

Advisory Group & Working Group Charters

INTRODUCTION

America Makes has a number of Advisory Groups within its domain. Some of these Advisory Groups (AG) have Working Groups (WG) that have very specific focus areas that report back to the Advisory Group.

This document showcases all of the AG and WG and allows the reader to understand which WG is working under the broader umbrella of which AG.

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CHARTER

Platinum Members Advisory Group

PURPOSE

The Purpose of the Platinum Members Advisory Group is to bring together a group of members that encompass a vast understanding of the America Makes Program and the America Makes membership benefits and values, as well as to collaborate with them and to gather their perspective and advice to further support the ongoing and future efforts of the America Makes Program.

OBJECTIVES

The Platinum Members Advisory Group will:

- Provide a forum for surfacing issues of concern and recommendations to enhance the effectiveness of America Makes as the National Additive Manufacturing Innovation Institute
- Promote the long-term sustainability of America Makes
- Meet monthly via teleconference hosted by America Makes starting in May 2015
- Meet face-to-face at America Makes semi-annual Program Review and Members Meetings

CRITICAL ISSUES

- America Makes membership growth and sustainment
- Long-term financial sustainability of America Makes
- Platinum membership satisfaction

INTERFACES

- America Makes Executive Director
- America Makes Membership Director
- America Makes Governance Board and Executive Committee Chair
- AFRL America Makes Program Manager

ADVISORY GROUP LEADERS

- Sponsor - Rob Gorham (America Makes)
- Facilitator -Tiffany Westbay (America Makes)

ADVISORY GROUP MEMBERS

- 3D Systems Corporation
- Air Force Research Laboratory
- AlphaStar Corporation
- ANSYS, Inc.
- Autodesk, Inc.
- Boeing Company
- Deloitte Consulting, LLC.
- EOS North America
- International TechneGroup Incorporated
- Iowa State University of Science and Technology
- Johnson & Johnson Global Supply Chain
- Lockheed Martin
- Meggitt Aircraft Braking Systems
- North Carolina State University
- Northrop Grumman
- Oerlikon Metco (US) Inc.
- Optomec Inc.
- Oxford Performance Materials
- Raytheon
- Siemens Corporation.
- Stratasys Inc.
- Stratonics, Inc.
- The Lanterman Group
- United Technologies Corporation
- University of Dayton Research Institute
- University of Northern Iowa
- University of Texas at El Paso
- Wohlers Associates, Inc.



CHARTER

Roadmap Advisory Group

PURPOSE

The Purpose of the Roadmap Advisory Group is to provide a holistic perspective representing multiple industries, applications, and customers for the maturation and implementation of the National Additive Manufacturing and 3D Printing Roadmap and Investment Strategy.

The Roadmap Advisory Group will work together with the America Makes Technology Director to analyze the priorities of stakeholder needs and functional requirements to set appropriate technology investment goals for funding partners.

OBJECTIVES

The Roadmap Advisory Group will advise the America Makes stakeholders and partners about key aspects of AM / 3DP through:

- Proposing, evaluating, and endorsing roadmap topics and sub-topics
- Leading “feasibility and impact analysis studies” that surface and link stakeholder functional requirements to funding partner(s)
- Fostering the identification of common technical and industrial challenges overarching many or all constituents and establishing appropriate technology investment goals
- Balancing value diversity across the membership
- Recommending and encouraging the adoption of future technologies and directions
- Facilitating conflict resolution and community development within America Makes through roadmap dissemination
- Releasing bi-annual updates to the National Additive Manufacturing and 3D Printing Roadmap and Investment Strategy

CRITICAL ISSUES

- Competitive barriers
- Role realization (technologies and partners)
- Duplication of federal investments
- Lack of successful transition(s) beyond funded participants
- Lack of standards and common data schemas

INTERFACES

- Executive Committee
- Technical Advisory Board
- Education and Workforce Development

ADVISORY GROUP LEADERS

- Chair – Dr. Teresa Clement (Raytheon)
- Co-Chair – Shawn Moylan (NIST)
- Sponsor – John Wilczynski (America Makes)

ADVISORY GROUP MEMBERS

- Air Force Research Laboratory
- Deloitte Consulting, LLC.
- EWI
- GKN Aerospace
- Lockheed Martin
- NIST - National Institute of Standards and Technology
- Northern Illinois University - College of Engineering & Engineering Technology
- Northrop Grumman
- Raytheon
- UL (Underwriters Laboratories)
- United Technologies Corporation

CHARTER

Additive Manufacturing Standards Collaborative Advisory Group

PURPOSE

The Purpose of the Additive Manufacturing Standards Collaborative Advisory Group is to lead America Makes' efforts to coordinate, accelerate, and prioritize the development and availability of additive manufacturing standards, specs, and data schemas for use by government and industry in the United States.

Membership is limited to America Makes members and Government participants. Lead strategy, internal, and external engagement.

