:30AM	Presentation <i>Room TU</i> Taste Sensor Inspired Peptide-based Bacterial Identification on Smartphone-Based Paper Microfluidic Device <i>Sangsik Kim, Anakaren Romero-Lozano, Dong Soo Hwang and Jeong-Yeol Yoon</i>
10:15AM - 10:30AM	Presentation <i>Room VW</i> Understanding Sugar Co-Metabolism by Autotrophic Acetogens by Metabolic Modeling <i>Carrie Sanford, Ashley Beck and Mari Chinn</i>
10:15AM - 10:30AM	Presentation <i>Room YZ</i> Nitric Oxide Releasing Materials For Prevention of Thrombosis and Infection of Medical Devices <i>Hitesh Handa</i>
10:15AM - 10:45AM	Morning Refreshment Break <i>Kellogg Concourse</i>
10:45AM - 11:00AM	Presentation <i>Room TU</i> Application of High Hydrostatic Pressure and Nanofilms to the Fabrication of Enzyme Biosensors <i>Jose I Reyes De Corcuera and Daoyuan Yang</i>

10:45AM - 11:15AM	<p>Presentation <i>Room VW</i> Extreme Thermoacidophiles as Metabolic Engineering Platforms: Leveraging Chemolithotrophy <i>Robert Kelly</i></p>
10:45AM - 11:15AM	<p>Presentation <i>Room YZ</i> Investigating the Induction and Regulation of Neutrophil Extracellular Traps at Biomaterial-host Interfaces <i>Allison Fetz, Marko Radic and Gary Bowlin</i></p>
11:00AM - 11:15AM	<p>Presentation <i>Room TU</i> Concept for a Cell-based Biosensor for Early Alzheimer's Disease Detection <i>Brittany Watson, Melissa Moss and Francisco Gonzalez</i></p>
11:15AM - 11:30AM	<p>Presentation <i>Room TU</i> Bacteriophage and Phage Protein-based Biosensors for Detection of Foodborne Pathogens <i>Baviththira Suganthan, Yan Zhou, Dhara Patel, Clay Crippen, Christine Szymanski and Ramaraja Ramasamy</i></p>
11:15AM - 11:45AM	<p>Presentation <i>Room VW</i> Engineering an Orthogonal Redox Cofactor System for Cell-Free and Whole-Cell Biocatalysis <i>Han Li</i></p>
11:15AM - 11:45AM	<p>Presentation <i>Room YZ</i> Assembling Proteins and Sugars into Functional Materials Using Peptide-based Supramolecular Scaffolds <i>Greg Hudalla</i></p>
11:30AM - 11:45AM	<p>Presentation <i>Room TU</i> Disease Detection Using DNA Origami via Plasmonic Enhancement <i>Samantha Farmer, Rose Schaufli and Jacob Heath</i></p>
11:45AM - 12:00PM	<p>Presentation <i>Room TU</i> Computational Investigations of S100B Aptamer-Biomarker Interactions <i>Kristen Rhinehardt</i></p>
11:45AM - 12:00PM	<p>Presentation <i>Room VW</i> Growth-coupling Strains Development for Pyruvate-driven Biosynthesis <i>Ruihua Zhang, Jian Wang, Yan Zhang, Yajun Yan, Yaping Yang and Yuheng Lin</i></p>
11:45AM - 12:00PM	<p>Presentation <i>Room YZ</i> Stimuli-responsive Behavior from Giant Hyaluronan Polyelectrolyte Brushes <i>Jessica Faubel, Riddhi Patel, Jennifer Curtis and Blair Brettmann</i></p>

