

FOPAM 2019

Foundations of Process Analytics and Machine Learning

August 6 – 9, 2019 ♦ Marriott StateView Hotel ♦ Raleigh, NC

FINAL PROGRAM

*The workshop on Monday and Tuesday will be located in Viewpoint A&B
The Process Data Analytics and Machine Learning workshop is for pre-paid attendees only.*

Monday, August 5

12:30 p.m. to	2:00 p.m.	Workshop Registration (Outside Viewpoint) Refreshments provided
1:30 p.m. to	5:00 p.m.	Process Data Analytics and Machine Learning Workshop <i>Richard D. Braatz (MIT), S. Joe Qin (USC) & Leo H. Chiang (Dow Chemical)</i>
1:30 p.m. to	1:45 p.m.	Workshop Introduction <i>Richard Braatz (Massachusetts Institute of Technology)</i>
1:45 p.m. to	3:00 p.m.	Workshop – Latent Variable Methods and Application Case Studies <i>S. Joe Qin (USC)</i>
3:00 p.m. to	3:15 p.m.	Refreshment Break
3:15 p.m. to	5:00 p.m.	Workshop – Latent Variable Methods and Application Case Studies (cont'd)
5:00 p.m. to	7:00 p.m.	Dinner on own
7:00 p.m. to	8:30 p.m.	Hospitality (Gravity)

Tuesday, August 6

7:30 a.m. to	9:00 a.m.	Workshop Registration (Outside Viewpoint) Coffee & Tea will be provided before the workshop
8:30 a.m. to	5:00 p.m.	Process Data Analytics and Machine Learning Workshop <i>Richard D. Braatz (MIT), S. Joe Qin (USC) & Leo H. Chiang (Dow Chemical)</i>
8:30 a.m. to	10:00 a.m.	Workshop – Latent Variable Methods and Application Case Studies (Cont'd) <i>Joe Qin (USC)</i>
10:00 a.m. to	10:15 a.m.	Refreshment Break
10:15 a.m. to	12:00 p.m.	Workshop – Latent Variable Methods and Application Case Studies (Cont'd)
12:00 p.m. to	1:30 p.m.	Lunch on own
1:30 p.m. to	3:00 p.m.	Workshop – Industrial Experience and Tips, Interactive Discussions <i>Leo Chiang (Dow Chemical)</i>
3:00 p.m. to	3:15 p.m.	Refreshment Break
3:15 p.m. to	5:00 p.m.	Workshop – Industrial Experience and Tips, Interactive Discussions (Cont'd)
	5:00 p.m.	Workshop Concludes

3:00 p.m. to	8:30 p.m.	FOPAM 2019 Conference Registration (Outside Fusion Ballroom)
6:00 p.m. to	7:00 p.m.	Welcome Reception (Outdoor Fireplace)
7:00 p.m. to	7:15 p.m.	Welcome Address (Synergy Ballroom) Conference Chairs: <i>Richard D. Braatz (MIT)</i> <i>Thomas A. Badgwell (ExxonMobil)</i> <i>Phillip R. Westmoreland (NCSU)</i>
7:15 p.m. to	8:30 p.m.	Keynote Address <i>Session Chair: Phillip R. Westmoreland (NCSU)</i> AI Recipe to Navigate the Art of the Possible <i>Keith Collins (SAS)</i>
8:30 p.m. to	10:00 p.m.	Hospitality (Fusion D)

*All general sessions Wednesday – Friday will be located in the Fusion Ballroom
The Poster Sessions and Refreshment Breaks will be in Synergy AB*

Wednesday, August 7

7:00 a.m. to	3:30 p.m.	Conference Registration Desk Open
8:00 a.m. to	9:00 a.m.	Continental Breakfast (Fusion Foyer & Ballroom)
9:00 a.m. to	12:00 p.m.	MATERIALS DESIGN <i>Chair: Johannes Hachmann (University at Buffalo – SUNY)</i>
9:00 a.m. to	9:45 a.m.	Materials for Tomorrow, Today <i>Alán Aspuru-Guzik (University of Toronto)</i>
9:45 a.m. to	10:30 a.m.	Use of Bayesian Optimization Approaches to Locate Polymorphs in Organic Electronic Materials <i>Paulette Clancy (Johns Hopkins University)</i>
10:30 a.m. to	11:00 a.m.	Refreshment Break
11:00 a.m. to	12:00 p.m.	Panel Discussion <i>Session Speakers + David M. Ford (University of Arkansas)</i>
12:00 p.m. to	1:30 p.m.	Buffet Lunch (Fusion Foyer & Ballroom)
1:30 p.m. to	3:30 p.m.	POSTER SESSION 1 (Synergy AB) <i>Chair: Alexander Dowling (University of Notre Dame)</i>
3:30 p.m. to	7:00 p.m.	Free Time
7:00 p.m. to	10:00 p.m.	PROCESS DESIGN <i>Chair: Selen Cremaschi (Auburn University)</i>
7:00 p.m. to	7:45 p.m.	Leveraging Historical Reaction Data to Inform Synthesis and Synthesis Design <i>Connor W. Coley (MIT)</i>
7:45 p.m. to	8:30 p.m.	Data Analytics in Sustainable Pharma Process Design and Operations <i>Concepción “Conchita” Jiménez-González (GlaxoSmithKline)</i>
8:30 p.m. to	9:00 p.m.	Refreshment Break
9:00 p.m. to	10:00 p.m.	Panel Discussion <i>Session Speakers + Mario R. Eden (Auburn University)</i>
10:00 p.m. to	11:00 p.m.	Hospitality (Synergy AB)

