



October 2-4, 2018

TUESDAY, October 2, 2018

- 2:30 pm - 4:00 pm **Raytheon Tour** (pre-registration required, bring photo id)
Shuttles available beginning at 1:30 p.m. Meet in hotel lobby.
First return shuttle will depart Raytheon at 4:30 p.m.
- 7:00 pm – 9:00 pm **Welcome Reception**
Location: Café area, between restaurant and Ballroom
Holiday Inn, Tewksbury/Andover

WEDNESDAY, October 3, 2018

- 7:30 am – 8:15 am **Buffet Breakfast**
Location: Café area outside Ballroom
- 8:15 am – 8:35 am **Welcoming Remarks**
Location: Ballroom
- UMASS-Amherst Welcome**
Sundar Krishnamurty
- Introductions and New Members Welcome**
Janis Terpenney, Center Director
Sundar Krishnamurty, UMass Site Director
- 8:35 am – 8:50 am **Survey Instructions**
Donald Price, Center Evaluator
- 8:50 am – 9:10 am **Center Overview and Updates**
Janis Terpenney, Center Director, and Site Directors
- 9:10 am – 9:40 am **New Project Presentations**
- Yupeng Wei, Penn State**
Degradation Modeling and Prognostics via Data Fusion
- Kyoung-Yun Kim, Wayne State**
Systematic Optimization Model Construction for Connected Joinability Certification
- Irem Tumer, Oregon State**
Resilient Design Methodology to Support on Demand Mobility





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Rob Stone, Oregon State

Modeling Composites Fatigue to Improve FEA Simulation

Chao Hu, Iowa State

Efficient Reliability-based Design Optimization of Engineered Systems with Multiple Inter-Dependent Components

9:40 am – 10:10 am

Completed Project Presentations:

Douglas Eddy, UMASS-Amherst

A Framework to Manage Data Associated with Additive Manufacturing (AM) Geometry and Practice; Material Property Matrix and Information Management for Additive Manufacturing

Ana Muriel, UMASS-Amherst

Supply Chain for Mass Customization: Enterprise Resource Planning Optimization for Mass Customized Manufacturing.

Kyoung-Yun Kim, Wayne State

Smart Visualization of RSW Welded Assembly

Dan Finke, Penn State

Product Families and Modularity: New Options through Additive Manufacturing

10:10 am-10:30 pm

Break

10:30 am – 11:30 am

Project Pitches, Poster Session & Demos –Session 1

Thrust Areas: Integration, Infrastructure, Intelligence, Design Optimization
Location: Café area outside Ballroom

11:30 – 11:50 am

LIFE Form Submission / Break

Location: Ballroom

11:50 am – 12:50 pm

Guest Speaker and Lunch

Bill Dawson, Director of Mechanical Engineering
Raytheon

12:50 pm – 1:00 pm

Break

1:00 p.m. –2:00 pm

Project Pitches, Poster Session & Demos – Session 2

Thrust Areas: Visualization and Virtual Prototyping, New Design Paradigms and Processes
Location: Café area outside Ballroom

2:00 pm – 2:20 pm

LIFE Form Submission /Break

Location: Ballroom





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2:20 pm- 3:35 pm

Member Highlights Presentations/Panel Discussion

Kevin Carpentier, NSAM Technical Director, ONR Mantec
Dr. Mike White, CEO/CTO, FTL Labs Corp
Victor Gerdes, V.P. Product Management, PTC
Scott Miller, Owner/Founder, The Innovation Machine

3:35 pm – 3:45 pm

Day Wrap-Up

Moderators: Sundar Krishnamurty, Doug Eddy

3:45 pm

Session Adjourns

6:30 pm – 9:00 pm

Dinner: Cobblestones Restaurant

Shuttles available at 6:00 p.m. and 6:30 p.m. Meet in lobby
First Return Shuttle available at 9:00 p.m., 9:30 p.m.