12:00PM - 12:15PM	<p>Presentation <i>Room TU</i> Raspberry Pi Based, UV-fluorescent Spectrophotometer Device for the Analysis of Oil Types Obtained from Oil Spills <i>Matthew Bills, Andrew Loh, Katelyn Sosnowski, Brandon Nguyen, Sung Yong Ha, Un Hyuk Yim and Jeong-Yeol Yoon</i></p>
12:00PM - 12:15PM	<p>Presentation <i>Room VW</i> Achieving Stable Phenotype Inheritance by Essential Gene-based Plasmid Displacement <i>Ruihua Zhang, Yaping Yang, Jian Wang, Yuheng Lin and Yajun Yan</i></p>
12:00PM - 12:30PM	<p>Presentation <i>Room YZ</i> Bio-Inspired Surfaces for Extracorporeal Life Support: A Clinically Relevant Protocol for Material Assessment and Development <i>Teryn Roberts, Jay Dean and Andriy Batchinsky</i></p>
12:15PM - 12:30PM	<p>Presentation <i>Room TU</i> Rapid Paper Microfluidic Assay for Nucleic Acid Amplification Assessment <i>Kenneth Schackart and Jeong-Yeol Yoon</i></p>
12:15PM - 12:30PM	<p>Presentation <i>Room VW</i> Trials and Tribulations in the Development of Genomic and Genetic Engineering Tools for <i>Yarrowia Lipolytica</i> <i>Mark Blenner</i></p>
12:30PM - 2:00PM	<p>Workshop and Lunch (Ticketed Event) <i>Room K/L</i> Mentorship Workshop <i>Kathleen Liang</i></p>
2:00PM - 2:15PM	<p>MNPR - Overview <i>Room TU</i></p>
2:00PM - 2:30PM	<p>Presentation <i>Room VW</i> Producing Enough, Fast Enough: Metabolic Engineering for Low-Resource Biosensors <i>Monica Mc Nerney, April Miguez and Mark Styczynski</i></p>
2:00PM - 2:30PM	<p>Presentation <i>Room YZ</i> Cell Seeded Microcarriers in Stirred Suspension for Increased Proliferation and Clinical Potential of Stem Cell Derived Vascular Smooth Muscle Cells <i>Christofer Baldwin, Srikanth Sivaraman and Raj Rao</i></p>
2:15PM - 2:45PM	<p>Presentation <i>Room TU</i> Materials for Phosphorus Recovery and Sustainability <i>Jacob L. Jones, Yue (Cecile) Zhi, Douglas F. Call, and Detlef Knappe</i></p>

2:30PM - 2:45PM	<p>Presentation <i>Room YZ</i> Generation and Characterization of Human Stem Cell Derived Smooth Muscle Cells for Elastic Matrix Regeneration <i>Srikanth Sivaraman, Jackson Hedrick, Chris Baldwin and Raj Rao</i></p>
2:30PM - 3:00PM	<p>Presentation <i>Room VW</i> Genome Engineering Tools Development and Metabolic Engineering of Solventogenic Clostridia for Biofuel and Biochemical Production <i>Jie Zhang, Jun Feng, Pixiang Wang and Yi Wang</i></p>
2:45PM - 3:00PM	<p>Presentation <i>Room TU</i> Effect of Microencapsulated Biofertilizers Containing Fischerella sp. and Their Combination with Chemical Fertilizers for Improved Tomato (Solanum Lycopersicum) Production <i>Andres Martinez-Rosales, Cicero Pola, Eustacio Ramirez-Fuentes, Maria Nieves Trujillo-Tapia, Adriana Hernandez-Rodrigues and Carmen Gomes</i></p>
2:45PM - 3:00PM	<p>Presentation <i>Room YZ</i> Development of Biomimetic, Extracellular Matrix-Based Scaffolds for Intervertebral Disc Repair <i>Jeremy Mercuri</i></p>
3:00PM - 3:15PM	<p>Presentation <i>Room TU</i> Effect of Ultrafine Bubbles on Water Quality Parameters for Agricultural Waters <i>Eduart Murcia and Sandra M. Guzmán</i></p>
3:00PM - 3:30PM	<p>Presentation <i>Room VW</i> GPCR-based Sensors for Biomedical Applications <i>Pamela Peralta-Yahya</i></p>
3:00PM - 3:15PM	<p>Presentation <i>Room YZ</i> Leviathan Polymer Brushes Generated by Hyaluronan Synthase <i>Jessica Faubel, Wenbin Wei, Riddhi Patel, Ellen Park, Blair Brettmann, Jennifer E. Curtis</i></p>
3:15PM - 3:30PM	<p>Presentation <i>Room TU</i> Aegagropila Linnaei Green Liver Systems for Sequestration of Glyphosate from Contaminated Water <i>Kelsey Vought, Ingrid V. Muriel Gutiérrez, Diana Vanegas, Irene Velez-Torres, and Eric S. McLamore</i></p>
3:15PM - 3:45PM	<p>Afternoon Refreshment Break <i>Kellogg Concourse</i></p>

