

**SCHEDULE OF PRESENTATIONS**  
**(Current as of March 2, 2018; subject to change)**

**THURSDAY, APRIL 5, 2018**

<b>1:00 PM – 6:00PM</b>	<b>Registration Desk Open</b> <i>3<sup>rd</sup> Floor – Presidential Foyer</i>
<b>5:00 PM – 6:00 PM</b>	<b>Welcome Reception</b> <i>3<sup>rd</sup> Floor – Presidential Foyer</i>
<b>7:00 PM – 8:00 PM</b>	<b>IBE Leadership Council Meeting</b> <i>2<sup>nd</sup> Floor – Coral Sea Boardroom</i>
<b>8:00 PM – 8:45 PM</b>	<b>Training Session for Facilitators</b> <i>Hampton Ballroom III</i>

**FRIDAY, APRIL 6, 2018**

<b>7:00 AM – 6:00 PM</b>	<b>Registration Desk Open</b> <i>3<sup>rd</sup> Floor – Presidential Foyer</i>
<b>7:00 AM – 8:00 AM</b>	<b>Continental Breakfast</b> <i>3<sup>rd</sup> Floor – Presidential Foyer</i>
<b>8:00 AM</b>	<b>Welcome/Opening Remarks/General Session - Hampton Ballroom IV, V</b> <b>Opening Remarks:</b> David Jones, IBE President-Elect <b>Keynote Address:</b> Mike Domach, Carnegie Mellon University <i>“Biological Engineering Education – Evolution, Present and Future”</i>
<b>Forum Session I – Hampton Ballroom IV, V</b> <b>Theme:</b> <i>Philosophy, Content and Best Practices of Undergraduate Biological Engineering Education</i> <b>Chair:</b> David Jones, University of Nebraska	
<b>8:45 AM</b>	<b>Plenary Presentation</b> <i>Biological Engineering Background and Challenge</i> Dr. Arthur T. Johnson, Professor Emeritus, University of Maryland
<b>9:20 AM</b>	<i>Curricular Innovations in Biological Engineering: Laboratories, Biomakng and Communication</i> Maxine Jones, Scott Manalis, Linda Griffith and Doug Lauffenburger, MIT
<b>9:35 AM</b>	<i>Experiential Learning Strategies for the Development of Core Competencies in Bioengineering Students</i> Oscar Alejandro Aguilar Jiménez, Tecnológico de Monterrey, School of Engineering and Sciences, Monterrey, México
<b>9:50 AM</b>	<i>Biological Engineering Curricula: Toward a Harmonizing Core?</i> Ashim Datta, Cornell University

