NAMRC 48 has been cancelled due to the ongoing safety concerns associated with the COVID-19 pandemic. We reached this decision to protect the health and wellness of the global academicians, government and industry researchers, engineers, students and leaders in manufacturing who make up the inspiring collocated manufacturing conferences community.

NAMRC 49 will take place on June 21-25, 2021, at the University of Cincinnati.

We look forward to seeing you next June and profoundly thank you for your understanding and cooperation.
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Bryan G. Dods, FSME
General Manager of AM Services, US Oerlikon AM
Huntersville, North Carolina

Dods is general manager of AM Services at Oerlikon AM in Huntersville, North Carolina, near Charlotte, where he oversees the company’s new state-of-the-art production facility. Dods is responsible for Oerlikon AM’s U.S. component production operations and coordination with European facilities. Since joining Oerlikon in June 2019, he has been focusing on building stronger relationships with customers and reaching out to interested parties. Prior to Oerlikon, Dods worked in a variety of manufacturing consultancy roles at his own firms and others. Dods first began working with additive manufacturing in the early 2000s while employed at Boeing in St. Louis. He spent more than 10 years in the aerospace industry, working for McDonnell Douglas/Boeing, later working as an executive for GE Power in South Carolina for several years. Dods is named on 12 manufacturing patents and applications with eight in additive manufacturing. He holds a bachelor’s degree in metallurgy, mechanics and materials science from Michigan State University, a master’s degree in materials engineering from Washington University in St. Louis, an MBA from Washington University in St. Louis, and most recently, a bachelor’s degree in mathematics from Indiana University East. Dods was elected to the 2017 SME College of Fellows and is the recipient of the 2013 M. Eugene Merchant Manufacturing Medal of ASME/SME for influence and responsibility for improving the productivity and efficiency of manufacturing operations.

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Moylan is a mechanical engineer at the National Institute of Standards and Technology with technical and policy experience in advanced manufacturing. He gained policy experience as a fellow in the office of U.S. Senator Gary Peters and as a detailee in the Advanced Manufacturing National Program Office. Moylan’s technical experience comes from years as a project leader for multiple additive manufacturing and smart machine tool projects in NIST’s Engineering Laboratory. His research has focused on developing test methods and reference data to reduce the high costs associated with qualifying machines and components for aerospace, medical and other applications. Moylan is a leader in the advanced manufacturing community, having served as chair, Executive Committee for ASME Manufacturing Engineering Division; co-chair, Technology Roadmap Advisory Group for America Makes – the National Additive Manufacturing Innovation Institute; vice-chair, Subcommittee on Test Methods in ASTM International Committee F42 on Additive Manufacturing Technologies; and other volunteer positions.

Paul is a professor of manufacturing engineering at Oregon State University where he teaches manufacturing process design and performs experimental and computational studies in materials joining, thin-film deposition and hybrid additive manufacturing. His collaborative publications on the scale-up of nanomaterial synthesis and deposition are on SME’s former Innovations That Could Change the Way You Manufacture watch list. Paul has authored more than 110 refereed publications, received 12 U.S. patents (six licensed) and helped 15 companies advance micro and nanotechnologies toward the marketplace, four formed from work with his graduate students. Several of his joint patents established the core for a spin-out, which, in 2010 received the largest first-round venture capital funding in the history of Oregon. In 2013, Paul was invited to serve as the assistant director of technology within President Obama’s Advanced Manufacturing National Program Office, to help devise a federal strategy to overcome industry impediments to manufacturing innovation, now known as Manufacturing USA. After his return to OSU, Paul helped establish the Rapid Advancement of Process Intensification Deployment (RAPID) Manufacturing Institute within Manufacturing USA where he is lead of the module manufacturing technology focus area. Paul is a fellow of SME and ASME.
Gao is the Cady Staley professor of engineering and department chair of Mechanical and Aerospace Engineering at Case Western Reserve University in Cleveland. His research is in the areas of multiphysics sensing, multiresolution signal processing, machine learning and wireless communication for improving the observability of dynamical systems such as manufacturing equipment and processes. Gao has authored or co-authored more than 170 peer-reviewed journal articles, two books, several book chapters and holds 12 patents. Currently, he serves as a senior editor for the “IEEE/ASME Transactions on Mechatronics.” Gao is a fellow of the American Society of Mechanical Engineers, SME, CIRP (International Academy for Production Engineering) and the Institute of Electrical and Electronics Engineers. He is a recipient of several professional honors, including the Eli Whitney Productivity Award from SME, the Blackall Machine Tool and Gage Award from ASME, the Technical Award and Best Application Award from the Instrumentation and Measurement Society of IEEE and several best paper awards. Gao has been named one of the 20 most influential professors in smart manufacturing.

