— Call for Papers —

A Symposium on

Advances in Data Management for the Digital Thread in Manufacturing

Sponsored by the ASME Manufacturing Engineering Division's

Life Cycle Engineering Technical Committee

2017 ASME International Manufacturing Science and Engineering Conference (MSEC)*

June 4-8, 2017

University of Southern California

Technical Focus

The digital thread concept links disparate systems within the manufacturing facility, throughout the supply chain, and across the product lifecycle. It provides the ability to collect, transmit, and share data and information between these systems quickly, reliably, and safely. By connecting and integrating people, machines, and processes, the digital thread enables applications that leverage data to reduce costs, improve productivity, ensure first-pass success, and augment existing workforce capabilities. Implementing the digital thread has been challenged by the difficulty of collecting, aggregating, and contextualizing appropriate data from systems across the product lifecycle. Commercial solutions exist, but they are often costly and do not address the heterogeneous system-of-systems integration needed to link engineering and manufacturing functions throughout the enterprise for all organizations, especially small-to-medium enterprises. The continued development of the digital thread requires new solutions to identify high-value data sources, collect this data strategically, manage the data effectively, and generate and cultivate knowledge through appropriate data analysis and visualization. Specific topics of interest include, but are not limited to:

- Sensor integration and automation and computing platforms for manufacturing equipment
- Retrofitting machine-tool controllers and shop-floor automation systems with data management tools
- Networking protocols and communication standards for engineering and manufacturing systems
- Data systems architectures for shop-floor and product lifecycle management
- Preprocessing, verification, validation, robustness, time synchronization, fusion, and contextualization of engineering and manufacturing data
- Applications of linked data and semantic web concepts to facilitate data curation, discovery, and observation
- Novel analytics platforms and information extraction
- Scalable and distributed high-performance computing across the manufacturing enterprise
- Data visualization platforms for the shop floor and manufacturing enterprise
- Data certification, traceability, authenticity, and cybersecurity
- Workforce training and education
- Industry implementations and case studies

Paper Submission

Authors are encouraged to submit an abstract and full manuscript for review by **November 03, 2016** via the conference website. Final revised manuscripts must be submitted by **March 08, 2017**. The copyright transfer form must be filled out and the presenting author must pre-register by April 06, 2017 or the paper will be withdrawn from the conference. Authors may also consult 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/msec2017/.

Additional Symposium Activities

To highlight advancements in this technical area, symposium organizers will:
- attract high-profile industry keynote speakers
- focus on industry-based implementation studies in addition to fundamental scientific research
- discuss the organization of a special issue between the ASME Journal of Manufacturing Science and Engineering and the ASME Journal of Computing and Information Science in Engineering to bring together relevant communities of experts

Organizers

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* The conference is collocated with NAMRI/SME's 45th North American Manufacturing Research Conference (NAMRC45) and JSME's International Conference on Materials and Processing (ICMP 2017), both of which have a separate call-for-papers. Please note that submissions of the same paper to more than one conference are not permitted.