

# AERODEF 2016

WHERE COLLABORATION BEGINS

A personal, high-end experience for aerospace and defense manufacturing professionals



FEBRUARY 8-10, 2016 | EXHIBITS: FEBRUARY 9-10

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TOP-NOTCH SPEAKERS  
CUTTING-EDGE CONTENT

## KEYNOTE SPEAKERS



**NORTHROP GRUMMAN**

**Scott P. Willoughby**  
Northrop Grumman  
Aerospace Systems



**Dan G. Korte**  
LMI Aerospace



**Bryan G. Dods**  
Executive, Chief Engineer  
Manufacturing Engineering  
GE Power & Water



## PANEL DISCUSSIONS



**Dr. Leslie Cohen**  
Hitco Carbon Composites



**George B. Barnych**  
DMDII, UI Labs



**Roland Dutton**  
Air Force Research Laboratory



**Nicholas Melillo**  
Boeing Research & Technology



**John Barnes**  
ALCOA



**Mick Maher**  
DARPA



**Todd Steyer, Ph.D.**  
Boeing Research & Technology



**Richard Vaia, Ph.D.**  
Air Force Research Laboratory

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FEBRUARY 8-10, 2016 | EXHIBITS: FEBRUARY 9-10

Dear Member of the Aerospace and Defense Community:

On behalf of the AeroDef 2016 Executive Committee, I invite you to join us at the 2016 AeroDef Manufacturing Conference. This multi-level, high-end event is a must for aerospace and defense manufacturing professionals. And by registering in advance, you can get \$250 off the full conference registration fee.

AeroDef is different than other aerospace and defense events. It's a place where important connections happen, and where lucrative deals get made.

The future of our industry depends on professionals like you. By joining us at AeroDef to gather and transfer knowledge, you'll help aerospace and defense manufacturers achieve their full potential — and maintain their competitiveness in the global marketplace.

I look forward to seeing you in Long Beach in February. To take advantage of our special offer and **SAVE \$250** off the full conference registration fee, use code **BELONG** when you register.

Sincerely,



Bill Saathoff

Director, Advanced Manufacturing Technology & Development  
Lockheed Martin Aeronautics

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EXECUTIVE COMMITTEE



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# WHO WILL YOU MEET?

Join the top manufacturers in aerospace and defense



# AERODEF IS UNIQUE

Unlike any other conference available today, AeroDef 2016 offers a personal, high-end experience for aerospace and defense manufacturing professionals. We've chosen the brightest minds from the top companies in the aerospace and defense industries and created content that you can't find anywhere else. From design to production, it's the place to discover the processes, technologies and applications that lie ahead.

## As an AeroDef attendee, you'll be able to:

- Meet decision-makers and technical experts from companies who want to put the latest technology and processes to work in their organizations
- Make new contacts, or cement old ones, at scheduled one-on-one discussions or ad hoc meet-ups in technical sessions, workshops, networking events or Integrated Solution Hubs
- Hear industry leaders talk frankly about the future of the industry and your place in it

You never know who you may meet along the way: That person standing or sitting next to you may connect you with the ideas, technologies or people you need to make your vision a reality.

## KEYNOTE SPEAKERS

Selected by our Executive Committee, our keynote speakers are chosen from the highest levels of government, commercial and defense aerospace manufacturing. They're eager to share their experience, expertise and knowledge. You'll leave their presentations with key take-aways that will encourage you about the future of aerospace and defense manufacturing.



**TUESDAY, Feb. 9, 8:00 am - 8:45 am**

***NORTHROP GRUMMAN***

**Scott P. Willoughby**

Vice President & James Webb Space Telescope Program Manager  
Northrop Grumman Aerospace Systems

**Topic:** The Design, Development and Delivery of the James Webb Space Telescope



**TUESDAY, Feb. 9, 12:15 pm - 1:00 pm**



**Daniel G. Korte**

Chief Executive Officer  
LMI Aerospace

**Topic:** A View of Automation and Innovation from the Corner Office



**WEDNESDAY, Feb. 10, 8:00 am - 8:45 am**



**Bryan G. Dods**

Executive, Chief Engineer  
Manufacturing Engineering  
GE Power & Water

# LISTEN AND LEARN

Take a seat in **The Deck** and listen to our special guests talk frankly about today's challenges and tomorrow's opportunities.

## PANEL DISCUSSIONS

From data analytics for manufacturing to what the next 20 years in structural materials will look like, panel discussions are visionary as well as practical. You'll learn about groundbreaking technologies and processes that may impact the way you do business. And bring your questions so you're ready to participate in the Q & A session at the end of every discussion.

