

**New Conference on Foundations of Process Analytics and Machine Learning (FOPAM)
August 5-9, 2019**

Conference Chairs

Richard D. Braatz and Thomas A. Badgwell

Organizing Committee Members

Jonathan Moore (Dow Chemical), S. Joe Qin (USC), Leo H. Chiang (Dow Chemical), Michael Baldea (UT Austin), Jay H. Lee (KAIST), R. Bhushan Gopaluni (UBC)

Conference Venue and Local Arrangements

North Carolina State University (NCSU), Raleigh, North Carolina, Phil Westmoreland

Dates

The symposium will be the week of August 5, 2019 as NCSU will have space available and the late summer avoids conflicting with the Big Data programming of the AIChE Spring Meeting.

Conference Objective and Content

The theme and main content of the conference is process data analytics, with some coverage of the application of data analytics and machine learning to business data analytics and computational chemistry/materials. The intent is to bring together the target audience – industry and academia – to discuss the current status and future directions on these topics. The draft content of the technical sessions is

- data analytics and high-throughput data processing for process health monitoring, estimation, and diagnosis
- machine learning for process and control design
- computational chemistry/materials analytics (including machine learning for molecular design)
- reinforcement learning and deep reinforcement learning for process operations and control
- synergies between process, materials, business, and supply chain data analytics
- data analytics education for chemical engineers

The conference will promote communication and interaction among all participants.

Conference Format

The conference would be three days with a small number of talks (two in the morning, two at night) followed by serious technical discussions to promote group interactions, with two of the afternoons open for poster sessions, open mike discussions, small-group discussions, and other unstructured activities. This conference format will be potentially revised by the Conference Chairs and organizing committee once they have thoroughly discussed speakers. The conference will be preceded by two days of optional workshops. A potential conference format is:

Monday, August 5, 2019

- Optional workshops

Tuesday, August 6, 2019

- Optional workshops
- Welcoming reception
- Conference introduction/overview
- Plenary lecture, likely from a company leader, on data analytics for the chemical and related industries

Wednesday, August 7, 2019

- Continental breakfast provided
- Morning session on data analytics for process health monitoring with two keynote lectures and discussion
- Lunch provided
- Afternoon free for optional excursions and poster session 1

- Supper not provided
- Evening session on machine learning for process and control design with two keynote lectures and discussion

Thursday, August 8, 2019

- Continental breakfast provided
- Morning session on computational chemistry/materials analytics with two keynote lectures and discussion
- Lunch provided
- Afternoon free for optional excursions and poster session 2
- Supper not provided
- Evening session on reinforcement learning for process operations and control with two keynote lectures and discussion

Friday, August 9, 2019

- Continental breakfast provided
- Keynote lecture
- Morning session on synergies between process, materials, business, and supply chain data analytics with two keynote lectures and discussion.
- Lunch provided
- Afternoon session on analytics education for chemical engineers with two keynote lectures and discussion
- Evening conference banquet/awards (best presentation/best poster/joke awards)