Lombardo leads a diverse team of manufacturing technologists working across GE Aviation’s broad process and product portfolio. His team links materials to design to customers through a variety of special processes used in the manufacture of jet engines. Lombardo’s group manages the processes’ technical and quality requirements via a distributed team of hundreds of experts and practitioners across engineering and manufacturing. His team is a key part of how GE Aviation maintains high-quality standards while also leaning forward into novel special processes and process control strategies. Lombardo graduated from Rensselaer Polytechnic Institute with both a bachelor’s degree and a master’s degree in mechanical engineering with a specialization in mechatronics and controls. He has worked in a variety of manufacturing technology roles for GE including Global Research, GE Power and GE Aviation. Lombardo’s personal technical background is in machining, monitoring, surface treatment (peening) and surface finishing. He has represented himself and GE on industry task groups (Nadcap), standards boards (ASME B46.1), and various panels and paper review processes including NAMRI | SME and CIRP. Lombardo holds multiple patents in a broad array of manufacturing-related disciplines. He is also a volunteer and mentor in his local school district and supports STEM activities from elementary through graduate-level programs locally.
Schmitz received his bachelor’s degree in mechanical engineering from Temple University in 1993, his master’s degree in mechanical engineering from the University of Florida in 1996 and his doctorate in mechanical engineering from the University of Florida in 1999. Schmitz completed a postdoctoral appointment at the National Institute of Standards and Technology and was then employed as a mechanical engineer from 1999-2002. His professional recognitions include: 2019 SME Frederick W. Taylor Research Medal; 2019 UNC Board of Governors Award for Teaching; 2019 Best Presentation ASPE Annual Meeting; 2019 NAMRI | SME Outstanding Paper (NAMRC 47); 2018 51st Annual Bank of America Award for Teaching Excellence; 2017 NAMRI | SME David Gornfeld Manufacturing Vision Award; 2016 SME College of Fellows; 2013 UNC Charlotte College of Engineering; 2013 Undergraduate Award for Teaching Excellence; 2012 Temple University Alumni Fellow; 2011 Sports Emmy Award (NBC Learn) for the Science of NFL Football Video Series; 2010 NAMRI | SME Outstanding Paper (NAMRC 38); 2009 UF MAE Teacher of the Year; 2005 SME Outstanding Young Manufacturing Engineer Award; 2004 Journal of Tribology Best Paper Award; 2003 Office of Naval Research Young Investigator Award; 2003 National Science Foundation CAREER Award; 1999 Measurement Science and Technology Highly Commended Article; 1999 NIST National Research Council Postdoctoral Research Associateship; 1999 Temple University Gallery of Success Inductee; 1998 Department of Energy/National Academy of Engineering Integrated Manufacturing Predoctoral Fellowship; and 1994 National Science Foundation Graduate Traineeship. Schmitz also serves as an associate editor for ASME’s “Journal of Manufacturing Science and Engineering.”
The NAMRC 48 Outstanding Paper Award recognizes both the engineering value and industrial relevance of publications presented at NAMRC. The 2020 finalists were selected representing the top papers in two categories — manufacturing systems and processes.