### Tuesday, Feb. 9, 8:50 am - 9:50 am

Data Analytics for Manufacturing



**Dr. Leslie Cohen**  
Senior Vice President, New Business Development & Strategic Technology  
Hitco Carbon Composites



**George B. Barnych**  
Director of R&D Programs  
Digital Manufacturing and Design  
Innovation Institute/ UI LABS



**Roland Dutton**  
Chief Manufacturing and Industrial Technologies Division  
Air Force Research Laboratory (AFRL/RXA)

### Wednesday, Feb. 10, 8:50 am - 9:50 am

The Future of Structural Materials: The 20 Year Horizon



**Nicholas Melillo**  
Senior Manager  
Boeing Research & Technology



**John Barnes**  
Vice President  
Advanced Manufacturing & Strategy  
ALCOA



**Mick Maher**  
Program Manager  
Defense Science Office  
DARPA



**Todd Steyer, Ph.D.**  
Senior Manager, Metals and Ceramics  
Technology Materials & Manufacturing  
Technology  
Boeing Research & Technology



**Richard A. Vaia, PhD**  
Technology Director  
Functional Materials Division  
Materials and Manufacturing Directorate  
Air Force Research Laboratory (AFRL/RXA)

REGISTER at [aerodefevent.com](http://aerodefevent.com) and use code: **BELONG** to **SAVE \$250** on full Conference Registration!





# 2/8

MONDAY REGISTRATION  
REGISTRATION: 8:00 am - 5:00 pm

## Workshops: 9:00 am - Noon

- ▶ Introduction to Composites
- ▶ Tooling for Composites

## Tour: 8:30 am - 11:30 am

- ▶ Coast Composites, an Ascent Tooling Group Company (Santa Ana)

## EXHIBITS CLOSED

## Workshops: 1:00 pm - 4:00 pm

- ▶ Fundamentals of Additive Manufacturing for Aerospace
- ▶ Assembly & Joining of Composite Materials

## Tour: 1:00 pm - 4:00 pm

- ▶ Boeing Network & Space Systems (El Segundo)

## THE DECK

At the center of it all is The Deck — the “main stage” for keynote speakers and panel discussions. It also functions as a central meeting place where OEMs, contract suppliers, executives, managers, directors, business owners and attendees can network with each other and hold one-on-one meetings.

### At **THE DECK**, you can:

- Hear keynote speakers address the challenges that face the extended manufacturing enterprise
- See panel discussion participants share new ways to use technology and processes
- Talk face-to-face with the people and companies who may be looking for what you have to offer



# TOURS

Pre-registration is required  
**SIGN UP TODAY**  
Space is limited

Get a behind-the-scenes look at the companies that are meeting today's technology challenges. A favorite attraction of AeroDef attendees each year, these onsite company tours are sure to fill up fast—so register now.

**MONDAY, FEBRUARY 8, 2016** – 8:30 am – 11:30 am

**COAST COMPOSITES**, an Ascent Tooling Group company – Santa Ana



Ascent Tooling Group is one of the largest independent aerospace providers of design-to-build, build-to-print, and automated tooling solutions for commercial and military aircraft fabrication, sub and final assembly. Ascent's Coast Composites manufactures metallic and composite tooling systems which are used to produce high performance composite aerospace parts and structures. With more than 20 years of tooling experience, Coast Composites is the market leader in large, complex tooling systems and has contributed to virtually every major program, including the 787, A320, A350 and F-35.

**Technologies and or processes attendees will observe on the tour include:**

- Fabrication and assembly of metallic tools
- Dedicated small-tool focused factory
- Composite tooling fabrication cell

**MONDAY, FEBRUARY 8, 2016** – 1:00 pm – 4:00 pm

**BOEING NETWORK & SPACE SYSTEMS** – El Segundo



Boeing Network & Space Systems (N&SS) in El Segundo is the largest satellite factory in the world, encompassing more than 1 million square feet of manufacturing and engineering space. In 50 years, the plant has produced satellites used for research, exploration, communication, navigation, entertainment, intelligence and surveillance. N&SS produced the first spacecraft to make a fully controlled soft landing on the moon and the first spacecraft to penetrate Jupiter's atmosphere. It also provided the radar for the Magellan spacecraft that took detailed images of Venus's surface.

The tour of N&SS will include opportunities to view numerous satellites in various stages of production in addition to the support test equipment and assets used to process space vehicles through integration and functional testing.

