

Announcing the 6<sup>th</sup> State-of-the-Science Interactive Symposium on....

# ADDITIVE MANUFACTURING

For Defense and Government

— MISSIONS - CAPABILITIES - OPPORTUNITIES —

Featuring Special DoD & Government Presentations by:



**Captain Jason Bridges, USN**

Dir., Navy Business Operations/Total Ownership Cost Branch, Office of the Deputy, Chief of Naval Operations for Fleet Readiness and Logistics (OPNAV N41)



**Ms. Tracy Frost**

Director, DoD Manufacturing USA Institutes, Acting Director, DoD ManTech



**Mr. John M. Ortiz Jr.**

Project Manager, Technology Readiness Assessment Guide Project, U.S. Government Accountability Office

**Leading Experts from:** DLA, DOD/ManTech, DOE, USN/OPNAV N41, USA/ARDEC, USMC, GAO, NASA Marshall Space Flight Center, ARL/PSU, AFOSR, Sikorsky/Lockheed Martin, 3D Systems, Northrop Grumman, Deloitte Federal, Walter Reed National Military Medical Center, and Rolls-Royce examine:

- Latest DoD & Government Plans, Programs, Needs and New Initiatives
- Missions, Applications and Lessons Learned
- Breakthrough AM, 3D/4D Needs and Capabilities
- Spinoffs and Lessons Learned from Commercial AM Efforts
- Research and Automation Advancements within AM

**Washington, DC • July 13-14, 2017**

## ***Additive Manufacturing – Revolutionizing Aerospace and Defense Innovation, Production, Logistics, and Readiness***

**Additive Manufacturing** (unlike traditional manufacturing) is the ability to create a physical object from a digitally encoded design through the deposition of material via a 3D printing process eliminating excess material waste. This ability to exchange AM design and manufacturing capabilities via file sharing has created an enormous potential and with incredible ramifications for reducing shipping and production costs, slashing production-to-end-user cycle times, dramatically improving SWaP ratios, and significantly reducing the logistics footprint. The range of potential applications is limitless: spare parts, medical prosthetics, bioengineered human cells, armor and other force protective equipment, explosives, sensors, and perhaps eventually entire systems, containing printed circuitry, power storage and software.

This carefully crafted technical symposium provides a forum for key government and industry experts who are shaping the future of additive manufacturing for defense and government to examine the latest DoD and government plans for spurring the growth of this dynamic technology. Questions and topics will include:

- **How are DoD and Service manufacturing strategies being shaped by additive manufacturing?**
- **How is the state-of-the-science being pushed by NIST, DOE, NASA, NSF and other government efforts? What are the emerging lessons learned from early tactical deployments of 3D printing on the battlefield? Aboard ship?**
- **What new materials and processes are needed? What are the potential cyber security challenges and solutions? What is 4D printing?**
- **How will 4D printing enable future systems to evolve in response to immediate tactical stimuli? What are the latest 3D/4D printing and AM capabilities on the industry drawing board? How can you get involved?**

These and many other critical questions will be examined during this Interactive General Session.

### ***Our Distinguished Panel of DoD, Government, and Industry AM Experts***

**Captain Jason Bridges , USN**

USN Director, Navy Business Operations and Total Ownership Cost Branch, Office of the Deputy Chief of Naval Operations for Fleet Readiness and Logistics (OPNAV N41)

**Ms. Tracy Frost**

Director, DoD Manufacturing USA Institutes & Acting Director, DoD ManTech

**Ms. Kelly Morris**

Chief, Logistics Research and Development, Defense Logistics Agency

**Dr. Devanand Shenoy**

Chief Engineer, Advanced Manufacturing Office, U.S. Department of Energy

**Mr. John M. Ortiz Jr.**

Project Manager, Technology Readiness Assessment Guide Project, U.S. Government Accountability Office (GAO)

**Dr. Jaimie Tiley**

Program Officer, Air Force Office of Scientific Research (AFOSR/RTA)

**Mr. James Zunino**

Senior Materials Engineer, Materials, Mfg. & and Prototype Technology Division, Picatinny Arsenal, U.S. Army (ARDEC)

**Dr. Edward Reutzel**

Senior Research Associate, Center for Innovative Materials Processing (CIMP-3D), Dept. Head, Laser System Engineering & Integration, (ARL Penn State)

**Ms. Kristin Morgan**

Engineering Project Manager, NASA Marshall Space Flight Center

**Ms. Bianca Lankford**

Mechanical Engineer, Northrop Grumman Corporation

**LtCol Howard Marotto, USMC**

LPV-3, NexLog, Additive Manufacturing and Innovation

**Mr. Joe Schibi**

Senior Consultant, Supply Chain Strategy, Deloitte Consulting LLP

**Mr. Jared Blecher**

Senior Metals Defense Engineer, 3D Systems

**Mr. Bill Harris**

Technical Fellow, Manufacturing Technology, Sikorsky Aircraft, a Lockheed Martin Company