Thursday, August 8

7:00 a.m. to	5:00 p.m.	Conference Registration Desk Open
8:00 a.m. to	9:00 a.m.	Continental Breakfast (Fusion Foyer & Ballroom)
9:00 a.m. to	12:00 p.m.	PROCESS MONITORING <i>Chair: Thomas A. Badgwell (ExxonMobil Research & Engineering)</i>
9:00 a.m. to	9:45 a.m.	Current Practice and Future Directions in Industrial Process Monitoring <i>Leo H. Chiang (The Dow Chemical Company)</i>
9:45 a.m. to	10:30 a.m.	Statistical Learning of Dynamic Latent Variables for Monitoring and Predictive Analytics <i>S. Joe Qin (University of Southern California)</i>
10:30 a.m. to	11:00 a.m.	Refreshment Break
11:00 a.m. to	12:00 p.m.	Panel Discussion <i>Session Speakers + Venkat Venkatasubramanian (Columbia University)</i>
12:00 p.m. to	1:30 p.m.	Buffet Lunch (Fusion Foyer & Ballroom)
1:30 p.m. to	3:30 p.m.	POSTER SESSION 2 (Synergy AB) <i>Chair: Seongkyu Yoon (University of Massachusetts – Lowell)</i>
3:30 p.m. to	7:00 p.m.	Free Time
7:00 p.m. to	10:00 p.m.	CONTROL DESIGN <i>Chair: Victor Zavala (University of Wisconsin – Madison)</i>
7:00 p.m. to	7:45 p.m.	Reinforcement Learning – Overview and Potential for Process Systems Engineering Field <i>Jay H. Lee (KAIST)</i>
7:45 p.m. to	8:30 p.m.	Learning-based Control with Constraints <i>Melanie Zeilinger (ETH Zurich)</i>
8:30 p.m. to	9:00 p.m.	Refreshment Break
9:00 p.m. to	10:00 p.m.	Panel Discussion <i>Session Speakers + Rolf Findeisen (Otto von Guericke University)</i>
10:00 p.m. to	11:00 p.m.	Hospitality (Synergy AB)

Friday, August 9

7:00 a.m. to	4:00 p.m.	Conference Registration Desk Open
7:30 a.m. to	8:30 a.m.	Continental Breakfast (Fusion Foyer & Ballroom)
8:30 a.m. to	12:00 p.m.	BUSINESS, SCHEDULING AND SUPPLY CHAIN <i>Chair: Gintaras V. Reklaitis (Purdue University)</i>
8:30 a.m. to	9:30 a.m.	Analytics in Healthcare and Life Sciences <i>Marina Kovach (IBM)</i>
9:30 a.m. to	10:30 a.m.	A Unified Framework for Sequential Decision Analytics in Energy Systems <i>Warren B. Powell (Princeton University)</i>
10:30 a.m. to	11:00 a.m.	Refreshment Break
11:00 a.m. to	12:00 p.m.	Panel Discussion <i>Session Speakers + David Frede (SAS)</i>
12:00 p.m. to	1:30 p.m.	Buffet Lunch (Fusion Foyer & Ballroom)
1:30 p.m. to	10:00 p.m.	EDUCATING STUDENTS AND COLLEAGUES <i>Chair: Richard D. Braatz (Massachusetts Institute of Technology)</i>
1:30 p.m. to	2:15 p.m.	Behold the Data Scientist! <i>Michael Rappa (North Carolina State University)</i>
2:15 p.m. to	3:30 p.m.	Panel Discussion <i>Session Speaker + John Matranga (OSISoft) & Kody Powell (University of Utah)</i>
3:30 p.m. to	4:00 p.m.	Refreshment Break
4:00 p.m. to	6:30 p.m.	Free Time
6:30 p.m. to	7:00 p.m.	Reception (Synergy AB)
7:00 p.m. to	10:00 p.m.	Conference Banquet (Synergy AB) <i>After dinner remarks by rapporteurs Phillip Westmoreland and Martha Grover</i>