**REGISTER** at [aerodefevent.com](http://aerodefevent.com) and use code: **BELONG** to **SAVE \$250** on full Conference Registration!

# EXHIBITORS

3D Infotech	iBASEt
5ME LLC	Impossible Objects
Abaris Training Resources Inc	Incodema Group
Advanced Integration Technology	Indium Corporation
Aerofied Supplier Information Center	Janicki Industries Inc
Alliance For American Manufacturing	Jarvis Cutting Tools Inc
AMAMCO Tool	Keteca USA Inc
American Rotary Tools Co (ARTCO)	Kuka Systems North America
Applied Aerospace Structures Corp	L & T Precision Corporation
Assembly Guidance Systems Inc	Laserod Technologies LLC
Belden Universal	Makino Inc
Carr Lane Manufacturing Co	MAPAL Inc
CGTech	MISTRAS Group Inc
Chameleon Innovations	MTorres America
Corehog Cutting Tools	ONExia Inc
Craig Tools Inc	OPEN MIND Technologies USA Inc
DANOBAT	Origin Technologies Corp
Defense Logistics Agency	OSG USA INC.
Delta Sigma Co	Pacific Coast Composites
Design Storage & Handling Inc	Plasma Technology Inc
Designcraft Inc	Proto Labs Inc
DE-STA-CO	Quality Tech Tool Corp
Diversified Machine Systems	Racer Machinery International Inc
Dozuki	RePliForm Inc
Drake Plastics Ltd Co.	SCHUNK
Dustcontrol Inc	Siemens
Electroimpact Inc	Southwestern Industries Inc
Electron Beam Engineering Inc	Stanley Engineered Fastening
ErectaStep LLC	Stiles Machinery Inc
Essilor Prescription Safety Eyewear	Sugino Corp
Exact Metrology	Suhner Industrial Products Inc
Fagor Automation Corp	Systems & Materials Research Corporation (SMRC)
FANUC America Corp	TDK-Lambda Americas Inc
Fastems LLC	Thermal Wave Imaging Inc
Fives Machining Systems Inc	Thermwood Corp
FlackTek Inc	United Western Enterprises
Flow International Corp	Visser Precision
Fujitsu Glovia, Inc.	VISUAL ERP Software
Geometric Americas Inc	Web Industries Inc
GF Machining Solutions	West Ohio Tool Co
GPI Prototype & Manufacturing Services Inc	Wisconsin Oven Corp
Graco Inc	YG-1 Tool Co
Hangsterfer's Laboratories Inc	Zepher Inc
Hexagon Metrology Inc	Zimmermann Inc



# WORKSHOPS

AeroDef 2016 workshops are led by experts from top companies and include an introduction to composites, tooling for composites manufacturing, fundamentals of additive manufacturing for aerospace, assembly and joining of composite materials and two workshops on running your business.

## INTRODUCTION TO COMPOSITES - 9:00 am - Noon



### INSTRUCTOR: DAVE DICKSON

Associate Technical Fellow, Boeing Commercial Airplanes 


This workshop is intended as an introduction to materials and processes related to the production of parts made of composite materials. The workshop will have an emphasis on parts for aerospace applications, but will briefly cover some non-aerospace applications as well. The workshop will walk the audience through the major materials utilized – how they are made and used, primarily

focusing on carbon fiber-based materials.

## TOOLING FOR COMPOSITES MANUFACTURING - 9:00 am - Noon



### INSTRUCTOR: LOUIS DORWORTH

Division Manager, Abaris Training Resources, Inc. 

An overview of industry recognized tooling practices, this workshop will explore materials, processes, unique molding systems, and fundamental design ideas for producing quality molds, mandrels, and fixtures used to manufacture composite components and structures. During the course of the seminar, we will investigate both legacy and modern tooling systems and applications. This

session is designed to be audience-interactive, allowing attendees to ask questions and discuss ideas during the course of the presentation.

## FUNDAMENTALS OF ADDITIVE MANUFACTURING FOR AEROSPACE - 1:00 pm - 4:00 pm



### INSTRUCTOR: THOMAS HIROMOTO

Additive Manufacturing Principal Investigator, Lockheed Martin Missiles and Fire Control

This workshop will begin with background information on Additive Manufacturing (AM) including its benefits and challenges, the different polymer and metal AM processes including discussion of the characteristics of the equipment, the materials available for each process, and historical applications. Next will be a review of current applications for AM in the aerospace industry. The workshop

will then move to a discussion of emerging applications in aerospace ranging from smaller complex structures to large primary metallic structures. The workshop will conclude with a view of future needs for high-performance aerospace applications including: closed-loop process control, standards/specifications for feedstock materials and AM processes, requirements for the digital thread and supply chain, and finally improved non-destructive testing techniques.