THURSDAY, October 4, 2017

7:30 am – 8:30 am

Breakfast for Industrial Members

Meeting Location: Georgian Boardroom
Breakfast in Café area

Breakfast for Site Directors

Meeting Location: Ballroom
Breakfast in Café area

8:30 a.m.– 9:00 am

LIFE Results

Moderator: Don Price (Center Evaluator)
Location: Ballroom

9:00 am – 11:00 am

Industry Advisory Board Meeting

[Restricted to Industrial Members and Directors]
Moderators: Janis Terpenney and Paul Mittan
Location: Ballroom

11:00 am–12:00 pm

Grab and Go Lunches Available





Biography

William C. Dawson is a member of the IDS Leadership team, currently the Sr. Director of the Mechanical Engineering Directorate (MED), reporting to the VP Engineering. In this role, he is responsible for mechanical design and analysis, materials and process selection, manufacturing engineering, production support, and configuration and data management for all programs in the business.

Previously, Dawson was the Sr. Director of Integrated Air and Missile Defense (IAMD) engineering, with a dual reporting relationship to the VP Engineering and VP IAMD. He was responsible for resolving system performance issues, for ensuring proper engineering execution and resources, and for review and approval of Gates, EACs and MORs.

Starting in March 2009, Dawson was the Deputy Director of MED. In this role, he was responsible for supporting the Director in all aspects of mechanical engineering execution. Previously, Dawson held positions of increasing responsibility within MED, including senior manager positions for the Technical Staff, and three design departments with staffing of up to 210 engineers. He led proposal and design teams, resolved program issues, developed his team for expanded responsibilities, and guided continuous process improvement in mechanical engineering.

Dawson was the IPT Lead for the Patriot UAE Mobile Antenna Mast Group (AMG). This project was performed using integration and test subcontractors in Germany and Turkey; Dawson gained in-depth knowledge of international subcontract execution.

Dawson has broad based technical knowledge in antenna and sensor systems, mechanical structures, structural and thermal analysis, shelter design, and cabinet design for both ground and shipboard applications. He has led software, system test and sell-off efforts. He was elected a Raytheon Engineering Fellow in 2005. He has been the mechanical lead engineer on several programs for both

radar and air traffic control applications. As a section manager and department manager, he has actively participated in a large number of IDS programs, notably Zumwalt Class Destroyer, Patriot and JLENS.

Dawson has significant proposal and program execution experience. He was the mechanical lead for the many major new development proposals, including the successful Advanced Spectroscopic Portal (ASP), Cobra Judy Replacement (CJR) and Affordable Ground Based Radar (AGBR) captures. He is experienced in both Cost Volume and Technical Volume preparation and has served on Pink and Red Teams.

Prior to joining Raytheon in 1990, Dawson was employed as a senior mechanical engineer at Hughes Aircraft Company. He was the lead mechanical engineer on several communications satellite programs for both commercial and defense applications.

Dawson earned a bachelor's degree in mechanical engineering from the Massachusetts Institute of Technology (MIT) in 1982 and earned a master's degree in mechanical engineering from the University of Southern California in 1985. He completed the Raytheon Accelerating Leadership Impact program and the IDS Strategic Development Program. He is EVMS certified and is a qualified Six Sigma Specialist.



Kevin Carpentier

Mr. Carpentier is a Director in ATI's Naval Technologies Division. He serves as the Technical Director for the Naval Shipbuilding and Advanced Manufacturing Center of Excellence (NSAM). The NSAM Center is an \$8M per year manufacturing technology program sponsored by the Office of Naval Research. He works with a distributed staff and interacts with Navy Program Managers to ensure manufacturing technology development projects have the greatest potential return on investment to the Navy. Technologies developed under the program have routinely transitioned to industry and are credited with millions of



dollars per year in cost reductions for several major Navy acquisition programs. Mr. Carpentier participated in various efforts to identify innovative manufacturing technologies and transfer them to the shipbuilding industry. Examples include the Global Shipbuilding Industrial Base Benchmarking study (funded by the Office of the Deputy Under-Secretary of Defense for Industrial Policy) and the Mid-Tier Shipyard Capability Assessment (funded by the Office of Naval Research), and the Advanced Affordability Technology Assessment team. These teams visited U.S. and international shipyards and innovative companies in other manufacturing industries to observe worldwide best practices and assess their application to shipbuilding in the U.S. From July 2017 through January 2018, Mr. Carpentier served as the Executive Director of the National Shipbuilding Research Program (NSRP), a collaboration of U.S. shipyards partnered with the U.S. Navy that is focused on national shipbuilding and ship repair research and development. The mission of the program is to reduce the total ownership cost of ships for the U.S. Navy, other national security customers and the commercial sector, and develop and leverage best commercial and naval practices to improve the efficiency of the U.S. shipbuilding and ship repair Industry.

