

— Call for Papers —  
A Symposium on  
**Advances in Data Analytics and Engineering Modeling for  
Intelligent & Resilient Manufacturing Systems**

Sponsored by the ASME Manufacturing Engineering Division's  
*Manufacturing Systems Technical Committee*  
2019 ASME International Manufacturing Science and Engineering Conference (MSEC)\*  
June 10-14, 2019  
Erie, Pennsylvania  
Hosted by Pennsylvania State University, The Behrend College

### Technical Focus

Engineering modeling and analytics deal with quantitative modeling and analytical characterization of engineering systems using physical or mathematical representation of a phenomenon or process of a manufacturing system. In modern manufacturing, the emerging sensing, communication, and computation technologies have resulted in a data-rich environment and provided opportunities of augmenting manufacturing intelligence through cross-cutting science and technologies such as engineering, computer science and mathematics. By integrating big data analytics that use data from sensors, controllers, metrology systems, and factory databases with engineering models, we are able to make effective use of data for online/offline diagnostic/prognostic modeling, process optimization, performance improvement, quality control, and design, thereby enhancing system self-awareness, productivity, quality, resilience, and the overall manufacturing performance. This symposium focuses on quantitative approaches for manufacturing system performance improvement through process modeling, system performance analysis, simulation, data analytics, signal/image processing and optimization. The topics of interests include but are not limited to:

- Analysis/modeling of manufacturing data to facilitate Internet of Things
- Big data analytics for intelligent decision-making in manufacturing systems
- Co-design and development of product, system, and/or supply chains for product variety
- Methodology for equipment/process monitoring, diagnostics, and prognostics
- Data mining and machine learning for smart manufacturing
- Sensing, measurement, and visualization of manufacturing data
- Degradation analysis and remaining useful life estimation
- Signal/image processing for inline/offline data
- Design and control of resilient manufacturing systems
- Sensor-based monitoring, control, and optimization for complex manufacturing systems
- Data/sensor fusion for manufacturing applications
- Energy-efficient manufacturing systems design and control

### Paper Submission

Authors are encouraged to submit an abstract and full manuscript for review by **November 02, 2018** via the conference website. Final revised manuscripts must be submitted by **March 15, 2019**. The copyright transfer form must be filled out by March 8, 2018, and the presenting author must pre-register by **April 05, 2019**; or the paper will be withdrawn from the conference. Authors may also consult [www.asme.org/divisions/med/call/](http://www.asme.org/divisions/med/call/) for updates. **No papers are to be submitted to the organizers; submissions will only be accepted via the conference website at [www.asmeconferences.org/msec2019/](http://www.asmeconferences.org/msec2019/).**

### Additional Symposium Activities

To highlight advancements in this technical area, symposium organizers will:

- work to organize a Special Panel on “Emerging Topics in Data Analytics for Manufacturing”
- organize a state-of-the-art paper that will be the lead article in the special issue in ASME Transactions
- work to attract a high profile international keynote speaker including honorarium

### Organizers:

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\* The conference is collocated with NAMRI/SME's 47th North American Manufacturing Research Conference (NAMRC47), which will have a separate call-for-papers. Please note that submissions of the same paper to more than one conferences are not permitted.