

CCAM

SOLVING ADVANCED MANUFACTURING CHALLENGES



CCAM Automation Research Day

Wednesday, February 6, 2019

AGENDA

9:00 - 9:30 INTRODUCTION AND OPENING REMARKS

Will Powers, President & Chief Executive Officer, CCAM
Jaime Camelio, Ph.D., Chief Technology Officer, CCAM

9:30 - 10:00 ROLLS-ROYCE VISION OF THE SMART FACTORY - THE OPPORTUNITY AND THE CHALLENGE

Nigel Pearce, Director, Digital Manufacturing, Rolls-Royce plc.

10:00 - 10:30 LEVERAGING EDGE COMPUTING

Roger Hart, US R&D Manager, Siemens Digital Factory – Motion Control

10:30 - 10:45 NETWORKING BREAK

10:45 - 11:15 CONFIGURABLE MICRO FACTORIES – TRENDS AND OPPORTUNITIES

Robert Yancey, Ph.D., Director, Manufacturing Business Strategy, Autodesk

11:15 - 11:45 TRUSTWORTHY AI IN THE FACTORY OF THE FUTURE

Milos Manic, Ph.D., Professor, Computer Science Dept., Virginia Commonwealth University

11:45 - 1:15 LUNCH / TOURS / DEMOS

Tours start in high bay at 12:30

1:15 - 1:45 BIG DATA CHALLENGES IN DESIGN AND MANUFACTURING

Bruce Kramer, Ph.D., Senior Advisor, National Science Foundation

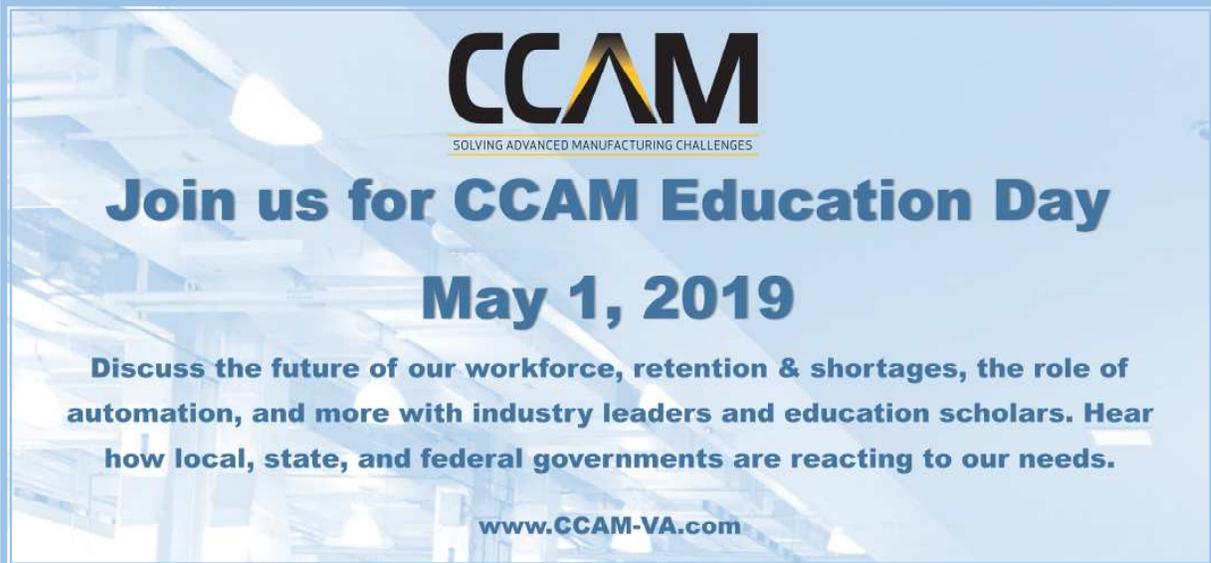
1:45 - 2:15 CCAM RESEARCH IN MEASUREMENT & EDGE COMPUTE FOR THE INTELLIGENT FACTORY

Matt Stremmler, Research Manager, Adaptive Automation, CCAM
Tim Bakker, Ph.D., Researcher, Adaptive Automation, CCAM

2:15 - 2:30 NETWORKING BREAK

2:30 - 4:00 CLOSED SESSION FOR MEMBER COMPANIES (INVITATION ONLY)

4:00 - 6:00 MEMBER RECEPTION



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Join us for CCAM Education Day

May 1, 2019

Discuss the future of our workforce, retention & shortages, the role of automation, and more with industry leaders and education scholars. Hear how local, state, and federal governments are reacting to our needs.

www.CCAM-VA.com

TIM BAKKER, Ph.D. is a Researcher on CCAM's Adaptive Automation team. Tim's proficiencies include the development and testing of embedded systems, safety-critical systems, software, and advanced algorithms. As an Assistant Professor at Virginia Commonwealth University (VCU), he created a highly deterministic and formally verified computing engine for digital devices built to withstand cyber-attacks and used in Nuclear power-plants. He is author/co-author of 14 papers in scientific journals and conference proceedings. Tim earned his Ph.D. in Computer Engineering from VCU.

