

# CPAC Summer Institute 2020

## Mornings of July 21 and 22, 2020

### Expanding Process Understanding Based on the Use of Sensors and Data Handling

#### Day One: Next Generation Processing Approaches to Enable Maximum Efficiency in the Production of Pharmaceuticals, Chemicals, and Biomaterials

#### Tuesday, July 21, 2020 Day One Morning Session

8:00-8:10	<b>Introduction to the Program and the Theme for Each Morning</b> Mel Koch, CPAC and MK Optimization and Control
8:10-8:30	<b>API Synthesis in Africa Exploiting Continuous Manufacturing and the Importance of PAT Tools</b> Paul Watts, Nelson Mandela University, South Africa
8:30-8:50	<b>The Medicines for All Institute – Program Overview</b> Frank Gupton, Virginia Commonwealth University, USA
8:50-9:10	<b>Real Time PAT Based Knowledge Management and Control in Biological Processes</b> Dan Hill, Biogen
9:10-9:20	<b>Break – Discussion / Questions</b>
9:20- 9:40	<b>Implementation of Fisher Ratio Analysis to Improve Classification of Sulfur-Contaminated Jet Fuels Using Comprehensive Two-Dimensional Gas Chromatography-Time-of-Flight Mass Spectrometry Data</b> Paige Sudol, Grant Ochoa, Rob Synovec, Chemistry, UW
9:40-10:00	<b>Improvements in Biopharma PAT with Sequential Injection</b> Dan Hasle and Ilkka Lähdesmäki, FIA Labs
10:00-10:20	<b>Advances in Analytical Sensing</b> Brian Marquardt, MarqMetrix

10:20-10:35	<b>Break Discussion / Questions</b>
10:35-10:55	<b>Ammonia Sensing with Single-Walled Carbon Nanotubes</b> Alex Mamishev, SEAL Lab, Electrical Engineering, UW
10:55-11:15	<b>Improving Pharmaceutical Manufacturing Processes with Molecular Rotational Resonance (MRR) Spectroscopy</b> Justin Neill, BrightSpec
11:15-11:35	<b>Innovative Measuring Tools</b> Richard Becker, Blaze Metrics
11:35-11:55	<b>Leveraging CPAC Connections to Drive PATs in Procter &amp; Gamble</b> Brian Goodlander, Procter & Gamble
11:55	<b>Discussion on the Theme for Day One</b>
<b>12:30</b>	<b>End of Session</b>

## **Day Two: Enabling More Efficient Personalized Medicine and Complex Process Optimization of Bio-based Processes and Petrochemical Operations**

### **July 22, 2020 Day Two Morning Session**

8:00-8:10	<b>Introduction to the Summer Institute Theme</b> Mel Koch, CPAC, APL, UW
8:10-8:30	<b>The Importance of Multiple Sensors in Evaluating Personalized Medicine</b> Babatunde A. Ogunnaike, University of Delaware, USA and Ray Chrisman, MK Optimization and Control LLC, USA
8:30-8:50	<b>Real Time PAT Based Knowledge Management and Control in Continuous Processes</b> Martin Gadsby, Optimal Industrial Automation Ltd.
8:50-9:10	<b>What's Next? The Changing Role of Chemometrics and Instrumentation for Process Analytics</b> Brian Rohrback, Infometrix, Inc.
9:10-9:25	<b>Break Discussion / Questions</b>

9:25-9:45	<b>'The Moon Dust Tablet'- Evaluation of Long-Term Stability of Pharmaceutical Ingredients in an Excipient Matrix for Use in Potential Future On-Orbit Manufacturing</b> Volker Hessel, Adelaide University, Australia
9:45-10:05	<b>The Use of a Paper Based System for Disease Detection</b> Paul Yager, Bio-Engineering, UW
10:05-10:25	<b>The Role of Lignin as a Sustainable Replacement for Fossil-Based Aromatic Chemicals</b> Ludo Diels, VITO, Belgium
10:25-10:45	<b>Process Analytical Technologies for Bioreactor Monitoring and Control</b> James Collett, Pacific Northwest National Laboratory (PNNL)
<b>10:45-11:00</b>	<b>Break Discussion / Questions</b>
11:00-11:20	<b>Portable, Single-Sided NMR for Industrial Applications</b> Matt Augustine and Sophia Fricke, Chemistry, UC Davis
11:20-11:40	<b>Advances in Ion Mobility / Mass Spectroscopy for Biomolecular Analysis</b> Matt Bush, Chemistry, UW
11:40-12:00	<b>Sensitivity Requirements for the Use of Raman in Downstream PAT</b> Mark Kemper, Brad Behr, Tornado
12:00	<b>Discussion on the Theme for Day Two and Overview of Day One and Day Two</b>
<b>12:45</b>	<b>End of Session</b>