DMC 2013

How Can Manufacturing Innovation Improve Affordability?

December 2-5, 2013
Kissimmee, Florida

www.DMCMEETING.com
If you want to go to the moon again, we’ll be starting from scratch because all of that knowledge has disappeared. It would take at least as long and cost at least as much to go back.

Lost Knowledge (2005) – David DeLong

Knowledge Discovered
IHS is the source for critical information and insight for technical professionals

Stop by booth #318 to expand your knowledge and enhance your DMSMS/DMC 2013 experience by attending one of the following presentations:

- Engineering Research Unified with IHS Knowledge Collections
- Supply Chain Risk Mitigation and Obsolescence Management with Haystack Gold
- Rollout of Unified CAPS + 4D Database
- Understanding and Addressing Conflict Minerals Regulations and other regulatory issues
- IHS Standards Expert: Flexibility to Meet Your Standards Requirements
- BOM Manager and CAPS Universe Enhancements
- Taking Standards into the Third Dimension: 3D CAD Models for Critical Parts
- Beyond Standards: Opening the Window to Technical Knowledge
- IHS Engineering and Obsolescence Services
- Design Engineering Solutions and Best Practices: IHS ESDU

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PARTNERING TO COMBAT OBSOLESCENCE

BAE Systems’ Advanced Component Obsolescence Management (AVCOM) tool and service provides a cost-effective and customizable approach to helping minimize impacts to supply chains. AVCOM’s proactive approach addresses the occurrence of problems related to parts availability, which affect the readiness of systems and platforms that support the warfighter.

This is just one of the many ways we support the armed forces anywhere in the product lifecycle, anywhere in the world.

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Dear DMC Participants from Industry, Government and Academia:

Welcome to the 2013 Defense Manufacturing Conference (DMC 2013), the nation’s largest annual forum for the defense manufacturing and industrial base community of practice – business and technology leaders, policy makers, managers, scientists and engineers from all levels of industry, government and academia. This year, we examine the impacts of technology, program management, and institutional innovations on more affordable manufacturing related to the theme of “How Can Manufacturing Innovation Improve Affordability?”

With the growing interdependency of the national defense industrial base and the associated national science and technology base with the commercial sector, DMC 2013 will attempt to broaden attendees’ awareness of the growing importance of these relationships at a time of political, economic and budgetary uncertainty and national defense strategy (“Sustaining U.S. Global Leadership: Priorities for 21st Century Defense”) based upon more complex international, asymmetric and transitioning wartime scenarios.

To address these realities, the morning General Sessions will provide a unique and diverse forum of invited presentations from senior-level stakeholders in the Administration, the DOD, military departments and defense agencies; non-defense agencies including the National Institute of Standards of Technology (NIST); Industry and Academic manufacturing researchers and sponsoring agencies.

Afternoon Concurrent Sessions will include focused sessions on manufacturing technology for advanced manufacturing enterprise, metals, electronics, composites, energetics/munitions, manufacturing readiness, emerging innovative manufacturing sciences, technologies, and policies, manufacturing systems engineering, technology readiness process, modeling/simulation, and R&D collaborative initiatives - all receiving national attention and investment.

In addition, over 200 Industry and Government manufacturing process and product exhibits representing over 120 organizations showcasing the very latest state of the art initiatives will be on display throughout the conference.

The Universal Technology Corporation (UTC), a defense-oriented small business, is proud to be the 2013 DMC Host Sponsor and our professional staff looks forward to meeting your needs for a cost effective, successful and enjoyable conference.

UTC typically expresses our appreciation to general session keynote speakers (many of whom travel just to be with us for their important presentations) by presenting a memento of the occasion. UTC will be making a donation to one of the DOD sanctioned Wounded Warrior Support Organizations* in each speaker’s name and we suggest that other attendee organizations and exhibitors consider a donation as well to the Wounded Warrior organization of their choice. Such donations are tax deductible and provide direct assistance to healing wounded warriors returning home from current conflicts, as well as their families.

Your UTC Host Staff

Defense Manufacturing Conference 2013

* 2009 – The Wounded Warrior Foundation
CONFEREE BADGES
All participants for DMC 2013 must have proper identification to allow access to any session or social event. Therefore, badges must be worn at all times and placed in a visible location.
To attend general or technical sessions, you must be registered for the conference and follow the conference registration procedures. Exhibitors must check in at the Conference Registration Desk to pick up exhibitor badges and show proper identification. Exhibitor badges will not allow access to general or technical sessions. If exhibitors would like to attend the sessions, they must register and follow the conference registration process.