As the former Manager for ATI's Maritime and Manufacturing Technologies Division, Mr. Carpentier had Profit & Loss responsibilities for ~\$30M/year from multiple programs, included the NSAM Center, the NSRP and a number of other advanced manufacturing programs. These programs supported initiatives of the Navy, the Army, the Air Force and the Defense Logistics Agency and focused on research and development projects to improve manufacturing processes in shipbuilding, aircraft manufacturing, various Department of Defense combat systems and initiatives across DoD's Advanced Manufacturing Enterprise. Early in his ATI career, he served as the program manager for a Navy-funded Naval Education program, where he coordinated the research and development efforts of several naval architecture research universities that developed technologies to support designs for the next generation of naval vessels and developed improved engineering curricula at the college level and others to foster excitement in math and science in middle and high schools.

Prior to joining ATI, Mr. Carpentier worked as a senior consultant providing project management and dispute resolution services to government and commercial clients in the construction industry. As an officer in the U. S. Coast Guard for over 24 years, Mr. Carpentier served in a variety of leadership and management positions in engineering and operations both afloat and ashore. His service included program management positions in ship construction, maintenance, logistics, repair and contracting. He completed five seagoing tours including two as Commanding Officer.

Mr. Carpentier was awarded a Bachelor of Science degree in Ocean Engineering from the U.S. Coast Guard Academy, and a Master of Science in Naval Architecture and Marine Engineering from the Massachusetts Institute of Technology. He is a member of the Society of Naval Architects and Marine Engineers, the American Society of Naval Engineers, is a life member of the Navy League of the United States and a and past Director on the Board of the Navy League's Charleston Chapter.

Dr. Michael White



A Ph.D. in physics, Dr. White has three patents and extensive publications in the areas spanning industrial process control technology, optical sensing, biomedical device design, ophthalmic devices, atmospheric sciences, and oceanographic modeling. As the CEO/CTO of Templeman Automation, Dr. White led industrial and SBIR-funded research as well as product development, bringing two technology products to market, including a low-cost PCR device. Dr. White is CEO/CTO at FTL Labs Corporation.

Victor Gerdes



Victor Gerdes is a Vice President of product management for ThingWorx, a complete end-to-end technology platform designed specifically for the Internet of Things. Mr. Gerdes has held leadership positions at PTC in ThingWorx Studio for Augmented Reality (AR), IoT, UX Design, Architecture and R&D Labs, the Enterprise Deployment Center and Windchill PLM. Victor has worked in technology & manufacturing since 1986 and with PTC for over 20 years developing technology solutions that transform the way companies create, operate, and service products.

Scott Miller



Mr. Miller is the founder and President of The Innovation Machine, an Industrial Engineering firm that architects and implements Integrated Production Systems (IPS) and new processes for CNC machined parts. After military service as a Naval Officer, Mr. Miller invented an integrated design-thru-manufacturing system that produced customized forged golf clubs for major golf manufacturers and professional golfers. At his current firm, he led the development of an Advanced Manufacturing Web Portal to increase adoption of advanced manufacturing technologies by streamlining the marketing, sales, and purchasing processes.

Mr. Miller was directly involved in the formation of multiple government research and economic initiatives to increase United States manufacturing productivity. He is currently developing “ELI”, a software platform to help visualize, analyze, and optimize Integrated Production Systems (IPS). Additionally, he is leading a group of over 50 partners to develop the world’s first “Mobile Demonstration Factory” to help Small to Medium Size Enterprises (SME) understand, experience, and participate in the next Industrial Revolution.