<b>10:00 AM</b>	<b>Break</b>
<b>10:15 AM</b>	<i>Closed Loop Integration of Social Action and Analytical Chemistry Research (CLISAR)</i> Diane Vanegas, School of Food Engineering, Universidad del Valle, Cali, Colombia
<b>10:30 AM</b>	<i>Establishing Innovative Biomedical Engineering Programs in Ecuador</i> Spiros Agathos, Yachay Tech University, San Miguel de Urucuquí, Ecuador
<b>10:45 AM</b>	<i>Emerging Paradigms in Biological Engineering Education: A Biochemical Engineering Perspective with Reference to Indian Industry</i> Pradeep Srivastava, School of Biochemical Engineering, Indian Institute of Technology (BHU)
<b>11:00 AM</b>	<b>Discussion Session</b>
<b>11:30 PM</b>	<b>Working Lunch – Room TBA</b> <b>Featured Presentation:</b> <i>Future Trends in Engineering Education</i> Stephanie G. Adams, Dean, College of Engineering, Old Dominion University
<b>12:45 PM</b>	<b>Break</b>
<b>Forum Session II – Hampton Ballroom IV, V</b> <u>Theme:</u> <i>Core Competencies and Role of Convergence for Educating Practicing Biological Engineers</i> <u>Chair:</u> Lalit Verma, University of Arkansas	
<b>1:00 PM</b>	<b>Plenary Presentation: Title Pending</b> TBD, NFS Director of Engineering & Biomedical Systems
<b>1:20 PM</b>	<i>Title Pending</i> Shashank Priya, Director, Bioinspired Materials and Devices Lab., Virginia Tech
<b>1:35 PM</b>	<i>Convergent Solutions for Sustainability: Photosynthesis, Ruminant and Landscape Design</i> Tom Richard, Penn State University
<b>1:50 PM</b>	<i>Title Pending</i> Parag R. Chitnis, Deputy Director, NIFA/USDA
<b>2:05 PM</b>	<i>Core Competencies and Convergence for Sustaining World's Natural Resources: Perspectives from 40 Years of Professional Practice</i> Jim Dooley, Forest Concepts
<b>2:20 PM</b>	<b>Discussion Session</b>
<b>THREE CONCURRENT SESSIONS</b>	
<b>Concurrent Session I: Bioenergetics and Conversion Technologies – Hampton Ballroom I</b> Chairs: Yanna Ling, and Sandeep Kumar, Old Dominion University	
<b>3:00 PM</b>	<i>High-starch Sweet Potatoes as Alternative Feedstocks for Butanol Production</i> Ana Zuleta Corre and Mari S. Chinn, North Carolina State University
<b>3:15 PM</b>	<i>Achieving Useful Xylose Utilization with Clostridium Autoethanogenum</i> Rachel Marie Slivka and Mari S. Chinn, North Carolina State University
<b>3:30 PM</b>	<i>Algalytic Bacteria Increase Methane Production during Anaerobic Digestion of Algal Biomass</i> Anna Doloman, Utah State University
<b>3:45 PM</b>	<i>Transitory Gas Evolution During the Initiation Stage of Gasification of Rapeseed (Brassica rapa oleifera) Straw Biomass</i> Raluca-Nicoleta Tirtea, University POLITEHNICA of Bucharest

<b>4:00 PM</b>	<i>Assessment of Food Court Waste Transformations During Pyrolysis Processing</i> Iustina Stanculescu, University POLITEHNICA of Bucharest
<b>4:15 PM</b>	<i>Flash Hydrolysis of Bethnic Algae Biomass</i> Richard Talbot and Sandeep Kumar, Old Dominion University
<b>4:30 PM</b>	<i>Industrial and Environmental Developments of Microalgae in Italy: The Future of Nitrogen Fixation for Biofertilizer Production of Phycoremediation</i> Alberto Bertucco, Centre Levi Cases and DII, University of Padova
<b>4:45 PM</b>	<i>Recovery of Proteins, Carbohydrates, and Organic Acids from Flash Hydrolysate of Microalgae</i> Ashani Samaratunga and Sandeep Kumar, Old Dominion University
<b>5:00 PM</b>	<i>Modeling Phenology in the Common Bean: A Nonlinear G X E Approach</i> Melanie Correll, University of Florida

**Concurrent Session II: Biosensors – Hampton Ballroom II**

Chair: Heather Hunt, University of Missouri

<b>3:00 PM</b>	<i>Rapid Nanosensors for Measuring Methylmercury Associated with Illegal Mining in Rural Colombia</i> Eric McLamore, University of Florida
<b>3:15 PM</b>	<i>Combined Dielectrophoresis and Raman Spectroscopy for Detecting and Identifying Bacteria</i> Elizabeth Vargis, Utah State University
<b>3:30 PM</b>	<i>An Electrochemical Impedimetric Sensor for Rapid Detection of L. Monocytogenes with Bacteriophage Modified Magnetic Part</i> Yan Zhou and Ramaraja Ramasamy, University of Georgia
<b>3:45 PM</b>	<i>pH-Sensitive Polymer-Platinum Nanoparticles Biosensor for Rapid Detection of Listeria Monocytogenes</i> Daniela Alves de Oliveira, Texas A&M University
<b>4:00 PM</b>	<i>Cell Chromatography: Two-Layer, Paper-Based Microfluidic Purification and Quantification of Red Blood Cells, Granular, and Agranular White Blood Cells</i> Matthew Bills and Jeong-Yeol Yoon, University of Arizona
<b>4:15 PM</b>	<i>Detection of Methyl Salicylate Using Esterase, Salicylate Hydroxylase and Tyrosinase-based Tri-enzymatic Biosensor</i> Yi Fang and Ramaraja Ramasamy, University of Georgia
<b>4:30 PM</b>	<i>Characterization of a Novel Purple Non-Sulfur Bacterium for Bioremediation of Petrochemical Wastewater</i> Andrew J. Walters, Utah State University
<b>4:45 PM</b>	<i>Magnetic Separation of Food-Borne Pathogens in a Microfluidic Device</i> Alyssa Paige Ghuman and Ramaraja Ramasamy, University of Georgia
<b>5:00 PM</b>	<i>Charge and Temperature Based Techniques for Modulating Molecule Transport in Nanochannels</i> Guigen Zhang and Yu Zhao, University of Kentucky