3:45PM - 4:00PM	<p>Presentation <i>Room TU</i> Development of a Nanomaterials-based Biosensor for Rapid Detection of Glyphosate Residues in Water <i>David Bahamon-Pinzon, Steven A. Calderon-Hernandez and Diana C. Vanegas</i></p>
3:45PM - 4:15PM	<p>Presentation <i>Room VW</i> Creating a Promoter Library to Balance Heterologous Pathways in <i>Y. Lipolytica</i> by Engineering the TATA Box <i>Vijay Ganesan, Will Burnette, Patrick Dayton and Mark Blenner</i></p>
4:00PM - 4:15PM	<p>Presentation <i>Room TU</i> SeNSor Analytic Point Solutions (SNAPS) for assessing mercury in La Toma, Colombia <i>Kelli M. McCourt, Eric S. McLamore, Victoria L. Morgan and Diana C. Vanegas</i></p>
4:00PM - 4:30PM	<p>Presentation <i>Room YZ</i> Exploring Undergraduate Biological Engineering Student Perceptions of Learning Module Efficacy <i>Cheryl Gomillion</i></p>
4:15PM - 4:30PM	<p>Presentation <i>Room TU</i> Nanosensors & Decision Support Models Paired on a Mobile Device for Establishing a Participatory Program on Exposure of Mercury</p>
4:15PM - 4:30PM	<p>Presentation <i>Room VW</i> Harnessing Charged Amino Acids for CoA-free Biosynthesis of Short-chain (C3-C5) Diols <i>Chenyi Li, Jian Wang, Yusong Zou and Yajun Yan</i></p>
4:30PM - 4:45PM	<p>Presentation <i>Room TU</i> Improving Water Quality and Farm Profitability with Perennial Biomass Crops <i>Steph Herbstritt and Tom Richard</i></p>
4:30PM - 4:45PM	<p>Presentation <i>Room VW</i> Pyruvate Production by Pyruvate Dehydrogenase Variants in <i>Escherichia Coli</i> <i>W. Chris Moxley and Mark A. Eiteman</i></p>
4:30PM - 4:45PM	<p>Presentation <i>Room YZ</i> Computational Systems Biology in Biomedical Engineering: A Case Study of Active Learning <i>Melissa Kemp</i></p>
4:45PM - 5:00PM	<p>MNPR - Discussion <i>Room TU</i></p>

4:45PM - 5:00PM	Presentation <i>Room YZ</i> Implementation of CRISPR Based Educational Kits in the Intermountain Region <i>A.J. Walters, Charles Miller and Ryan Jackson</i>
5:00PM - 6:00PM	Break
6:00PM - 8:00PM	Bio-Inspired Design Workshop (Pdiaparti & Nagel) + Dinner (Ticketed Event) <i>Room K/L</i>

SATURDAY, MARCH 21

7:00AM - 8:00AM	Continental Breakfast, Society Updates <i>Magnolia Ballroom</i>
8:00AM - 9:00AM	Keynote Presentation <i>Magnolia Ballroom</i> Designing Bioengineering Tools to Understand Small-Scale Biological Interactions and Address Healthcare Needs <i>Dr. Delphine Dean</i>
9:00AM - 9:15AM	Coffee Break <i>Kellogg Concourse</i>
9:15AM - 9:45AM	Presentation <i>Room TU</i> Continuous Hydrogenation of Aqueous Furfural Using A Metal Supported Activated Carbon Monolith Compared to Granular and Powder Forms <i>Maryam Pirmoradi and Jim Kastner</i>
9:15AM - 9:45AM	Presentation <i>Room VW</i> Engineering Microbial Communities for the Production of Complex Plant Polyphenols <i>Mattheos Koffas</i>
9:15AM - 9:45AM	Presentation <i>Room YZ</i> Twenty-first Century Autonomous Regenerative Food Production Systems <i>Brahm P. Verma</i>
9:45AM - 10:00AM	Presentation <i>Room TU</i> Effect of Reactant Feeding Strategies on Synthesis of Superparamagnetic Iron Oxide Nanoparticles for Cellulolytic Magnetic Nanobiocatalyst Production <i>Ademola Hammed, Scott Pryor, Andriy Voronov and Achintya Bezbaruah</i>
9:45AM - 10:00AM	Presentation <i>Room VW</i> Discovery and Identification of New Crop-benefiting Soil Bacteria through Plant-microbe Interactions <i>Gary Zhan, Astrid Jacobson, Joan McLean, Anne Anderson and David Britt</i>
9:45AM - 10:00AM	Presentation <i>Room YZ</i> Estimating the Impacts of Bt Eggplant in Bangladesh <i>Ahsanuzzaman and David Zilberman</i>