ITAR RESTRICTION
The information presented at this Conference is subject to the International Traffic in Arms Regulations (ITAR) or the Export Administration Regulations (EAR) of 1979. Information may not be exported, released or disclosed to foreign nationals inside or outside the United States without first obtaining an export license. A violation of the ITAR and EAR may be subject to penalty of up to 10 years imprisonment and a fine of $100,000 under 22 U.S.C. 2778 or Section 2410 of the Export Administration Act of 1979.

CONFERENCE ATTIRE
Attendees – Business Casual for all meeting sessions and social events
Civilian – Business Casual for all meeting sessions and social events
Military – Class B uniform as directed by organization policy
Speakers – Business attire or military service dress

FOOD FUNCTIONS & EXTRA GUEST TICKETS
To be admitted into the Group Luncheons and Group Breakfast, attendees and exhibitors must have an Attendee or Attendee/Exhibitor badge. If you do not have one of these badges, you must present a ticket for luncheons/breakfast. To be admitted into the receptions, you must either have an Attendee, Attendee/Exhibitor or Exhibitor badge, or present the proper ticket. There will be no exceptions, so please make sure when you attend these functions that you have your badge or ticket. Guests may attend the social events by purchasing a ticket at the Registration Desk for the desired event. All guests must be accompanied by an attendee and have the proper ticket to enter the conference event. Extra tickets are available for the following costs: Monday Welcome Reception $50, Tuesday Group Luncheon $45, Tuesday Exhibitor Reception $50, Wednesday Group Luncheon $45, Thursday Group Breakfast $40.

EXHIBITS
One of the key attractions of the Defense Manufacturing Conference continues to be the vast array of innovative technologies on display throughout the Conference. The exhibits highlight current and future weapon systems and associated manufacturing/sustainment initiatives aimed at lowering weapon system acquisition/ownership costs and establishing affordable advanced performance capabilities.
Exhibits will be open at specific times as noted in the Conference Agenda, giving attendees the opportunity to network and see the latest technologies firsthand.

CONFERENCE PROCEEDINGS
In order to provide you with all the presentation material from the conference, this year the General Session and Concurrent Sessions will be posted on the Advanced Technical Intelligence Center (ATIC) secured website, two weeks after the DMC 2013 conference. More information about how to download the material will be sent to all registered attendees after the conference.

ATTENDEE LIST
All registered attendees will receive a Final Attendee List along with a Conference Questionnaire after the conference.
MONDAY, December 2

11:00 AM - 7:00 PM Registration
Osceola Lobby

1:30 PM - 3:00 PM Concurrent Sessions
- JDMTP Advanced Manufacturing Enterprise - Current and Future Challenges in AME, Osceola A
- JDMTP Composites - Nano Enhancements for Composites, Osceola 1-2
- JDMTP Electronics - RF Technologies Manufacturing Excellence, Osceola B
- Gee Whiz - NIST, Sarasota
- JDMTP Manufacturing Readiness Levels (MRLs), Osceola 5-6
- JDMTP Metals - Lighter Weight Metals for Vehicle Protection, Osceola 3-4
- NDIA - Power Sources Working Group, Osceola 5-6

1:30 PM - 3:30 PM Refreshment Break
Osceola Foyer

3:00 PM - 5:00 PM Concurrent Sessions
- JDMTP Advanced Manufacturing Enterprise - Current and Future Challenges in AME, Osceola A
- JDMTP Composites - Intelligent Manufacturing of Composite Structures, Osceola 1-2
- JDMTP Electronics - Lead Free Electronics Risk Mitigation, Osceola B
- Gee Whiz - DARPA, Sarasota
- NDIA Session: America Makes - National Additive Manufacturing Innovation Institute, Osceola 5-6
- JDMTP Metals - Lighter Weight Metals for Vehicle Protection, Osceola 3-4

5:00 PM - 7:00 PM Welcome Reception & Poster Session - Opening of Exhibits
Florida Exhibition Hall B-D
TUESDAY, December 3

7:00 AM - 7:00 PM |
Registration |
Osceola Lobby

7:00 AM - 8:00 AM |
Continental Breakfast |
Osceola Lobby

8:00 AM - 12:00 PM |
General Session |
Osceola C-D

9:00 AM - 7:00 PM |
Exhibits Open |
Florida Exhibition Hall B-D

9:00 AM - 10:15 AM |
Award Presentations |
Osceola C-D
• DMSMS Award Announcement
• 2013 Joint Defense Manufacturing Technology Achievement Award
• 2013 Defense Manufacturing Excellence Award
• 2013 Champion Award

11:20 AM - 12:00 PM |
Lunch, Group Luncheon |
Sun Ballroom A-B

12:00 PM - 1:30 PM |
Group Luncheon |
Sun Ballroom A-B
Implementation of Innovative Manufacturing Technologies
Dr. Lonnie Love, Oak Ridge National Laboratory