**Concurrent Session III: Metabolic Engineering and Synthetic Biology – Hampton Ballroom III**

Chairs: Ryan Summers, University of Alabama; Jixun Zhan, Utah State University

<b>3:00 PM</b>	<i>Enhancing Photo Current Generating Ability of Synechococcus elongatus PCC7942 Lacking Respiratory Terminal Oxidases</i> Baviththira Suganthan and Ramaraja Ramasamy, University of Georgia
<b>3:15 PM</b>	<i>Exploring Extracellular Electron Transfer in Pyrococcus Furiosus by Manipulating the Cytoplasmic Hydrogenase to Increase the Electrogenic Activity</i> Baviththira Suganthan and Ramaraja Ramasamy, University of Georgia
<b>3:30 PM</b>	<i>The Roles of Three Regulatory Proteins in the Biosynthesis of Angucyclines Sch47554 and Sch47555</i> Ozkan Fidan and Jixun Zhan, Utah State University

<p><b>3:45 PM</b></p>	<p><i>Promoter Engineering for Applications in Pathway Engineering in Cyanobacterium Synechococcus Elongatus PCC 7942</i> Annesha Sengupta and Pramod P Wangikar, Indian Institute of Technology Bombay, DBT-Pan IIT Center for Bioenergy</p>
<p><b>4:00 PM</b></p>	<p><i>Considerations for Using Hammerhead-Based Riboswitches in the 5'-UTR to Control Genes in Bacteria</i> Ryan M. Summers, Alexandra Wrist and Wanqi Sun, University of Alabama</p>
<p><b>4:15 PM</b></p>	<p><i>Organisms with Alternative Genetic Codes Resolve Translation at Unassigned Codons Through Mistranslation and Ribosomal Rescue</i> Natalie J. Ma, Colin F. Hemez, Karl W. Barber, Jesse Rinehart and Farren J. Isaacs, Yale University</p>
<p><b>4:30 PM</b></p>	<p><i>Targeted and Efficient Drug Delivery via Cell-Nanoparticle Hybridization for Reduced Off-Target Toxicity</i> Remy C. Cooper, Virginia Commonwealth University; Leyuan Xu, Yale University; Juan Wang and Hu Yang, Virginia Commonwealth University</p>
<p><b>4:45 PM</b></p>	<p><i>Sewage PD: A Single Chassis Ammonia Removal Device for Use in Wastewater Treatment Systems</i> Vikram Seshadri and Christia Aspili, University of Virginia</p>
<p><b>5:00 PM</b></p>	<p><i>Modular Control of Gene Expression Speed using Protein Degradation Tags</i> Callan Monette and Margaret Saha, College of William and Mary</p>
<p><b>5:30 PM – 6:00 PM</b></p>	<p><b>General Session:</b> <i>Site-Specific Albumin Conjugation of Therapeutic Proteins for the Prolonged Serum Half-Life</i> Inchan Kwon, PhD., GIST Dean of Research and The Korean Society for Biotechnology and Bioengineering (KSBB) <b>Hampton Ballroom IV, V</b></p>