10:00AM - 10:15AM	<p>Presentation Room TU Catalytic Graphitization of Biomass for Green Battery Anodes <i>Joe Sagues, Hasan Jameel, Mark Davis and Sunkyu Park</i></p>
10:00AM - 10:15AM	<p>Presentation Room VW Light to Electricity Conversion Using Genetically Modified Cyanobacteria as Photocatalyst <i>Bavithira Suganthan, Narendran Sekar and Ramaraja Ramasamy</i></p>
10:00AM - 10:15AM	<p>Presentation Room YZ Digital Proxy of a Bio-Reactor (DIYBOT) Combines Sensor Data and Analytics to Improve Bioreactor Control <i>Eric McLamore, Ray Huffaker, Shoumen Palit Austin Datta and Jamie Foster</i></p>
10:15AM - 10:30AM	<p>Presentation Room TU Python and Numerical Computation for Bio-Methane Potential Test <i>Yehor Pererva and Ronald C. Sims</i></p>
10:15AM - 10:30AM	<p>Presentation Room VW Electro-Active Communities for Hydrogen Production from Biomass Streams <i>Alex Lewis and Abhijeet Borole</i></p>
10:15AM - 10:30AM	<p>Presentation Room YZ The Scanning Plant IoT (SPOT) Facility Stephen Lantin, Shubham Shirbhate, Kelli McCourt, Aditya Singh, Melanie Correll and Eric McLamore</p>
10:15AM - 10:45AM	<p>Morning Refreshment Break <i>Kellogg Concourse</i></p>
10:45AM - 11:00AM	<p>Presentation Room TU Intermittent Cotreatment Enhanced Anaerobic Digestion of Switchgrass <i>Drew May, Anahita Bharadwaj, Michael Shreve and Tom Richard</i></p>
10:45AM - 11:15AM	<p>Presentation Room VW Microbial Biofilms: Synthesis, Structure and Enzymatic Removal <i>Bryan Berger</i></p>
10:45AM - 11:15AM	<p>Presentation Room YZ CyanoTRACKER: A Cloud-based Integrated Multi-platform Architecture for Global Observation of Cyanobacterial Harmful Algal Blooms <i>Deepak Mishra, Lakshmish Ramaswamy, Abhishek Kumar and Vinay Boddula</i></p>
11:00AM - 11:15AM	<p>Presentation Room TU Biochemical Production by Clostridium beijerinckii NCIMB 8052 Using Ensiled Biomass Sorghum as a Lignocellulosic Feedstock <i>Ana Zuleta-Correa, Mari Chinn and Jose Bruno-Barcena</i></p>