1:30 PM - 3:00 PM |
Concurrent Sessions |
Osceola A
• JDMTP Advanced Manufacturing Enterprise - Advances in Intelligent Manufacturing
Osceola 1-2
• JDMTP Composites - F-35 Composites Manufacturing Technology
Sarasota
• DARPA Open Manufacturing
Osceola 3-4
• JDMTP Energetics and Munitions
Osceola 5-6
• JDMTP Metals - Manufacturing Technology for Weapon Systems Application
Tampa
• NDIA - Cyber Security for Manufacturing
Tampa
• JDMTP Printed Electronics - Enabling Technology for the Warfighter

3:00 PM - 3:30 PM |
Exhibits Open |
Florida Exhibition Hall B-D

3:30 PM - 5:00 PM |
Concurrent Sessions |
Osceola A
• JDMTP Advanced Manufacturing Enterprise - Advances in Intelligent Manufacturing
Osceola 1-2
• JDMTP Composites - Out of Autoclave Composites Manufacturing
Osceola 3-4
• DARPA Open Manufacturing
Sarasota
• JDMTP Energetics and Munitions
Osceola 5-6
• JDMTP Metals - Manufacturing Technology for Weapon Systems Application
Osceola 3-4

5:00 PM - 7:00 PM |
Networking Reception & Poster Session - Exhibit Hall |
Florida Exhibition Hall B-D

WEDNESDAY, December 4

7:00 AM - 5:00 PM |
Registration |
Osceola Lobby

7:00 AM - 8:00 AM |
Continental Breakfast |
Osceola Lobby

8:00 AM - 12:00 PM |
General Session |
Osceola C-D

9:00 AM - 10:15 AM |
Exhibits Open |
Florida Exhibition Hall B-D

9:15 AM - 10:15 AM |
Networking Session & Poster Session - Exhibit Hall |
Florida Exhibition Hall B-D

12:00 PM - 1:30 PM |
Group Luncheon |
Sun Ballroom A-B
Innovation – Father of “Pit Stop” Engineering
Speaker: Mr. Dennis Carlson, Carlson Technology

1:30 PM - 3:00 PM |
Concurrent Sessions |
Osceola A
• JDMTP Advanced Manufacturing Enterprise - Interoperability
Osceola 1-2
• JDMTP Composites - Polymeric Additive Manufacturing
Osceola B
• JDMTP Electronics - Electro-Optic Advanced Manufacturing Technology
Sarasota
• JDMTP Energetics and Munitions
Osceola 5-6
• JDMTP Manufacturing Readiness Levels (MRLs)
Osceola 3-4
• JDMTP Metals - Additive Manufacturing
Osceola 3-4
• NDIA - Managing Risk in the Aerospace and Defense Supply Chains
Tampa

3:00 PM - 3:30 PM |
Exhibits Open |
Florida Exhibition Hall B-D

3:30 PM - 5:00 PM |
Concurrent Sessions |
Osceola A
• JDMTP Advanced Manufacturing Enterprise - Interoperability
Osceola 1-2
• JDMTP Composites - Aviation Composites Manufacturing Technology
Osceola 3-4
• JDMTP Electronics - Advanced Power and Energy Sources
Osceola 3-4
• JDMTP Manufacturing Readiness Levels (MRLs)
Osceola 3-4
• JDMTP Metals - Additive Manufacturing
Osceola 3-4
• NDIA - Supplier Networks of the Future

5:00 PM - 7:00 PM |
Networking Reception & Poster Session - Exhibit Hall |
Florida Exhibition Hall B-D
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<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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<tr>
<td>7:00 AM - 4:30 PM</td>
<td>Registration</td>
<td>Osceola Lobby</td>
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<tr>
<td>8:00 AM - 8:30 AM</td>
<td>Group Breakfast</td>
<td>Osceola C-D</td>
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<tr>
<td>8:30 AM - 12:00 PM</td>
<td>General Session</td>
<td>Osceola C-D</td>
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<td>12:00 PM - 1:00 PM</td>
<td>Lunch <em>(on your own)</em></td>
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<td>1:00 PM - 2:30 PM</td>
<td>Concurrent Sessions</td>
<td>Osceola A</td>
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<td>• JDMTP Advanced Manufacturing Enterprise - Technical Data</td>
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<td>• JDMTP Composites - Naval Composites Manufacturing Technology</td>
<td>Osceola 1-2</td>
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<td>• JDMTP Electronics - Advanced Electronics Packaging</td>
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<td>• JDMTP Metals - Novel Processes for Metals Manufacturing</td>
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<td>2:30 PM - 3:00 PM</td>
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<td>Osceola Foyer</td>
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<td>• JDMTP Metals - Novel Processes for Metals Manufacturing</td>
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The DoD’s Defense Manufacturing Technology Achievement Award is sponsored by the JDMTP, and is given to teams comprised of both government and private sector members who are responsible for outstanding projects in manufacturing technology. The Achievement Award recognizes and honors the team members whose projects demonstrated technical accomplishments that helped to achieve the vision of the DoD ManTech program: To realize a responsive world-class manufacturing capability to affordably meet the Warfighters’ needs throughout the defense system life cycle.