ROGER HART is an R&D Manager at Siemens Industry Inc. Roger has 30 years' experience in developing CNC controls and automation for industry. His CNC development work has focused on real-time control algorithms, accuracy improvements, process diagnostics, and data connectivity. Roger's current responsibilities include CNC advances in robotics and additive manufacturing as well as bringing IoT / Edge computing to industrial realization.

BRUCE KRAMER, Ph.D. is Senior Advisor in the Division of Civil, Mechanical and Manufacturing Innovation for Nation Science Foundation. In this role, he coordinates NSF involvement in the Manufacturing USA Institutes, represents NSF on the NSTC Subcommittee on Advanced Manufacturing, and was the NSF lead in the drafting of the Strategy for American Leadership in Advanced Manufacturing, published in October 2018. Bruce co-founded and was Director of Engineering of Zoom Telephonics of Boston, a NASDAQ company. He is the holder of three U.S. patents. Among his many accomplishments, he was awarded a Distinguished Service Award, the highest honorary award granted by the National Science Foundation. He is a fellow of the Society of Manufacturing Engineers. Bruce is a graduate of the Massachusetts Institute of Technology (B.S., M.S., Ph.D.).

MILOS MANIC, Ph.D. is a Professor with the Computer Science Department and Director of VCU Cybersecurity Center at Virginia Commonwealth University. He has completed over 30 research efforts in the area of data mining and machine learning applied to cyber security, critical infrastructure protection, energy security, and resilient intelligent control. Milos has given over 30 invited talks on machine learning in critical infrastructures, nuclear security and energy resiliency, and intelligent human-machine interfaces around the world. He authored over 180 refereed articles in international journals, books, and conferences, holds several U.S. patents and has recently won the 2018 R&D 100 Award for Autonomic Intelligent Cyber Sensor (AICS).

NIGEL PEARCE is Director, Digital Manufacturing for Rolls-Royce plc. In this role, he brings Industry 4.0 to life in Rolls-Royce Global Manufacturing. He has worked for Rolls-Royce plc for nearly 30 years. Nigel is passionate about manufacturing and the transformation in perception and reality of manufacturing from a dirty, unpleasant process to a high technology, high value add process that underpins all aspects of modern life. Over his career, Nigel has developed new manufacturing processes and led globally distributed ME teams on safety critical components. His proudest achievement is the set-up and maturation of both the Crosspointe and Washington (UK) disc factories which are Rolls-Royce exemplar facilities. Nigel holds a B.S. in Mechanical Engineering and a M.S. in Engineering Business Management.

MATT STREMLER is Research Manager for CCAM's Adaptive Automation group. He has led the establishment and growth of the automation research capability at CCAM, and is responsible for research strategy, portfolio management, team growth, and project management for all automation research. Matt spent 16 years in the shipbuilding industry as an engineer and team lead. He received his M.S. in Materials Science and Engineering from the University of Virginia and B.S. in Mechanical Engineering from Rose-Hulman Institute of Technology.

ROBERT YANCEY, Ph.D. has over 30 years' experience in the fields of additive manufacturing, design optimization, nondestructive evaluation, and structural analysis in the aerospace, automotive, marine, energy, and consumer product industries. He currently oversees the Manufacturing and Production strategy for Autodesk which includes additive, subtractive, composites, and mold-filling technologies. Robert holds degrees in Aeronautics and Astronautics, Engineering Mechanics, and Materials Engineering from MIT, Virginia Tech, and the University of Dayton, respectively.





ABOUT CCAM RESEARCH DAYS

CCAM Advanced Manufacturing Research Days provide a forum for thought leaders from industry, government and academia to explore common challenges and emerging solutions in a collaborative environment. CCAM's focus areas include: Adaptive Automation, Surface Engineering, Additive Manufacturing, and Machining Science & Technology. Throughout the year, CCAM members and the public are invited to convene on select focus areas and research topics. A combination of subject matter expert presentations, interactive panels and ample networking time provides an opportunity for participants to gain insight from a wide variety of stakeholders. Research days also include tours, demos and a networking reception.

ABOUT CCAM

CCAM's mission is to solve advanced manufacturing challenges. Their talent-centric collaborative accelerates global innovation and productivity for their members. Members guide the research, leveraging talent and resources within CCAM and Virginia's top universities, that enables them to pool R&D efforts to increase efficiencies. Results can then be applied directly to the factory floor, turning ideas into profit faster and more affordably than ever before. CCAM is located in a state-of-the-art research facility in South Prince George County, Virginia. For more information, visit: www.CCAM-VA.com

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