## ASSEMBLY & JOINING OF COMPOSITE MATERIALS - 1:00 pm - 4:00 pm

### INSTRUCTOR: GEORGE N. BULLEN, CPIM



President & CEO of Smart Blades, Inc.

This workshop will address the challenges related to the assembly of composite structure and cover a broad spectrum of factors across a range of disciplines – design, manufacturing, quality and logistics. Within these disciplines, there are many elements that affect the cost and the time required to assemble composite parts and components into subassemblies and assemblies. In this workshop these factors will be addressed and their impact on fabrication and

assembly cost and schedule discussed in more detail. The context of the workshop is focused on aircraft structure, but many of the principles and ideas apply to structures in marine, transportation, energy and other industrial sectors.

2/9

TUESDAY REGISTRATION  
7:00 am - 4:00 pm

Keynote: 8:00 am - 8:45 am

The Design, Development and Delivery of the James Webb Space Telescope

Scott P. Willoughby

Vice President & James Webb Space Telescope Program Manager, Northrop Grumman Aerospace Systems

Panel Discussion: 8:50 am - 9:50 am  
Data Analytics for Manufacturing

EXHIBITS OPEN: 10 am - 5 pm

Technical Sessions: 10:00 am - Noon

Manufacturing & Repair of Composite Structures

Automated Lamination I

Additive Manufacturing Tooling I

Quality Inspection Processes

Group Luncheon | Visit the Exhibits  
Noon - 2:00 pm

Keynote: 12:15 pm - 1:00 pm

A View of Innovation and Automation from the Corner Office

Daniel G. Korte

CEO, LMI Aerospace

Technical Sessions: 2:00 pm - 4:00 pm

Innovative Applications for Composites Manufacturing

Automated Lamination II

Additive Manufacturing Tooling II

Quality in Design

Welcome Reception: 4:00 pm - 5:30 pm

Exhibit Floor

2/10

WEDNESDAY REGISTRATION  
7:00 am - 4:00 pm

Keynote: 8:00 am - 8:45 am

Bryan G. Dods

Executive, Chief Engineer  
Manufacturing Engineering  
GE Power & Water

Panel Discussion: 8:50 am - 9:50 am  
The Future of Structural Materials:  
The 20 Year Horizon

Exhibits Open: 10:00 am - 5:00 pm

Technical Sessions: 10:00 am - Noon

Manufacturing with Composites

Additive Manufacturing Applications I

Integrated Assembly I

Precision Machining & Drilling

Group Luncheon | Visit the Exhibits  
Noon - 2:00 pm

Composites Manufacturing Awards  
Presentation 12:15-1:00 pm

Technical Sessions: 2:00 pm - 4:00 pm

Tooling for Composites

Additive Manufacturing Applications II

Integrated Assembly II

Machining & Drilling of Composites



# TECHNICAL SESSIONS

Organized into four tracks over two days, technical sessions cover additive, composites, quality and aerospace manufacturing. Two full days of programming in each track are led by industry experts, not just a company representative, and they're ready to share their knowledge with you.

## CONFERENCE TRACKS

**AEROSPACE MANUFACTURING** Sessions focus on integrated assembly, precision machining, finishing, coatings and quality. Learn how advanced manufacturing techniques can help aerospace and defense suppliers meet stringent cost targets, quality requirements and time constraints for increased production.

**COMPOSITESW MANUFACTURING** Attendees will get information on the latest trends, high-performance material options and manufacturing processes that make composites popular for aerospace and defense applications. Includes introductory content as well as more advanced principles.

**ADDITIVE MANUFACTURING** This track offers you the opportunity to explore additive technologies, applications and processes—and the way they could change what and how you manufacture. Includes computer integrated technologies that design, manufacture, test and simulate together with rapid and additive technologies.

**QUALITY MANUFACTURING** Topics covered in these sessions include advanced inspections, quality control, validation methods and equipment for mission-critical operations.