Nominees are evaluated based on 3 criteria: manufacturing technology achievement, transition/implementation, and potential or realized benefits. To be eligible, nominated projects must have been managed by a ManTech program of the Services, MDA, OSD, or the DLA. The selection committee consists of the six current JDMTP Principals.

We want to thank the 2013 Defense Manufacturing Technology Achievement Award nominees for their commitment to manufacturing and technological innovations for the Warfighter.

**Finalists:**

**Advanced Body Armor**
Shawn M. Walsh and Lionel R. Vargas-Gonzalez (ARL, Agile Manufacturing Technology Team), James Campbell (ARL, Ceramic and Transparent Armor Team), James Q. Zheng (PM SOLDIER, Soldier Protection Individual Equipment), Richard Palicka (CoorsTek Vista), Steve Elliot (St. Gobain Ceramics), Prashant Karandikar (M Cubed Technologies, Inc.), Ross Hutter (Accudyne Systems Inc.), Robert Speyer (Verco LLC)

**Chip Scale Atomic Clock (CSAC)**
Yoonkee Kim and Van Tran (US Army CERDEC CP&ID), Sunil Sadhwani and Jeffrey Dansereau (Symmetricom, Inc.), Jeffrey Kriz and Robert Compton (Honeywell, Int.), Ruben Marquez and Dale Hollis (Teledyne Reynolds, Inc.)

**F-35 Canopy Thermoforming Automation**
Neil Graf (ONR ManTech), Chris Coughlin (NAVAIR 4.3.4.4 Polymers and Composites), Joe Ichiyoshi (NAVAIR), Dave Thomas (JSF Production Operations), Ryan Frankart (Navy Composites Manufacturing Technology Center, SCRA Applied R&D), Matthew Ashley, Phillip Sturman, and Derek Krumm (GKN Advanced Transparency Systems)

**Plate Edge Preparation Improvements (PEPI)**
Lance Flitter (PMS 500 Program, Naval Surface Warfare Center, Carderock Division), Gene Franke (Naval Surface Warfare Center, Carderock Division), Stephen Davis and Philip Taylor (General Dynamics Bath Iron Works), Kevin Roossinck (Huntington Ingalls Industries – Ingalls Shipbuilding), Karl Kopija (E.H. Wachs), Timothy G. Freidhoff, Al Baum, Paul Sleppy and Christopher Alexion (Navy Metalworking Center/Concurrent Technologies Corporation)

**Restoration of Aerospace Parts by Cold Spray**
Dr. Timothy Eden (Applied Research Laboratory, Penn State), Frederick Lancaster (Naval Air Systems Command (NAVAIR)), Luc Doan and Conrad Macy (US Navy, FRC-SW North Island), Robert Kestler (US Navy, FRC East), Victor Champagne (US Army Research Laboratory), Michael J. Kane and Fernando R. Merritt (US Army AMRDEC), William C. Harris Jr. (Sikorsky), Bob Bierk (Moog Inc.)

**Other Nominees:**

**Large Affordable CdZnTe Substrates (LAS)**
J. David Benson (Night Vision and Electronics Sensors Directorate, Science and Technology Division (NVESD/S&T)), Scott Johnson and Kelly A. Jones (Raytheon Vision Systems), Aristo Yulius (Teledyne Imaging Sensors)

**Meals Ready to Eat (MRE) Assembly Improvement Project – “MRE Fit”**
Jason Niedzwiecki and Robert Trottier (Combat Feeding Directorate, Research, Development and Engineering Center, US Army Natick Soldier Systems Center (NSSC)), Brad Hildtbrand (COL Veterinary Corps/US Army, Defense Logistics Agency (DLA) Technical Quality), Robert Coger (Combat Rations Network (CORANET), DLA R&D), Hung Jue Sue (Texas A&M Engineering Experiment Station), Rudy Sawhney (University of Tennessee Agricultural Experiment Station)
Since 1995, the National Center for Advanced Technologies (NCAT), acting as the agent for the Associations and Societies involved in the Multi-Association Industry Affordability Task Force, has sought to recognize an individual and small working groups/teams in the defense manufacturing community for making outstanding contributions to furthering manufacturing science and technology in the United States for the past fiscal year (Oct. 2012 - Sep. 2013). Through the Defense Manufacturing Excellence Award, these Associations and Professional Societies acknowledge and recognize contributions of those scientists, designers, engineers, and/or managers involved in defense manufacturing who have sought to:

1. Conduct research into ways and means to increase the producibility, affordability, or technical superiority of the nation’s defense systems and/or
2. Develop or practice ways and means to increase the producibility, affordability, or technical superiority of the nation’s defense systems.