### Manufacturing Systems

**NAMRC-164**

“Transferable Two-stream Convolutional Neural Network for Human Action Recognition”

Qianqian Xiong, Jianjing Zhang, Peng Wang, Dongdong Liu and Robert Gao, Case Western Reserve University, Cleveland

**NAMRC-125**

“A new model for predicting the thickness of intermetallic compounds in friction stir welding”

Farhang Momeni and Jun Ni, University of Michigan, Ann Arbor, Michigan

### Manufacturing Processes

**NAMRC-63**

“Cutting force model of power skiving of internal gear”

Hideaki Onozuka and Fuminao Tayama, Hitachi Automotive Systems Ltd., Kanagawa, Japan

Yu Huang and Masatomo Inui, Ibaraki University, Ibaraki, Japan

**NAMRC-125**

“A new model for predicting the thickness of intermetallic compounds in friction stir welding”

Farhang Momeni and Jun Ni, University of Michigan, Ann Arbor, Michigan

### NAMRC 48 Outstanding Reviewers

Fuda Ning, State University of New York at Binghamton, Binghamton, New York

Maxwell Praniwicz, Georgia Institute of Technology, Atlanta

Shanshan Zhang, University of Louisville, Louisville, Kentucky

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**NAMRI | SME**

**S.M. Wu Research Implementation Award**

“Error Compensation and Accuracy Improvements in 5-axis machine tools using the global offset method”

The GM COMP system and method were invented and developed with the sole purpose of performing global offset compensation in the multiaxis machine tools. Sheri Kurgin, PhD, and Jie Gu, PhD, are the leaders in the development and implementation of the CNC offset method. Kurgin and Gu developed a set of systematic methods for estimating the machine tool variation based on CMM errors and performing a global and local compensation directly in the controller and successfully applied the method to automotive machining with significant economic benefits. Three technical papers were presented at the 2015, 2016 and 2017 NAMRC events to describe the concept and highlight some of the major technical challenges. The COMP system is integrated in all the new machine tools in production for more than eight years.

The patented and commercialized innovative COMP system and method enables calculating and implementing global and local compensation for multiaxis computer-controlled manufacturing systems as opposed to traditional methods. Benefits are better part quality, quality consistency, (>3%) improved productivity and enhanced product/process flexibility.

**Award Winners**

- Sheri K. Kurgin, PhD, Senior Manufacturing Engineer, General Motors, Macomb, Michigan
- Jie Gu, PhD, Senior Project Engineer, General Motors, Pontiac, Michigan

**Nominated by**

- John S. Agapiou, PhD, FSME, Technical Fellow, General Motors, R&D Center, Warren, Michigan
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Journal of Manufacturing Systems Best Paper Award

The Journal of Manufacturing Systems Best Paper Award is awarded annually to a JMS paper published within the past seven years that has received the highest number of citations, as measured in Scopus within the past five years.

Award Criteria

Qualification Period: One Best Paper is awarded each year to a JMS paper published in the past seven years.

Citation-Based: The impact of a paper is measured based on the number of citations in Scopus in the past five years. The Journal of Manufacturing Systems Best Paper goes to the paper with the highest number of citations.

Exclusion Rule: No paper shall receive this award more than once.

Award Type: Certificate

Announcement: In June of each calendar year at NAMRC, in person or by email.

Award Winner:
Awarded to the paper attracting the most citations during the period 2015-19.

“Cloud manufacturing: Strategic vision and state-of-the-art”
Published in Oct. 2013

Dazhong Wu, Matthew J. Greer, David W. Rosen and Dirk Schaefer
Georgia Institute of Technology, Atlanta

ACKNOWLEDGMENTS AND APPRECIATION

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• 2019-20 NAMRI | SME Scientific Committee for its dedication in maintaining the high standards of published papers
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