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# TECHNICAL

TUESDAY | FEBRUARY 9 | 10 am - 12:00 pm

## Session: Manufacturing & Repair of Composite Structures

Chair: James Hatch, Composites Consultant

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### 10:00 am | Reducing Labor and Rework Costs with Augmented Reality

Roger Richardson, CEO, Delta Sigma Company

### 10:30 am | Hybrid Composites Using 3D Printing

David Fly, P.E., Associate Professor, University of Wisconsin

### 11:00 am | Thermoset Composite Curing: High Speed Efficiency and Precise Predictable Quality Control

James Martin, Composite Process & Business Development, Globe Machine Manufacturing Co.

### 11:30 am | Laser Bond Line Inspection

David F. Lahrman, Vice President Business Development, LSP Technologies Inc.

## Session: Automated Lamination

Chair: Carroll Grant, Aerospace Composites Consulting

### 10:00 am | Automation for Composites: Is it worth it?

Michael Muser, Composites Business Unit Manager, Ingersoll Machine

### 10:30 am | Multi-Tape Technology for Improved ATL Productivity of Large Composite Parts

Rick Copas, Senior Key Accounts Manager, MTorres America

### 11:00 am | Advancing Carbon Prepreg Material Formats for More Efficient Automated Fiber Placement and Hand Lay-up Assembly

Dan Ott, Director of Business Development and Jim Powers, Business Development Manager, Web Industries

### 11:30 am | Robots Mainstream in Composites Manufacturing Automation for Aircraft Fuselage Stiffeners & Frames

Tim Olschewski, Project Manager & Lead Engineer, Orbital ATK

## Session: Additive Manufacturing Tooling I

Chair: Richard Lofland, President, Richard Lofland & Associates

### 10:00 am | Design Guide Development for Additive Manufacturing of Composite Tooling

David Dahl, Applications Engineer, Stratasys, Inc.

### 10:30 am | Continuous Fiber Additive Manufacturing

Riley Reese, Co-founder, Engineering, Arevo Labs

### 11:00 am | Characteristics of New Hybrid Additive & Subtractive Machine Tool Technology

Robb Hudson, Key Account & Business Development Manager, Mitsui Seiki USA, Inc.

### 11:30 am | Large Scale Polymer Additive Manufacturing Applications for Tooling

Michael Kline, Applications Engineer, Lockheed Martin Aeronautics Company

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## Session: Quality Inspection Processes

Chair: Jim Fisher, Director of Operations, NCDMM

### 10:00 am | Matrix Transducer Ultrasound Camera and Scalable NDT Solutions

Jan Olav Endrerud, CEO, Dophitech

### 10:30 am | Quality at the Source: Shifting a Culture Towards Defect Prevention

Javier Cervantes, Engineering & Quality Manager, General Dynamics

### 11:00 am | Process Capability Analysis in the Supply Chain

Matt Savage, Support & Training Director, PQ Systems

### 11:30 am | Inspection Techniques for Verifying Surface Preparation Processes in Bonded Aircraft Manufacturing and Repair

Steven Twaddle, Materials Engineer, Lockheed Martin Aeronautics Company



# SESSIONS

TUESDAY | FEBRUARY 9 | 2:00 PM-4:00 PM

## Session: Innovative Applications for Composite Manufacturing

Chair: Robin Zwick, Manufacturing Engineer, The Boeing Company

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### 2:00 pm | Environmental, Health, & Safety Impact from Increased Use of High Strength Composite Materials for Manufacturing Parts

George Bullen, FSME, CPIM, President & CEO, Smart Blades, Inc.

### 2:30 pm | Novel Forming Methods for Two Developmental Composite Structures

Steve Parsons, Fellow, Manufacturing Technology, Lockheed Martin Aeronautics Company

### 3:00 pm | Optimization of the Manufacturing Processes for Composite Acoustic Panels

Jarrold Ridge, Manager, Business Development, Royal Engineered Composites

### 3:30 pm | From the Ground Up: A Maintainer's Perspective on Designing for Composite Supportability

Greg Mellema, A&P/I.A., Adjunct Assistant Professor, Embry-Riddle Worldwide

## Session: Automated Lamination II

Chair: Carroll Grant, Aerospace Marketing Contractor, Aerospace Composites Consulting

### 2:00 pm | Dry Fabric Preform Automated Lay-Up Processes for Composite Aircraft Structures

Asier Gandarias Mintegi, Business Development, Danobat

### 2:30 pm | Increased AFP Cell Performance by Working with Existing AFP Processes

Todd Rudberg, Senior Engineer, Electroimpact

### 3:00 pm | Leveraging Software Solutions to Optimize Composites Producability via AFP

Burak Uzman, USA Representative, Coriolis Composites

### 3:30 pm | Product & Process: The Function of Material Width in Process Selection

Jim Hecht, Director, Fives Machining Systems, Inc.