Each Association and Society solicits nominations for the Award from its members and then forwards the nominations to NCAT.

Each year a lead Association or Society acts as the main sponsor for the Award, which is also endorsed by all the other Associations and Societies affiliated with the Multi-Association Industry Affordability Task Force. This year, the Association for Manufacturing Technology (AMT) is the lead association for the award selection process and will sponsor the Award presentation at DMC. Mr. Tim Shinbara, Technical Director at AMT, chaired the 2013 Defense Manufacturing Excellence Award Selection Committee and will present the Award.

**Lead Associations/Societies have included:**

- Society of Manufacturing Engineers (SME): 2001, 2008
- Government Electronics Information Technology Association (GEIA): 1997, 2005
- Armed Forces Communications and Electronics Association (AFCEA): 1999
- National Center for Defense Manufacturing and Machining (NCDMM): 2012
- National Center for Manufacturing and Machining (NCDMM): 2012
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**2013 DEFENSE MANUFACTURING EXCELLENCE AWARDS**

**PAST AWARD RECIPIENTS**

**2012**
- Mr. Ed Morris
- MLRS Rocket Motor: Air Pollution Control System

**2011**
- Mr. Steven M. Linder
- Zinc Sulfide Missile Dome
- Volumetric Accuracy for Large Machine Tools

**2010**
- Mr. William P. Rollins
- Automated Robotic Blade Stripping System Team
- Metal Electroplating with No-Mask Conforming Anode Team

**2009**
- Mr. Donald H. Verhoff
- Volumetric Accuracy for Large Machine Tools Team
- Tantalum-Tungsten Lined Gun Barrel Manufacturing Team
- M-ATV Production Launch Team

**2008**
- DHUD Reflective Microdisplay Team
- Naval Propulsion Shaft Machining Team

**2007**
- Mr. Jim Mattice
- Common Composite Tailcone
- Kinetic Spray Metal Deposition Technologies

**2006**
- Dr. Jacques Gansler
- Exoatmospheric Kill Vehicle
- Enhanced Wiring Integrity Team

**2005**
- Mr. Thomas D. “Dan” Cundiff
- Rapid Prototyping Technology Advancement Team

**2004**
- Mr. Larry Rhodes, Extrude Hone
- Metals Affordability Initiative
- The Light Armored Vehicle Logistics Support Team

**2003**
- Mr. Leonard Martinez, Sandia National Laboratories
- Paveway Integrated Supply Chain Team, Raytheon
- ManTech Laser Shock Peening Initiative, LSI, Inc.

**2002**
- Mr. Richard Engwall
- Laser Engineered Net Shaping (LENS) NCMS/CTMA Team
- High Throughput Production Process (HITHRU) NCMS/CTMA Team
- Objective Individual Combat Weapon (OICW) ATK Team
- Sandoff Land Attack Missile-Expanded Response (SLAM-ER) Lean Pathways Team

**2001**
- Mr. Robert Cattoi
- Lockheed Martin Aeronautics JSF Airframe Affordability Demonstration Team
- Lockheed Martin Aeronautics Project Lightspeed Team

**2000**
- Mr. James M. Sinnett
- The Boeing JDAM Production and SMEI Teams

**1999**
- Dr. Lance Davis
- Harris GCSD Team

**1998**
- Mr. Herman M. Reinenga

**1997**
- Mr. Aris Melissaratos

**1996**
- Mr. William James Andahazy

**1995**
- Mr. R. Noel Longuemare
The ManTech Champion Award recognizes and honors an individual in government or the private sector, who has made significant and enduring contributions to the DoD Manufacturing Technology Program. This year will mark only the second occasion of this Award, which is presented at the discretion of the Joint Defense ManTech Panel (JDMTP) on behalf of all of the ManTech programs of the Army, Navy, Air Force, DLA, and OSD. Any individual who is selected as a “champion” of manufacturing technology is eligible to receive this award – someone who understands, and has consistently advocated and supported the powerful impact of manufacturing technology for increasing warfighter capability, reducing cost, and improving program performance. This individual is, or has been, an ardent supporter and defender of the need to stay at the forefront of defense-essential manufacturing capability. With his or her support, they have driven to ensure that our Nation’s Warfighters are the beneficiaries of the best technology that industry can provide, and that we, as a Department, provide those technologies quickly and affordably.