## SATURDAY, APRIL 7, 2018

<b>7:00 AM – 6:00 PM</b>	<b>Registration Desk Open</b> <i>3<sup>rd</sup> Floor – Presidential Foyer</i>
<b>7:00 AM – 8:00 AM</b>	<b>Continental Breakfast/New Officer Training/Committee Meetings/Poster Set-Up</b> <i>Various Locations Throughout the Marriott</i>
<b>Forum Session III – Hampton Ballroom IV, V</b> <b>Theme:</b> <i>Graduate and Postgraduate Training for Non-academic Careers</i> <b>Chair:</b> D. Keith Roper, University of Arkansas	
<b>8:00 AM</b>	<b>Plenary Presentation: Title Pending</b> <b>TBD, Biomedical Research Workforce</b>
<b>8:20 AM</b>	<i>Wadhvani Research Center for Bioengineering at IIT Bombay: A New Model for Interdisciplinary Research</i> Pramod P. Wangikar, Professor, IIT Bombay
<b>8:35 AM</b>	<i>The Impact of Biological Engineering Graduate Education: Perspective of an Entrepreneurial Graduate</i> Goutham Vemuri, Chief Technologist, Sasya, LLC
<b>8:50 AM</b>	<i>Transdisciplinary Biological Engineering Education: The Need for Integrating the “Two Cultures”</i> Jeffrey M. Catchmark, Professor & Director of Graduate Studies, Penn State University
<b>9:05 AM</b>	<i>An Industry Perspective on the Desired Skills, Competencies, and Preparation from Biological Engineers</i> Anthony Doss, Vice President, Tyson Foods
<b>9:20 AM</b>	<b>Discussion Session</b>
<b>9:45 AM</b>	<b>Morning Break</b>
<b>Forum Session IV – Hampton Ballroom IV, V</b> <b>Theme:</b> <i>Professional Society Coalition to Facilitate Convergence for Biological Engineering Education</i> <b>Chair:</b> Brahm Verma, University of Georgia	
<b>10:00 AM</b>	<b>Title Pending NSF Division Director of Molecular &amp; Cellular BioSciences</b>
<b>10:15 AM</b>	<b>Title Pending</b> Dr. Krish Roy, Director of Marcus and NSF Cell Manufacturing Tech Centers, Georgia Tech
<b>10:30 AM</b>	<b>Title Pending</b> Dr. David Peden, University of North Carolina
<b>10:45 AM</b>	<i>The Role of Professional Societies in Supporting Biological Engineering</i> Dr. Steve Searcy, ASABE President
<b>11:00 AM</b>	<i>Broadening the Education and Outreach of Biological Engineering</i> Dr. Guru Madhavan, The US National Academies
<b>11:15 AM</b>	<b>Discussion Session</b>