## Session: Additive Manufacturing Tooling II

Chair: Dan Sanders, Senior Technical Fellow, Boeing Research & Technology

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### 2:00 pm | 3D Printing is Rapid Manufacturing for Cast Metal Parts

Steven Murray, Additive Manufacturing Consultant, Hoosier Pattern

### 2:30 pm | Acceleration of the Adoption of 3D Printing in the Metalcasting Industry

Brandon Lamoncha, Project Manager, Humtown Products

### 3:00 pm | Using Biomimicry to Enhance Direct Metal Tooling for Injection Molds

Bob Bechtold, President, HARBEC

### 3:30 pm | Taking 3D Printing to Finished Parts, Using Multi-Material 3D Printing

Daniel Oliver, Co-Founder & Business Lead, Voxel8

## Session: Quality in Design

### 2:00 pm | Improving Fuel Efficiency in Aircraft Using Dimensional Management of Gap and Flush Conditions

Donald Jasurda, Vice President of Sales, Dimensional Control Systems, Inc.

### 2:30 pm | Quality, Measurement & Inspection

Bob Matthew, President, Quality Engineering Management Inc.

### 3:00 pm | Non-Contact Metrology for Aerospace Applications

Devin Grande, Applications Engineer, Lockheed Martin Aeronautics Company

### 3:30 pm | Conceptual Model of a Manufacturing Data Management System

Erdal Tekin, Chief Specialist, Information Management Systems, TAI - Turkish Aerospace Industries

# TECHNICAL

WEDNESDAY | FEBRUARY 10 | 10:00 AM-12:00 PM

## Session: Precision Machining & Drilling

Chair: Tyler Krauch, Manufacturing Engineer, The Boeing Company

### 10:00 am | Be Ready to Produce Production Parts Prior to New CNC Machine Delivery

Jim Huddy, National Sales Manager, CGTech

### 10:30 am | Cryogenic Machining for Titanium

Jeff Langevin, Applications Engineer Staff, Lockheed Martin Aeronautics Company

### 11:00 am | Advances in Precision Machining with Abrasive Waterjets

Mohamed Hashish, PhD, Senior Technology Fellow, Flow International Corp.

### 11:30 am | Additive Manufacture of Gears for Efficient Production

Mike Fish, Co-Director, Dontyne Systems

## Session: Manufacturing with Composites

Chair: Steve Parsons, Fellow, Lockheed Martin Aeronautics Company

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### 10:00 am | Dimensions on Day One for Complex Composite Parts

Denise Shimazu, Manufacturing Technology, Northrop Grumman

### 10:30 am | Solution for High Precision Machining of Very Large Parts with Low CTE

Mario LaFleur, Technical Director, Fives Line Machines, Inc.

### 11:00 am | On Demand Prepreg: Your Materials, Your Way

Keith McConnell, President, Century Design Inc.

### 11:30 am | Accurate Robot System with Multiple Composite Processes

Dan Wells and Adam Walker, Mechanical Engineers, Electroimpact, Inc.

## Session: Additive Manufacturing Applications I

Chair: Bob Pickell, Senior Manufacturing Engineer, Boeing Research & Technology

### 10:00 am | Additive Manufacturing Using Coaxial Wire and Powder Based Laser Direct Metal Deposition

Sandro Mehner, Project Engineer, Center for Laser Applications, Fraunhofer USA

### 10:30 am | Additively Manufactured Cellular Structures for Blast and Impact Protection

Jonathan Harris, PhD Candidate, University of Cambridge

### 11:00 am | America Makes Electron Beam Melted Ti-6Al-4V Additive Manufacturing Demonstration and Allowables Development Project

Eric Fodran, Manufacturing Engineer and Michael DeVito, Manufacturing Engineer, Northrop Grumman Aerospace Systems

### 11:30 am | Outstanding Innovation: Composite Based Additive Manufacturing (CBAM)

Jeff DeGrange, Chief Commercial Officer, Impossible Objects

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## Session: Integrated Assembly I

Chair: John Wang, Senior Manager, The Boeing Company and Vu Pham, Senior Materials & Processes Engineer, Boeing Research & Technology

### 10:00 am | Digital Manufacturing Instructions Using Optical Projection

Joseph Festa, Manufacturing Engineer, Advanced Manufacturing Technologies, Northrop Grumman Aerospace Systems

### 10:30 am | Automation for Families of Parts

George Bullen, FSME, CPIM, President & CEO, Smart Blades, Inc.