The Second Recipient of this Award is Mr. James J. Mattice, SES (Retired), USAF

Jim was the Program Chairman for the DMC from 1998 through 2012 while also serving as Senior Consultant for Business Development at the Universal Technology Corporation. Jim’s prior 38-year Air Force career included assignments as Deputy Assistant Secretary of the Air Force for Research & Engineering, the Air Force Chair at the Federal Executive Institute, Executive Director at the AF Aeronautical Systems Center and as the longest serving former Director of the Air Force ManTech Program. In all of these positions, Jim’s commitment and dedicated service to the Defense Manufacturing Technology Program and Community makes him a true ManTech Champion!
Tuesday - Group Luncheon Speaker

Implementation of Innovative Manufacturing Technologies

Dr. Lonnie Love
Oak Ridge National Laboratory

Lonnie Love, Ph.D., is the group leader of ORNL’s Manufacturing Systems Research Group. He has over 15 years of experience in the design and control of complex robotic and hydraulic systems. His primary expertise is in the areas of hydraulics, additive manufacturing, force controlled systems, human strength amplification, high payload robotics and nanomaterials. Recent research efforts have focused on freeform fluidics, developing new lightweight low-cost hydraulic systems through additive manufacturing. Example applications include underwater robotics (teaming with Bluefin), prosthetics and haptic interfaces. Lonnie was ORNL’s 2009 Inventor of the Year, 2006 R&D 100 award winner, 2006 Micro/Nano Award winner, has over 10 invention disclosures and patents and 50 peer reviewed publications. He serves on the scientific advisory board for NSF’s Center for Compact and Efficient Fluid Power and is on the Medical and Scientific Advisory Board for OrthoCare Innovations.

Wednesday - Group Luncheon Speaker

Innovation – Father of “Pit Stop” Engineering

Mr. Dennis Carlson
Carlson Technology

Dennis Carlson received his degree in Architecture from the University of Michigan, and is a licensed Architect. He became a partner in the second largest AE firm in Michigan, and spent evenings and weekends working with Team McLaren, initially in reducing the time for pit stops, to help in their goal to beat Roger Penske. His work in racing was expanding, which caused him to abandon architecture, and pursue a new career in the highest levels of racing. He formed Carlson Technology in 1978. In 1984 he won the “Behind the Scenes” award from ESPN, for his development and integration of the NASA systems for cooling the astronauts into Formula One cars at the US Grand Prix.

His work in racing first caught the attention of the Navy, and then the Army, and he began developing projects the way the top racing teams would attack a problem. His Defense work has produced three Gold Awards from BusinessWeek Magazine’s annual Design Awards, and two Packard Acquisition Awards from the Department of Defense. He has served on the Army Science Board, on the Executive Steering Board at OSD for Maintenance Policy and Material Readiness, and been a featured panel member and speaker on numerous occasions.

DMC Poster Presentations

Industrial Base Trends in Electronics Interconnection Technologies
Poster Presenter: Mr Craig Hemdon - NSWC Crane

Socializing the US Industrial Base to Meet DoD Procurement Challenge
Poster Presenter: Mr Naresh Rathod - Imaginetics LLC

Recent Developments in Computational Material and Failure Modeling using the Cockcroft-Latham Failure Criterion but Augmented with a Strain-Rate Dependency Term for Rate-Sensitive Alloys
Poster Presenter: Mr Richard Nemec - Alcoa Inc

Non-Destructive Inspection (NDI) of Electron Beam Direct Manufacturing (EBDM) of Titanium
Poster Presenter: Dr Kevin Klug - Concurrent Technologies Corp

Atmospheric Pressure Plasma Treatment of Organic Matrix Composites for Structural Adhesive Bonding
Poster Presenter: Mr Mikhail Grigoriev - Aerospace Materials Processing

DMSMS Poster Presentations

An Accurate New Technique for the Detection of Conflict Minerals and Implications for the Identification of: Counterfeit Products and Sub-Standard Parts
Poster Presenter: Ms Catherine McManus - Materialytics LLC

From Re-engineering to Organic Maintenance. Delivering the Unknown On-Time and On-budget
Poster Presenter: Mr Brent Carlson - Space Dynamics Lab

Legacy Sustainment: Innovation for the Next Generation of DMSMS
Poster Presenter: Mr Ethan Piotkin - GDCA Inc