<b>12:00 Noon</b>	<b>Working Lunch with Four Breakout Session</b> Chair: David Jones, University of Nebraska
	<u>Breakout Session 1</u> <i>What should be the character and content of undergraduate biological engineering programs where its graduates will have essential core competencies required of practicing engineers?</i>
	<u>Breakout Session 2</u> <i>How best to incorporate Convergence in graduate and postdoctoral education for preparing students to frame complex real-world problems?</i>
	<u>Breakout Session 3</u> <i>What are unmet needs of biological engineering stakeholders and employers, vis a vis, emerging smart, self-organizing systems, e.g., involving sensor fusion, UAVs, CRISPR</i>
	<u>Breakout Session 4</u> <i>How will a professional society nexus facilitate transdisciplinary integration (Convergence) for educating biological engineers?</i>
<b>THREE CONCURRENT SESSIONS</b>	
<b>Concurrent Session I: Biomaterials and Tissue Engineering -Hampton Ballroom I</b> Chair: Elizabeth Vargis, Utah State University	
<b>2:00 PM</b>	<i>Development of PCL-Based Formulations for Use in UV-Activated Bio-adhesives</i> Deidra Ward, Clemson University, Maya Barbour, South Carolina State University; Jordan Howard, South Carolina State University; Dr. Terry Steele, Nanyang Technological University
<b>2:20 PM</b>	<i>Antioxidant Activity and Thermal Stability of SOD and Catalase Conjugated with Nanocrystalline Cerium Dioxide</i> Bradley Skelton, Clemson University, Mikhail Bredikhin, Clemson University; Dr. Dmitry Gil, Clemson University; Dr. Vladimir Ivanov, Kurnakov Institute of General and Inorganic Chemistry; Dr. Vladimir Reukov, Clemson University
<b>2:40 PM</b>	<i>Electrospinning Lecithin-Polycaprolactone Scaffolds with Gold Nanoparticles for Osteoarthritis Prevention</i> Toni Matson, University of Missouri and Sheila Grant, PhD
<b>3:00 PM</b>	<i>Cerebral Organoids Modeling Zika Virus Induced Microcephaly</i> Angela Clyde and Yu Huang, Utah State University
<b>3:20 PM</b>	<i>Predicting Scalable Heating Rates in Nanoantenna-Embedded Soft Matter</i> Donald Roper, University of Arkansas
<b>3:40 PM</b>	<i>Planar Bilayer Experiments with Synthetic Anion Transporters in Model Membrane Systems</i> Farnaz Minooei, Michael D. Martin and Joel R. Fried, University of Louisville
<b>Concurrent Session II: Biological Engineering Education – Hampton Ballroom II</b> Chair: Charles Miller, Utah State University	
<b>2:00 PM</b>	<i>Convergence of Knowledge and Technology for Supporting Participatory Monitoring</i> Eric McLamore, University of Florida
<b>2:25 PM</b>	<i>Engineering - An Enabling Fusion of Art And Science</i> Brahm Verma, University of Georgia; Lalit Verma, University of Arkansas; Ron Sims, Utah State University
<b>2:50 PM</b>	<i>Bio-inspired Design Innovation through C-K Theory in Engineering Education</i> Ramana Pidaparti, University of Georgia; Dr. Jacquelyn Nagel, James Madison University

<b>3:15 PM</b>	<i>The STEAM-H Experience: A Transdisciplinary Approach to Undergraduate Education and Community Engagement</i> Shilpa Iyer and Raj Rao, University of Arkansas
<b>3:40 PM</b>	<i>Teaching Problem Solving to Biological Engineering Students: THE Case of Heat and Mass Transfer</i> Ashim Datta, Cornell University
<b>4:05 PM</b>	<i>Education and Public Engagement in iGEM</i> Alyssa Luz-Ricca, College of William & Mary
<b>Concurrent Session III: Biomedical Engineering – Hampton Ballroom III</b> Chair: Mark Haidekker, University of Georgia and Yu Huang, Utah State University	
<b>2:00 PM</b>	<i>Chimeric Construction and Gene Expression of Butelase (B1) and Viola Uliginosa Plant (Vu)</i> Shanice Fezeu, Benedict College; Michael Summers, Clemson University; Huang Mei, Nanyang Technological University; James P Tam, Nanyang Technological University
<b>2:20 PM</b>	<i>Characterizing the Effects of Radiation on Muscle Cells</i> Elizabeth Vargis, Utah State University
<b>2:40 PM</b>	The Korean Society for Biotechnology and Bioengineering (KSBB)
<b>3:00 PM</b>	<i>A Swarm Engineering Framework for Microtubule Self-Organization</i> Sanjay Sarma and Oruganti Venkata, University of Georgia
<b>3:20 PM</b>	<i>PBPK Modeling: A Novel, In Silico Method for Predicting Nicotine Vaccine Efficacy</i> Kyle Saylor and Chenming Zhang, Virginia Tech
<b>3:40 PM</b>	<i>Identifying Neuronal Differentiation from Human Stem Cells through Raman Spectroscopy</i> Yu Huang, Utah State University
<b>POSTER SESSION, RECEPTION AND BANQUET</b>	
<b>4:00 PM</b>	<b>Poster Session – Hampton Ballroom VI, VII</b>
<b>5:00 PM</b>	<b>Reception and Poster Session – Hampton Ballroom IV, V, VI, VII</b>
<b>6:15 PM</b>	<b>Banquet – Hampton Ballroom IV, V</b>
<b>8:15 PM</b>	<b>IBE Council Meeting</b>