**Mr. Mark Vitale**

Specialist Leader, Deloitte Consulting LLP Federal Practice

**Mr. John Grubbs**

Technical Program Manager, Rolls-Royce

**Dr. Peter Liacouras**

Director of Services, 3D Medical Applications Center, Department of Radiology, Walter Reed National Military Medical Center

# 6th Symposium on Additive Manufacturing For Defense and Government

Washington, DC • July 13-14, 2017

## Symposium Agenda

### I. DoD and Government Additive Manufacturing: Key Programs, Future Plans and Opportunities

#### SPECIAL NAVY PRESENTATION



#### “U.S. Navy Additive Manufacturing”

**CAPTAIN JASON BRIDGES, USN**

*Director, Navy Business Operations and Total Ownership Cost Branch, Office of the Deputy Chief of Naval Operations for Fleet Readiness and Logistics (OPNAV N41)*



#### KEY DOD AND GAO INITIATIVES AND ASSESSMENTS



#### “Additive Manufacturing and DoD Office of Manufacturing and Industrial Base Policy Initiatives”

**MS. TRACY FROST**

*Director, DoD Manufacturing USA Institutes & Acting Director, DoD ManTech*



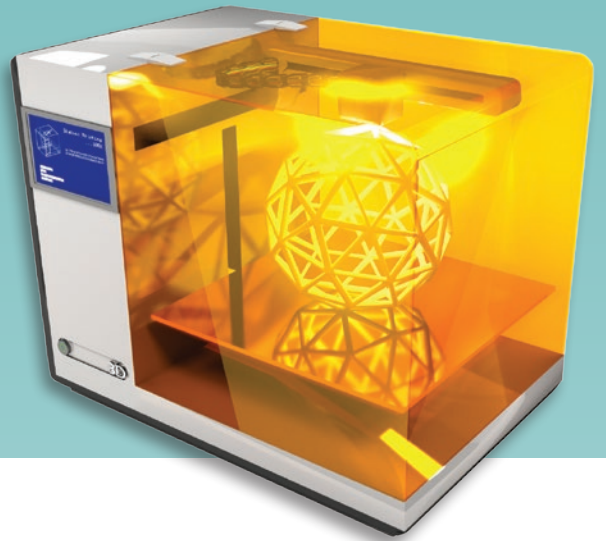
#### “GAO Technology Readiness Assessment”



**MR. JOHN M. ORTIZ JR**

*Project Manager, Technology Readiness Assessment Guide Project, U.S. Government Accountability Office (GAO)*





### **“DLA Initiatives in Additive Manufacturing”**

**MS. KELLY MORRIS**

*Chief, Logistics Research and Development Defense Logistics Agency (DLA)*

### **“Additive Manufacturing Research & Development at ARDEC”**

**MR. JAMES ZUNINO**

*Senior Materials Engineer, Materials, Manufacturing and Prototype Technology Division, U.S. Army Research, Development and Engineering Center (ARDEC), Picatinny Arsenal*

### **“NASA Quality and Engineering Standards for AM Space Flight Hardware”**

**MS. KRISTIN MORGAN**

*Engineering Project Manager, Science and technology Office, NASA Marshall Space Flight Center*

### **“USMC Perspective on Additive Manufacturing Implementation”**

**LTCOL HOWARD MAROTTO, USMC**

*LPV-3, NexLog, Additive Manufacturing and Innovation*

### **“AFOSR Perspectives on AM”**

**DR. JAIMIE TILEY**

*Program Officer, Air Force Office of Scientific Research (AFOSR/RTA)*

## ***II. Breakthrough Research and Development within Additive Innovation***

### **“AM Technology at the Center for Innovative Materials Processing Through Direct Digital Deposition (CIMP-3D) at Penn State”**

**DR. EDWARD (TED) REUTZEL**

*Senior Research Associate, Center for Innovative Materials Processing through Direct Digital Deposition (CIMP-3D), Department Head, Laser System Engineering & Integration, Applied Research Lab at Penn State University (ARL Penn State)*

### **“Digitally Designing and Additive Manufacturing Custom Prosthetic Devices and Attachments to Aid in Wounded Warrior Rehabilitation”**

**DR. PETER LIACOURAS**

*Director of Services, 3D Medical Applications Center Department of Radiology, Walter Read National Military Medical Center*

## **“The Digital Thread in Additive Manufacturing (DTAM)”**

**MR. MARK VITALE**

*Specialist Leader, Deloitte Consulting LLP Federal Practice and*

**MR. JOE SCHIBI**

*Senior Consultant, Supply Chain Strategy, Deloitte Consulting LLP*

- The Digital Thread, a Single Seamless Strand of Data that Stretches from the Initial Design to the Finished Part Linking Together Disparate Applications, Printers, Processes, and Associated Data, the Digital Thread can Collect, Manage, and Analyze Valuable Information from Every Stage of the Product Lifecycle, Driving Insights for Continuous Process and Product Optimization.