Automated Design Extraction for IC Part Obsolescence and Counterfeit Mitigation
Poster Presenter: Mr John Hallman - MacAulay-Brown Inc
All exhibitor profiles are on the DMC website. Please go to the interactive exhibit hall map and click on a booth or organization name to see their information below the map at: http://www.dmcmeeting.com/page/exhibit13.html
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<td>Dr. Kyu Cho</td>
<td>Future Challenges in AME</td>
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<td>10:15 AM</td>
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<td>Mr. James Gucinski</td>
<td>Manufacturing Readiness Levels (MRLs)</td>
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<td>11:30 AM</td>
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<td>Dr. Anisur Rahman</td>
<td>NIST/MEP - AME Manufacturing</td>
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<td>12:45 PM</td>
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<td>Prof. Brian Wardle</td>
<td>US Army Research Lab - Nano Reinforced Carbon Nanotube</td>
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<td>2:00 PM</td>
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<td>Dr. Seth Kessler</td>
<td>DARPA/ONR - ARL/ONR Multi-Functional Manufacturing</td>
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<td>Mr. Paul Huang</td>
<td>AFRL - GAUSS Manufacturing</td>
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<td>4:30 PM</td>
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<td>Mr. Rajinder Sandhu</td>
<td>Lockheed Martin Co - Next Generation Vehicle Protection</td>
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**Notes:**
- **AME - Current and Future Challenges in AME**
- **Advanced Manufacturing and Industry**
- **NIST/MEP - AME Manufacturing**
- **US Army Research Lab - Nano Reinforced Carbon Nanotube**
- **AFRL - GAUSS Manufacturing**
- **Lockheed Martin Co - Next Generation Vehicle Protection**
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<td>Enabling Printed Technologies for Military Applications Mr. James Zunino US Army ARDEC</td>
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<tr>
<td>1:30 PM - 2:00 PM</td>
<td>Enabling Printed Technologies for Military Applications Mr. James Zunino US Army ARDEC</td>
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<td>2:00 PM - 3:00 PM</td>
<td>Composites - Out of Autoclave Composites Manufacturing Mr. Neil Graf Office Of Naval Research</td>
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<td>3:00 PM - 4:00 PM</td>
<td>Manufacturing of Aluminum Alloy Structures for Modernizing the Aging Fleet Mr. Frank Shoup Alcoa Inc</td>
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<td>4:00 PM - 5:00 PM</td>
<td>Manufacturing of Aluminum Hulled Ground Combat Vehicles Mr. Lawrence Brown Edison Welding Institute</td>
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<td>5:00 PM - 6:00 PM</td>
<td>Repair and Reset of Aluminum Hulled Ground Combat Vehicles Mr. Lawrence Brown Edison Welding Institute</td>
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<td>6:00 PM - 7:00 PM</td>
<td>Rapid Qualification Through Robust Modeling Mr. Milton Ortiz Honeywell Inc</td>
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<td>7:00 PM - 8:00 PM</td>
<td>Implications for Supply Chain Risk Management Ms. Jennifer Boscoglie Interros Solutions Inc</td>
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<td>8:00 PM - 9:00 PM</td>
<td>Cyberspace R&amp;D Relevance to the Advanced Manufacturing Enterprise Mr. Brenton Boden USAF AFRL</td>
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<td>AME - Interoperability</td>
<td>Electronics - Advanced Power and Energy Sources</td>
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<td>Dr Gregory Harris</td>
<td>Mr James Bangs Raytheon Co</td>
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<td>US Army AMRDEC</td>
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**AME - Interoperability**

- **Electronics - Advanced Power and Energy Sources**
  - Mr James Bangs Raytheon Co
- **Composites - Avionics Composite Manufacturing Technology**
  - Mr John Mazurowski Penn State Electro-Optics Center
- **Metals - Additive Manufacturing**
  - Mr Walter Roy Strategic Mantech
- **Manufacturing Readiness Levels (MRLs)**
  - MRAP Workshop Overview
- **Energies and Munitions**
  - Mr Charles Painter NSWC IHEOTD

**Visualization Inspection to Validate Integrated Data**

- **Video-DV**
  - Mr Dan Sokol Renaissance Services Inc
- **Hybrid Chemistry Batteries for Military Applications**
  - Mr Tony Provencal ITI Transcendents
- **Feasibility Study Results**
  - Dr Mark Michelini BCF Solutions
- **Li-CFe/MnO2 Batteries**
  - Mr Tony Provencal ITI Transcendents
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**Implementation of a Model Based Design (MBD) Environment at NAVAIR**

- **Li-CFe/MnO2 Batteries**
  - Mr Tony Provencal ITI Transcendents
- **Feasibility Study Results**
  - Dr Mark Michelini BCF Solutions
- **Li-CFe/MnO2 Batteries**
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**Panel: Session Discussion**

