

CPAC Summer Institute 2019

Process Characterization Leading to Process Optimization

July 23-25 2019, University of Washington, Seattle, WA

Tuesday, July 23, 2019 – University of Washington Club

8:30	Meeting Registration Desk Opens – University of Washington Club,
9:00-9:10	Introduction to the Summer Institute Theme Mel Koch, CPAC, APL, UW
9:10- 9:45	The Circular Economy: What is it and Will it Happen? Ray Chrisman, MK Optimization and Control
9:45-10:20	What's Next? The Changing Role of Chemometrics and Instrumentation for Process Analytics Brian Rohrback, Infometrix, Inc.
10:20-10:35	Break
10:35-11:05	The Medicines for All Initiative Roger Stringham, Virginia Commonwealth University
11:05-11:35	Statistical Process Control and Multivariate Analysis Michael F. Roberto, Northwest Analytics
11:35-11:55	Wireless Sensor Platforms Chris Rudell, UW Electrical Engineering
11:55-12:10	Introduction of Meeting Participants and Discussion
12:10-1:15	Lunch
1:15-1:30	Update on CPAC Activities Mel Koch, CPAC, UW
1:30-2:00	Battery Free Sensing and Communication Zerina Kapetanovic, Josh Smith, UW Electrical Engineering and Computer Sciences

2:00-2:35	Advances in the Use of PAT for Developments in Process Control Brian Marquardt, UW, APL, CPAC, and MarqMetrix
2:35-3:00	Break
3:00-3:40	Process Analytical Technologies for Bioreactor Monitoring and Control James Collett, Pacific Northwest National Laboratory (PNNL)
3:40-4:10	A Machine Learning Approach to Calibrate Generic Raman Models for Real-time Monitoring of Cell Culture Processes Aditya Tulsyan, Amgen
4:10-4:40	In-line Determination of Phosphoramidite ID for Oligonucleotide Sequencing and Fault Detection Dan Hill, Biogen
4:40-5:00	Discussion
5:15	Dinner at Ivar's Salmon House

Wednesday, July 24, 2019 – UW Club

9:00-9:10	Daily Overview Ray Chrisman, MK Optimization and Control
9:10-9:40	Expansion of PAT Tools with the Emphasis on the Integration of the Associated Technologies into an Integrated Informatics Communication, Analysis, and Control Solution. Ernie Hillier, Waters
9:40-10:10	Advances in Analytical Sensing Richard Becker, Blaze Metrics
10:10-10:30	Break
10:30-11:00	Real Time PAT Based Knowledge Management and Control in Continuous Processes Martin Gadsby, Optimal Industrial Automation Ltd., UK
11:00-11:30	New Developments in Benchtop NMR for Reaction Monitoring, Material Screening and Mixture Analysis Hector Robert, Magritek Inc
11:30-12:00	Continuous Biocatalytic Manufacturing Approaches for the Synthesis of Drugs Amanda Evans, Los Alamos National Laboratory (LANL)
12:00-1:00	Lunch

1:00-1:30	New Characterization Tools for Biomolecules Rae Eaton and Matt Bush, UW Chemistry
1:30-2:00	CMaT Data Analytics: Enabling Robust, Scaleable, Low-Cost Manufacturing of High Quality Therapeutic Cells Theresa Kotanchek, Evolved Analytics LLC
2:00-2:30	Optimization of Separation Conditions for Multi-Dimensional Gas Chromatography Derrick V. Gough, Sarah E. Prebihalo, Robert E. Synovec UW Chemistry
2:30-2:45	Break
2:45:-3:15	Real-time, On-Line Monitoring for Quantification of U, Pu and Other Radionuclides in Complex Processing Streams Neal Gallagher, Eigenvector Research Inc., Amanda M. Lines ¹ , Susan R. Adami ¹ , Sergey I. Sinkov ¹ , Amanda J. Casella ¹ ; Gabriel B. Hall ¹ , Jarrod R. Allred ¹ , Gregg J. Lumetta ¹ , Samuel A. Bryan ¹ , Neal B. Gallagher ^{2,*} , Robert T. Roginski ² ¹ Energy and Environment Directorate, Pacific Northwest National Laboratory, Richland, WA 99352 ² Eigenvector Research, Inc., 300 Bella Strada Lane, Manson, WA 98831
3:15-3:45	Improvements in Biopharma PAT with Sequential Injection Dan Hasle, FIA Labs
3:45-4:15	Ammonia Sensing with Single-Walled Carbon Nanotubes Alex Mamishev. SEAL Lab, UW Electrical Engineering
4:15-4:45	TBA
4:45	Discussion (arrange car-pools for Thursday)

Thursday, July 25, 2019 - Lake Kachess Clubhouse

10:15-10:45	Industry Case Study SIFT-MS, A Discontinuous Innovation to Replace Finished Product Release for Odor by Panelist Brian Goodlander, Procter and Gamble
10:45-11:25	Implementing Gas Chromatography with Chemometrics for Real Time Process Analysis Paige E. Sudol, Dong Song, Derrick V. Gough, Robert E. Synovec UW Chemistry

11:25-11:55	The Impact of Chromatographic Alignment Brian Rohrback, Infometrix Inc.
11:55-12:30	Lunch
12:30-1:00	An On-line Continuous Monitoring Strategy for API Flow Chemistry John-David McElderry, Biogen
1:00-1:30	Nuclear Magnetic Resonance for Process Analysis Sophia Fricke, Matt Augustine, Chemistry, U California Davis
1:30-2:00	Supporting Biotechnology Processes using Mass Spectroscopy through FDA Research David Powers, US FDA CDER
2:00-2:15	Break
2:15-2:45	Continuous Fermentation for Protein Production: Sensor Designs and Needs Clem Furlong, Tom Bukowski, and Scott Soelberg. Medical Genetics and Genome Sciences, UW Medicine
2:45--3:15	Can Flow Synthesis Enable Chemical and Pharmaceutical Provision in Africa? Paul Watts, Nelson Mandela University, South Africa – presented by Ray Chrisman, MK Optimization and Control
3:15-3:45	Selected Topics Discussed at the 2019 CPAC Rome Workshop that are Related to the Summer Institute Theme Ray Chrisman, MK Optimization and Control LLC
3:45-4:00	Final Discussion, Summary, and Development of Action Plans
4:00	Reception
5:00	BBQ Dinner