

# CPAC Summer Institute 2017

## Process Characterization leading to Process Optimization

July 18-20, 2017, University of Washington, Seattle, WA

### Tuesday, July 18, 2017 - Allen Library 485 – Peterson Room

9:00	<b>Meeting Registration Desk Opens</b> – University of Washington Library, Peterson Room
9:05-9:15	<b>Introduction to the Summer Institute Theme</b> Mel Koch, CPAC, APL, UW
9:15- 9:50	<b>Expected Technology Directions in the Biomass to Chemicals Markets</b> Ray Chrisman, MK Optimization and Control
9:50-10:20	<b>Process Analytical Technology in Biologics</b> Cyrus Agarabi, US FDA CDER
<b>10:20-10:35</b>	<b>Break</b>
10:35-11:05	<b>What's Next? The Changing Role of Chemometrics and Instrumentation for Process Analytics</b> Brian Rohrback, InfoMetrix, Inc.
11:05-11:35	<b>Battery Free Sensing and Communication</b> Josh Smith, Electrical Engineering and Computer Sciences, UW
11:35-11:45	<b>FDA Poster, Interrogating the Reproducibility of Online Multivariate Calibration Models Used for Bioprocesses Monitoring and Characterization</b> Nicholas Trunfio, Office of Biotechnology Products, Office of Pharmaceutical Quality, CDER, FDA and University of Massachusetts, Lowell
11:45-12:10	<b>Introduction of Meeting Participants and Discussion</b>
12:10-1:15	<b>Lunch</b> (Boxed lunches on-site)
1:15-1:30	<b>Update on CPAC Activities</b> Mel Koch, CPAC, UW
1:30-2:10	<b>Low-Cost Disposable Point-of-Care Bioanalytical Devices based on Porous Materials for Detection of Pathogens in Low Resource Settings</b> Paul Yager, Bioengineering, UW
2:10-2:40	<b>Integrated waste treatment in a lignocellulosic biorefinery</b> , Tyler Tobin, Renata Bura, Hanna Hörhammer, Rick Gustafson, Forest Resources, , UW

2:40-3:00	<b>Break</b>
3:00-3:40	<b>Advances in the Use of PAT for Developments in Process Control</b> Brian Marquardt, UW, APL, CPAC, and MarqMetrix
3:40-4:10	<b>Data Analysis Strategies for GC-TOFMS and GCxGC-TOFMS with Tandem Ionization</b> Kelsey Berrier, Nick Moore, and Rob Synovec, Chemistry, UW
4:10-4:40	<b>A Scalable, High-density Biopotential Recording Architecture for Chronic Bi-directional Brain Computer Interfaces</b> William Anthony Smith, UW Electrical Engineering and SpaceX
4:40-5:15	<b>Discussion</b>
6:00	Dinner at Ivar's Salmon House

## Wednesday, July 19, 2017 – Allen Library 485 – Peterson Room

9:00-9:10	<b>Daily Overview</b> Ray Chrisman, MK Optimization and Control
9:10-9:40	<b>Expansion of PAT Tools with the Emphasis on the Integration of the Associated Technologies into an Integrated Informatics Communication, Analysis, and Control Solution.</b> Ernie Hillier, Waters
9:40-10:10	<b>Fluidic Analyzers for Process Control</b> Ilkka Lähdesmäki, FIALab Instruments, Inc.
10:10-10:30	<b>Break</b>
10:30-11:05	<b>Dielectric Sensors</b> Alex Mamishev. UW Electrical Engineering
11:05-11:35	<b>Manufacturing Intelligence for Intelligent Manufacturing: Developing a Learning Protection Layer to Optimize Process Safety</b> Jim and Dana Petrusich, Northwest Analytics
11:35-12:00	<b>Discussion</b>
12:00-1:15	<b>Lunch (UW Club)</b>
1:15-1:45	<b>Recent Advances in Comprehensive Two-Dimensional Gas Chromatography Instrumentation Development</b> Chris Freye, Dan Bahaghighat, and Rob Synovec, Chemistry, UW

1:45-2:15	<b>Digital Microfluidics Update: Single-bead-based chemical separations and sample processing workflows</b> Jay W. Grate, Sam S. Morrison, Matt J. O'Hara, Nic E. Uhnak, Michael Bartsch, Harrison S. Edwards, Ron Renzi, and Ken D. Patel, Northwest National Laboratory and Sandia National Laboratory
2:15-2:45	<b>Novel 3D Chemical Imaging System for Characterization of Tablets, Complex Powders and Liquids</b> Mark Kemper, H2Optx
2:45-3:00	<b>Break</b>
3:00-3:30	<b>Characterizing composition and predicting properties of bio-oils with 2-D heteronuclear NMR spectroscopy</b> John Cort, Pacific Northwest National Laboratory
3:30-4:00	<b>tba</b>
4:00-4:30	<b>Discussion</b>

## Thursday, July 20, 2017 - Lake Kachess Clubhouse

10:15-10:45	<b>New Technology Talk –New Mass Spec Ideas</b> Yatin Mange, Syft Technologies
10:45-11:15	<b>Expanding the Scope of Chromatography through Chemometrics</b> Dr. Dave Pinkerton and Rob Synovec, UW Chemistry
11:15-11:45	<b>The Impact of Chromatographic Alignment</b> Brian Rohrback, InfoMetrix
11:45-12:30	<b>Lunch</b>
12:30-1:00	<b>Continuous Fermentation for Protein Production: Sensor Designs and Needs</b> Clem Furlong, Tom Bukowski, and Scott Soelberg. Medical Genetics and Genome Sciences, UW Medicine
1:00-1:30	<b>Nuclear magnetic resonance for process analysis</b> Michelle Martin, Tricia Wong, Matt Augustine, Chemistry, U California Davis
1:30-2:00	<b>Microfluidics Coupled to Mass Spectrometry for Ultra-Small Volume Sample Analysis</b> Ryan Kelly, PNNL

2:00-2:30	<b>New Characterization Tools for Biomolecules: Recent Developments in Ion Mobility Mass Spectrometry</b> Rae Eaton and Matt Bush, Chemistry, UW
2:30-3:00	<b>The Medicines for All Initiative</b> Katherine Belecki, Virginia Commonwealth University
3:00-3:30	<b>Selected Topics Discussed at the 2017 CPAC Rome Workshop that are Related to the Summer Institute Theme</b> Ray Chrisman, MK Optimization and Control
3:00-3:45	<b>Final Discussion, Summary, and Development of Action Plans</b>
4:00	<b>Reception</b>
5:00	<b>BBQ Dinner</b>