

— **Call for Papers** —
A Symposium on
High Performance Computing and Data Analytics in Manufacturing

Sponsored by the ASME Manufacturing Engineering Division's
Manufacturing Systems Technical Committee
2016 ASME International Manufacturing Science and Engineering Conference (MSEC)*
June 27 – July 1, 2016
Virginia Tech, Blacksburg, Virginia, USA

Technical Focus

High performance computing and data analytics have been playing an important role in a wide range of computational and data intensive fields such as bioscience, molecular-scale physics, weather forecasting, oil and gas exploration, financial modeling, and entertainment. Although manufacturers in areas such as aerospace, automotive, and heavy industry have relied on high performance computing over the past decade, manufacturers today are still faced with challenges such as performance benchmarking and optimization for cloud computing, cyber security and risk management, and economics of high performance computing and data analytics. Nowadays, the emergence of high performance cloud computing, Internet of Things, and cyber-physical systems represent a radical change in the way manufacturers collect, store, and analyze data to predict the performance of their products. For instance, high performance cloud computing has enabled small and medium-sized enterprises (SMEs) to have on-demand, instant, and user-friendly access to CAD/CAE/CAM software packages and state-of-the-art computing resources without upfront cost. This symposium will focus on the research advances in the areas of high performance computing and data analytics for manufacturing. Specific topics of interest include, but are not limited to:

- Machine/process monitoring, diagnostics and self-correction.
- Sensor design, integration and fusion.
- Supervisory systems and factory automation.
- MTConnect-based applications for manufacturing.
- Advanced manufacturing through the digital thread.
- High performance computing in subtractive and additive manufacturing processes.
- Cloud computing in digital manufacturing.
- Case study for cloud-based manufacturing.
- Data analytics for manufacturing and supply chain.
- Case study for Cyber-physical systems in manufacturing.
- Cyber-physical systems in manufacturing.
- Cybersecurity in manufacturing systems.
- The use of Internet-of-Things in manufacturing.
- Economic impacts of high performance computing and data analytics on manufacturing.

Paper Submission

Authors are encouraged to submit an abstract and full manuscript for review by **December 01, 2015** via the conference website. Final revised manuscripts must be submitted by **March 4, 2016**. The copyright transfer form must be filled out by March 28, 2016 and the presenting author must pre-register by April 25, 2016 or the paper will be withdrawn from the conference. Authors may also consult <https://www.asme.org/events/msec/present-publish/call-for-papers.aspx> for updates. **No papers are to be submitted to the organizers; submissions will only be accepted via the conference website at: www.asmeconferences.org/msec2016/.**

Additional Symposium Activities

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

- work to attract a high profile international keynote speaker including honorarium
- organize a special issue in the ASME Journal of Manufacturing Science and Engineering or SME Journal of Manufacturing Systems
- organize a panel on high performance computing and data analytics for digital manufacturing

Organizers

Dr. Janis Terpenney, Pennsylvania State University, University Park, PA, USA, jpt5311@psu.edu
Dr. Radu Pavel, TechSolve, Inc., Cincinnati, OH, USA, pavel@techsolve.org
Dr. Dazhong Wu, Pennsylvania State University, University Park, PA, USA, dxw279@psu.edu

Dr. Dean Bartles, Digital Manufacturing and Design Innovation Institute, Chicago, IL, USA, dean.bartles@uilabs.org

Dr. Thomas Kurfess, Georgia Tech, Atlanta, GA, USA, kurfess@gatech.edu

Dr. Samuel H. Huang, University of Cincinnati, Cincinnati, OH, USA, sam.huang@uc.edu

* The conference is collocated with NAMRI/SME's 44th North American Manufacturing Research Conference (NAMRC44) that will have a separate call-for-papers.