### 11:00 am | V-280 Fuselage-Production Quality in a Prototype Environment

Chris Boshers, Chief Engineer, Spirit AeroSystems

### 11:30 am | Laser Ablation of Metallic Structure on the F-35 Program

Michael Stoddard, Applications Engineer, Lockheed Martin Aeronautics Company

# SESSIONS

WEDNESDAY | FEBRUARY 10 | 2:00 PM-4:00 PM

## Session: Machining & Drilling of Composites

Chair: George Bullen, FSME, CPIM, President & CEO, Smart Blades, Inc.

### 2:00 pm | Investigation of Advanced Hard Coatings for the Protection of Cemented Carbides in Drilling CFRP-Ti Stacks

Samuel Swan, BSME, Graduate Teaching Assistant, Washington State University - Vancouver

### 2:30 pm | High Productivity/Quality Composite Machining Enabled by Physics-Based Machining Models

Troy Marusich, Ph.D., P.E., Senior Technical Director, Third Wave Systems

### 3:00 pm | Milling High Speed vs. Surface Finish in Composites

Scott Daggett, National Aerospace Specialist, OSG USA, INC.

### 3:30 pm | TBD

## Session: Tooling for Composites

Chair: Dave Dickson, Associate Technical Fellow, The Boeing Company

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### 2:00 pm | Rapid Reverse Engineering for Large Scale Metal Tooling

James Diedesch, BSIT METM, Sr. Manufacturing Engineer – Lead, Janicki Industries

### 2:30 pm | Washout Tooling Made with Binder Jetting Additive Manufacturing

Jesse Blacker, Product Development Manager, The ExOne Company

### 3:00 pm | Closed Volume Molding (CVM) Pre-Preg Composites

Alan Dressel, Applications Engineer Staff, Lockheed Martin Aeronautics Company

### 3:30 pm | The Industrial Internet of Things (IIoT) Optimizes Composite Part Manufacturing

Avner Ben-Bassat, President & CEO, Plataine Ltd.

## Session: Additive Manufacturing Applications II

Chair: Dan Sanders, Senior Technical Fellow, Boeing Research & Technology

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### 2:00 pm | From Racetrack to Orbit: An Additive Revolution

Stewart Davis, Director of Operations, CRP USA

### 2:30 pm | Additive Manufacturing at Sea in the Arctic

Ronald Adrezin, Ph.D., P.E., Professor of Mechanical Engineering, U.S. Coast Guard Academy

### 3:00 pm | 3D Printing: Using Cutting Edge Technology to Cut Costs, Improve Strength and Maintain Fit in Prosthetics and Orthotics

Thomas Most, Lead CAD Operator, Digital Fabrication

### 3:30 pm | Additive Manufacturing Hardware Applied on Manned Spaceflight

Youping Gao, Fellow & Discipline Chief, Manufacturing Engineering, Aerojet Rocketdyne

## Integrated Assembly II

Chair: Robin Zwick, Manufacturing Engineer, The Boeing Company

### 2:00 pm | Non-Contact Holistic Measurement of Aerospace Fastener Holes with Ring Laser Adaptive Optics

Dr. Harris Bergman, Vice President, Engineering Innovation, United Sciences

### 2:30 pm | Sealant Application Tooling

Christopher Ingham, Mechanical Engineer, Systems & Materials Research Corporation (SMRC)

### 3:00 pm | Future Force-How to Deploy Large-Scale Information to the Workforce

Roger Richardson, CEO, Delta Sigma Company

### 3:30 pm | Advanced Automation and Digitalization

John Billings, Vice President of Aerospace, Siemens Industry, Inc.

We've worked closely with members of the **AeroDef** and **Composites 2016** Conference Advisory Committees—who understand the challenges you face—to define and redefine this year's conference.

# THE BEST CHOSEN

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Composites Manufacturing Conference Advisors



**Vern Benson**  
Associate Technical  
Fellow  
The Boeing Company



**Dave Dickson**  
Associate Technical  
Fellow  
The Boeing Company



**Louis Dorworth**  
Manager, Direct Services  
Division  
Abaris Training  
Resources, Inc.



**Carroll Grant**  
Independent Contractor  
Aerospace Composites  
Consulting



**Robert Harper**  
Director  
Fives Machining  
Systems, Inc.



**Jim Hatch**  
Composite Consultant



**Randy Kappesser**  
Strategic Leader, New  
Product Introduction  
Value Stream  
GE Aviation



**Richard Lofland**  
President  
Richard Lofland and  
Associates



**Robert Pickell**  
Senior Manufacturing &  
Process Engineer  
Boeing Research &  
Technology



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**Todd Szallay**  
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**John Wang**  
Senior Manager  
Systems Integration  
& Test, Satellite  
Development Center  
The Boeing Company