## **“DOE Advanced Manufacturing Office Perspectives on AM”**

**DR. DEVANAND SHENOY**

*Advanced Manufacturing Office Chief Engineer, DOE*

### ***III. Research and Automation Advancements within Additive Manufacturing***

## **“3D Systems Metals: Accelerating Qualification Through Automated Data Systems”**

**MR. JARED BLECHER**

*Senior Metals Defense Engineer, 3D Systems*

## **“Additive Manufacturing Applied to Sikorsky Products”**

**MR. BILL HARRIS**

*Technical Fellow, Manufacturing Technology, Sikorsky, Aircraft/Lockheed Martin Corporation*

## **“Material Addition Technologies for Global Repair Technology”**

**MR. JOHN GRUBBS**

*Technical Program Manager, Rolls-Royce*

## **“Cutting-Edge Advancements in AM”**

**MS. BIANCA LANKFORD**

*Mechanical Engineer, Northrop Grumman Corporation*



**Would you like to be an exhibitor at this symposium? Host a breakfast, lunch or beverage reception during the symposium?  
Please contact Ken Hood at 310-320-8110 or hoodk@ttcus.com to find out how your organization can participate.**

# Additive Manufacturing for Defense and Government

Washington, DC

July 13-14, 2017

- Active Military     U.S. Govt Civilian     Individual  
 University     Teams 3/more

## MAILING INFORMATION

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**Registration: 8:15 a.m. July 13, 2017**  
**Program begins at 9:00 a.m.**

Washington, DC • July 13-14, 2017

## Holiday Inn Rosslyn at Key Bridge

1900 North Fort Myer Drive, Arlington, VA 22209  
Tel: (703) 807-2000 or (888) 465-4329



Complimentary hotel parking, venue close to the Rosslyn Metro.  
Ask for the Technology Training Corporation (Rate Code ILPYI).  
Rooms Based on Availability.

**Attendance is limited to US, NATO, and allied countries only.**

We reserve the right to alter the published program if necessitated by circumstances beyond our control. The material presented in this program is based on unclassified technology and unclassified technology application areas.

**ACCOMMODATIONS:** Attendee accommodations must be arranged directly with the hotel.

## REGISTRATION METHODS

**Information/Registration:** (310) 320-8110

**Register by FAX:** (310) 320-8101

**Register online:** [TechnologyTraining.com](http://TechnologyTraining.com)

**Sponsor/Exhibit Inquires:** (310) 320-8110

*Mail Registration to:* **Technology Training Corp.**

**Dept. AM-C**

**P.O. Box 119**

**Torrance, CA 90507**

## FEE:

Symposium	U.S. Government		Individual	University	Teams of 3 or More (each)
	Active Military	Civilian (Non-Contractors)			
AM-C	Complimentary	Complimentary	\$1290	\$495	\$995

*SOCO Advisory 11-02: Accordingly, the reasonable per day attendance fee for purposes of JER 3-211.a(7) is now \$675.*

Special Exhibitor and Sponsorships at Tiered Pricing (includes General Session), Contact Ken Hood at (310) 320-8110 or hoodk@ttcus.com.

**SPECIAL HARDSHIP SCHOLARSHIP PROGRAM:** A number of seats have been set aside for every seminar and symposium for any motivated attendee who is unable to attend due to severe financial limitations of his/her company or if they are under very tight military limitations. Students will be eligible for a very substantial discount.

**PAYMENT POLICY:** Payments, both domestic and international, must be received on or before the first day of the symposium. **No attendee will be admitted into the symposium without payment** by either check, credit card (VISA, Mastercard, AMEX, Discover and Diners Club accepted) **or U.S. Government purchase order.**

**CANCELLATIONS:** Substitutions may be made at any time. A cancellation service charge of \$150 will be rendered for all cancellations received fifteen days or more prior to the start of the symposium date. Registrants whose cancellation requests are not received fifteen days prior to the individual symposium, as well as no shows, are liable for the entire registration fee. You must obtain a cancellation number from our registrar.

**Tuition, symposium documentation, and refreshments, are included in the fee.**

## Why Invest Time at a Technology Training Event?

Tens of thousands of Defense, Government and Industry customers that have attended TTC programs and have benefitted by them with increased knowledge and exposure to priceless intimate networking experiences. TTC enables and thoughtfully designs programs for building those invaluable networking contacts and business exchanges. Relationships are made within an environment conducive to facilitate those sought after cordial introductions and access to key Industry and Government leaders that have proven invaluable to thousands of past attendees since our founding over 30 years ago. [www.ttus.com](http://www.ttus.com)

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