- **Solid Oxide Fuel Cell Ceramic Powder Characterization**
  - Mr Carmine Medda ACI Technologies Inc
- **Flexible Thin Film Technology**
  - Mr Vernor Benson ATK Aerospace
- **NASA Additive Manufacturing Program Plan/ Advanced Manufacturing Technology**
  - Dr Terri Trelmal NASA
- **Measurement Science for Additive Manufacturing**
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<th>Session</th>
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<tr>
<td>1:00 PM</td>
<td>Osceola A: AME - Technical Data&lt;br&gt;Mr Ben Kassel, NSWCCD&lt;br&gt;Electronic - Advanced Electronics Packaging&lt;br&gt;Mrs Becky Stewart, Universal Solutions International&lt;br&gt;Mr Bryan Misdanifer, NSWCCD</td>
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<td>1:30 PM</td>
<td>Osceola B: The Use of Photonic Printed Wiring Boards PPWBs and a Common Processing Architecture Can Provide Significant Cost Benefits to Military Systems&lt;br&gt;Mr Kevin Thorton, Lockheed Martin Co</td>
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<td>2:00 PM</td>
<td>Osceola 1-2: Composite Manufacturing Technology for Sail Cap Doors and Plates&lt;br&gt;Dr Jeffrey Hall, General Dynamics Electric Boat</td>
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<td>2:30 PM</td>
<td>Osceola 3-4: Innovations in DOD Cold Spray Applications&lt;br&gt;Mr Victor Champagne, US Army Research Lab</td>
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<td>3:00 PM</td>
<td>Adoption of Model-Based Enterprise (MBE) for Integrated Technical Data Package (ITDP) Generation and Product Lifecycle Cost Reduction&lt;br&gt;Mr Robert Taylor, ACI Technologies Inc</td>
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<td>3:30 PM</td>
<td>Light Weight Low Cost Sub-System&lt;br&gt;Mr Orlando Mijares, Raytheon Missile Systems Co</td>
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<td>4:00 PM</td>
<td>Framework for Assessment of Cost and Technology (FACT) applied to M777 Howitzer Provisioning&lt;br&gt;Mr Victor Pugliano, US Army ARDEC</td>
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**Thursday, December 5**

**2:30 PM - 3:00 PM - Refreshment Break** - Osceola Foyer

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**3:00 PM - 4:00 PM**

**Osceola A**
- AME - Technical Data<br>Mr Ben Kassel, NSWCCD
- Modernizing TDP to Increase Supplier Bid Rate and Improve Productivity<br>Mr Nainesh Rathod, Imaginestics LLC
- NetCentric Model-Based Enterprise Update<br>Mr Adam Frey, US Army ARDEC

**Osceola B**
- Electronics - Electronic Materials Manufacturing Innovation<br>Mr Mark Gordon, National Center for Advanced Technologies<br>Mr Richard Heron, Office of Naval Research
- Novel Process Engineering for Sustaining High Yield, Low Cost for National Security Space NSS Qualified Epitaxial Germanium Substrates for Space-Based Power Systems<br>Mr Richard Tealshow, Syntex Technologies
- Manufacturing Challenges in Wide Bandgap WBG Semiconductor Power Devices<br>Dr Krishna Shenai, Argonne National Lab

**Osceola 1-2**
- Composites - Composite Armor Manufacturing Technology<br>Dr Ryan Emerson, US Army Research Laboratory
- Production and Optical Finishing of Lightweight, Thin Transparent Ceramic Armor with Large Radius of Curvature<br>Mr Joseph Spillman, ArmorLine Corp
- Process and Manufacturing Technology Enabling for Lighter Ceramic-Based Body Armor<br>Dr Shawn Welsh, US Army Research Lab

**Osceola 3-4**
- Metals - Novel Processes for Metals Manufacturing<br>Mr Curtis Toone, BAE Systems Land Armaments
- Field Assisted Sintering: A Viable Manufacturing Technology for DoD Applications<br>Mr Robert Hrabe, VRC Metal Systems
- Development of a Hand-held, High-pressure Cold Spray System for Field Repairs and Reduced Sustainment Costs<br>Mr Robert Hobbs, VRC Metal Systems
- Defense Counterspace Concept (DCC) for Improved Decision Making and National Security

**Cost Reduction of Ceramic Composite Armor Solutions for Tactical and Combat Vehicles Through the Use of Advanced Manufacturing Processes<br>Mr Erik Poles, US Army TARDEC**

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**Surface Finish Enhancement of TiAlIV Components Fabricated via Electron Beam Additive Manufacturing<br>Dr Eric Todman, Northrop Grumman Corp**

**PANEL: Session Discussion**

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