# BY THE BEST



# PRICING INFORMATION

Conference Pre-Registration Discounts ends 01/11/16	SME / Abaris Members	Non Members	Academia Government/Military* (15% discount on conference pricing after Jan 11)		FULL-TIME Students** (50% discount on conference pricing after Jan 11)	
Exhibit Floor Only <b>FREE BEFORE</b> February 5	\$0	\$0	\$0		\$0	
Exhibit Floor Only <b>AFTER</b> February 5	\$0	\$50	\$50		\$0	
Tours	\$95	\$95	\$95		\$95	
Workshops	\$200	\$200	\$200		\$200	
Full Conference <b>BEFORE January 11</b> <b>EARLY BIRD DISCOUNT</b> <b>Save \$250!</b>	\$500	\$600	Member \$500	Nonmember \$600	Member \$325	Nonmember \$375
Full Conference <b>AFTER January 11</b>	\$750	\$850	\$637.50/\$722.50		\$375/\$425	
One Day Conference THRU January 11	\$350	\$400	297.50/\$340		\$175/\$200	
One Day Conference <b>AFTER January 11</b>	\$400	\$450	\$340/\$382.50		\$200/\$225	
Full Conference Pass Plus 1 Workshop <b>BEFORE January 11</b> <b>EARLY BIRD DISCOUNT</b> <b>Save an additional \$100!</b>	\$600	\$700	Member \$600	Nonmember \$700	Member \$375	Nonmember \$425
Full Conference Pass Plus 1 Workshop <b>AFTER January 11</b>	\$850	\$950	\$722.50 / \$807.50		\$425 / \$475	
One-Day Conference Pass Plus 1 Workshop <b>BEFORE January 11</b>	\$500	\$550	\$425 / \$467.50		\$250 / \$275	
One-Day Conference Pass Plus 1 Workshop <b>AFTER January 11</b>	\$550	\$600	\$467.50 / \$510		\$275 / \$300	
Exhibits Plus THRU January 11	\$150	\$150	\$150		\$150	
Exhibits Plus <b>AFTER January 11</b>	\$200	\$200	\$200		\$200	

\*ACADEMIC, MILITARY & GOVERNMENT PRICING: To qualify for the reduced rate you must submit a letter on appropriate military/government letterhead signed by your Commanding Officer or supervisor to the [SME Registrar](#). Educators may submit either a letter on university letterhead signed by the dean or registrar confirming status or a class schedule inclusive of the institution/year/instructor.

\*\*FULL-TIME STUDENTS: To qualify for student rates, submit a letter on university letterhead signed by the dean or registrar confirming full-time student status or provide a copy of your student I.D. to the [SME Registrar](#).

**REGISTER** at [AERODEFEVENT.COM](#) and use code: **BELONG** to **SAVE \$250** on full Conference Registration!



# NETWORKING RECEPTION

Tuesday, February 9

4:00 pm – 5:30 pm

Our Networking Reception takes place at the The Deck on the event floor and includes free drinks and hors d'oeuvres. We make it easy for you to talk face-to-face with technology providers, connect with like-minded professionals and engage with other attendees and companies that are most relevant to you.



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# TOP-NOTCH SPEAKERS CUTTING-EDGE CONTENT

## KEYNOTE SPEAKERS

	<b>NORTHROP GRUMMAN</b> ▶ <b>Scott P. Willoughby</b> Northrop Grumman Aerospace Systems
	 ▶ <b>Dan G. Korte</b> LMI Aerospace
	 ▶ <b>Bryan G. Dods</b> Executive, Chief Engineer Manufacturing Engineering GE Power & Water

## PANEL DISCUSSIONS

	▶ <b>Dr. Leslie Cohen</b> Hitco Carbon Composites
	▶ <b>George B. Barnych</b> DMDII, UI Labs
	▶ <b>Roland Dutton</b> Air Force Research Laboratory
	▶ <b>Nicholas Melillo</b> Boeing Research & Technology
	▶ <b>John Barnes</b> ALCOA
	▶ <b>Mick Maher</b> DARPA
	▶ <b>Todd Steyer, Ph.D.</b> Boeing Research & Technology
	▶ <b>Richard Vaia, Ph.D.</b> Air Force Research Laboratory



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