11:15AM - 11:30AM	<p>Presentation Room TU Integrating Anaerobic Digestion and Hydrothermal Carbonization for the Development of a Hybrid Biorefinery <i>Juliana Vasco-Correa, Luis Huezco and Aiyav Shah</i></p>
11:15AM - 11:30AM	<p>Presentation Room VW Dynamic Modeling of Community-environment Interactions in both Synthetic and Artificial Consortia <i>Ashley Beck</i></p>
11:15AM - 11:30AM	<p>Presentation Room YZ Gatorbyte – An Open-Source Platform For Low-Cost, Real-Time Water Resource Monitoring <i>Piyush Agade and Eban Bean</i></p>
11:30AM - 11:45AM	<p>Presentation Room TU Biopulping of Wheat Straw with Native Strain Fungi from Yaqui Valley <i>Sara Maldonado-Bustamante, Iram Mondaca Fernández, Sergio De Los Santos-Villalobos, Pablo Gortares-Moroyoqui, Jose De Jesus Balderas-Cortes and Maria Mercedes Meza-Montenegro</i></p>
11:30AM - 11:45AM	<p>Presentation Room VW Accelerating Lignocellulosic Anaerobic Digestion by Cotreatment <i>Anahita Bharadwaj, Michael Shreve, Lee Lynd and Tom Richard</i></p>
11:30AM - 11:45AM	<p>Presentation Room YZ Use of Multispectral UAS Imagery and Canopy-scale Spectroscopy to Assess Plant Nutrient Status <i>Shubham Shirbhate, Aditya Singh and James Fletcher</i></p>
11:45AM - 12:00PM	<p>Presentation Room VW Autotrophic and Heterotrophic Microbial Water Treatment in Extensive to Super-Intensive Fish and Shrimp Culture <i>David Brune</i></p>
12:30PM - 2:00PM	Break
2:00PM - 2:15PM	<p>Presentation Room VW Engineered Environments to Investigate Microenvironmental Regulation of Dormancy in Brain Metastatic Breast Cancer Cells <i>Akshay Narkhede, James Crenshaw and Shreyas Rao</i></p>
2:00PM - 2:30PM	<p>Presentation Room TU Drawdown, Ecosystems, and the Bioeconomy: The Power of Living Systems to Reverse Climate Change <i>Tom Richard</i></p>

2:15PM - 2:30PM	<p>Presentation <i>Room VW</i> Investigation of Microtubule Self-organization for Bioinspired Design and Swarm Intelligence <i>Sanjay Sarma Oruganti Venkata and Ramana Pidaparti</i></p>
2:30PM - 2:45PM	<p>Presentation <i>Room TU</i> Bioengineering Chaotic Solutions for Climate Change <i>Rocky An, Donna Cassidy-Hanley and David Yearsley</i></p>
2:30PM - 2:45PM	<p>Presentation <i>Room VW</i> Role of Hydroxyproline in the Mechanical Properties and Self-Assembly Capability of Nanoscale Collagen Mimetic Peptides – A Molecular Dynamics Investigation <i>Atul Rawal, Kristen Rhinehardt and Ram Mohan</i></p>
2:45PM - 3:00PM	<p>Presentation <i>Room TU</i> Potential Climate Change Solutions from Food Systems in Georgia <i>J Mullen, S Mani and Marshall Shepherd</i></p>
2:45PM - 3:00PM	<p>Presentation <i>Room VW</i> Filtration, Selective Isolation, and Concentration of Listeria Monocytogenes from Food Samples Using a Microfluidic Device <i>Or Zolti and Ramaraja Ramasamy</i></p>
3:00PM - 3:15PM	<p>Presentation <i>Room TU</i> Resource Assessment of Renewable Natural Gas Potential in Pennsylvania <i>Senorpe Asem-Hiablie, Tom Richard, Haley Baxter Stauffer, Matthew Arenas and Stephanie Herbstritt</i></p>
3:00PM - 3:15PM	<p>Presentation <i>Room VW</i> Food Sovereignty: A Pathway Towards Reviving the Food System of Native American Reservations in the USA <i>Amanda Tan</i></p>
3:15PM - 3:30PM	<p>Presentation <i>Room TU</i> Integrating CO2 Capture, Utilization, and Storage at Pulp & Paper Mills in the US <i>Joe Sagues, Hasan Jameel, Daniel Sanchez and Sunkyu Park</i></p>
3:30PM - 3:45PM	<p>Presentation <i>Room TU</i> Forest Carbon Management: Tradeoffs and Synergies Among Bioenergy, Biomaterials, and Carbon Storage in Ecosystems and Geosystems <i>Anahita Bharadwaj and Tom Richard</i></p>
3:30PM - 4:00PM	<p>Afternoon Refreshment Break <i>Kellogg Concourse</i></p>

3:45PM - 4:00PM	Presentation <i>Room TU</i> Economic and Environmental Impact Assessments of Biomass Torrefaction Technology <i>Maryam Manouchehrinejad, Kamalakanta Sahoo and Sudhagar Mani</i>
5:00PM - 6:00PM	Reception / Posters / Student Competitions <i>Pecan Tree Galleria</i>
6:00PM - 8:00PM	IBE Banquet Dinner & Awards (Ticketed event) <i>Magnolia Ballroom</i>
8:00PM - 9:30PM	IBE Council Meeting <i>Betty Jean Craige Boardroom</i>