OBJECTIVES

The Additive Manufacturing Standards Collaborative Advisory Group will:

- Provide advice to America Makes leadership and members regarding the coordination of standards, specs, and data schemas that meet the needs of the additive manufacturing community
- Develop and implement sound technical approaches to accelerate the development and availability of additive manufacturing standards, specs, and data schemas for the user community
- Establish and provide coordination and guidance as needed for working groups tasked to address specific issues facing the additive manufacturing community
- Establish and oversee an Additive Manufacturing Standards and Specs Coordination Working Group
- Establish and oversee an Additive Manufacturing Data Schemas Coordination Working Group

CRITICAL ISSUES

- The development of standards and specifications within the additive manufacturing community has been slow and disorganized.
- A standard set of data schemas and a common framework including templates for additive manufacturing technical data do not exist.
- Additive manufacturing data requirements from various agencies for funded projects lack definition and commonality.

INTERFACES

- Standards Developing Organizations (SDOs)
- Additive Manufacturing Data Repositories

ADVISORY GROUP LEADERS

- Chair – Jesse Boyer (Pratt & Whitney)
- Sponsor – Rob Gorham (America Makes)

ADVISORY GROUP MEMBERS

- All Points Additive
- ANSI
- Department of Defense
- Department of Energy
- Federal Aviation Administration
- Food & Drug Administration
- NASA
- NIST - National Institute of Standards and Technology
- Penn State University

CHARTER

Workforce & Education Advisory Group

PURPOSE

The Purpose of the Workforce & Education Advisory Group - representing industry, government, and academia - is to contribute to a national perspective for the implementation of the National Additive Manufacturing Innovation Institute Workforce & Education Strategy. The Advisory Group will work together with the America Makes Workforce & Education Coordinator to analyze institute and stakeholder interests, opportunities, and requirements in order to establish and prioritize appropriate workforce and educational outreach goals.

OBJECTIVES

The Workforce & Education Advisory Group will advise the America Makes Deputy Director, as well as key stakeholders and members, regarding key direction for additive manufacturing education:

- Ensuring that Workforce & Education needs of all constituent members are considered
- Providing input and oversight for Workforce & Education strategy development
- Proposing, evaluating, and endorsing Workforce & Education priorities, tasks, and sub-tasks
- Supporting, promoting, and offering feedback on specific Workforce & Education initiatives
- Providing advocacy and leveraging support for Workforce & Education activities
- Leading frequent updates to the National Additive Manufacturing Workforce & Education Strategy by targeting new audiences, introducing new learning techniques, and including new subject matter

INTERFACES

- Executive Committee
- Technical Advisory Board
- Technology Development

CRITICAL ISSUES

- Additive manufacturing technology is dynamic and continually changing.
- Few additive manufacturing textbook or comprehensive educational programs exist.
- Many of the careers enabled by additive manufacturing do not yet exist.
- Workforce & Education must enable growth in both existing and emerging new businesses.
- Curriculum is fragmented, inconsistent, isolated, and not coalesced.
- Isolated educational content development efforts are not efficient and will slow adoption of additive manufacturing.
- America Makes is unable to effectively capture and leverage significant educational initiatives outside our purview.

ADVISORY GROUP LEADERS

- Chair – Tracy Green (LCCC)
- Sponsor – Vicki Thompson (America Makes)

ADVISORY GROUP MEMBERS

- ASM International
- ASME
- Department of Education
- Lockheed Martin
- NCATC
- NIST - National Institute of Standards and Technology
- NSF
- Penn State University
- Robert C. Byrd Institute (RCBI)
- SME
- Strataysys Inc.
- Youngstown State University

EXECUTIVE COMMITTEE: WORKING GROUP

CHARTER

Additive Manufacturing Maintenance & Sustainment Working Group

PURPOSE

The Purpose of the Additive Manufacturing Maintenance & Sustainment Working Group is to accelerate the productive use of additive manufacturing for commercial and government (DoD, DoE, NASA, FAA, etc.) equipment maintenance and sustainment. Benefits sought are increased operational availability and decreased time for maintenance, and lower recurring and non-recurring costs for equipment maintenance and sustainment.

OBJECTIVES

Focusing specifically on the use of additive manufacturing for maintenance and sustainment of commercial and defense equipment, the working group will:

- Promote collaboration amongst the additive manufacturing and maintenance & sustainment communities
- Provide a forum for surfacing common issues
- Develop a methodology for identifying and sharing best practices, tools, insights, and lessons learned
- Provide maintenance and sustainment lessons learned for future designs using additive manufacturing through the ManTech organizations to the appropriate life-cycle/design authority
- Connect expertise, identify potential solutions to common technical and management needs, and foster innovation
- Provide a forum to coordinate shared R&D funding and minimize duplications of effort
- Coordinate efforts with external stakeholder organizations
- Provide input to the America Makes Roadmap Advisory Group
- Meet monthly via teleconference

CRITICAL ISSUES

- There is a lack of specifications and standards addressing the use of additive manufacturing for maintenance and sustainment of commercial and defense equipment.
- Opportunity to accelerate the use of additively manufactured tools for maintenance and sustainment actions is needed.
- The industry needs processes, procedures and equipment to use additive manufacturing for maintenance and sustainment.
- The U.S. needs workforce education on the use of additive manufacturing for maintenance and sustainment.
- There is potential for inappropriate or improper use of additive manufacturing to repair/replace safety critical items.
- We do not have a clear method of storage and retrieval of additive manufacturing repair processes, including proprietary processes.

INTERFACES

- America Makes Executive Committee
- America Makes Management Team
- America Makes Government Program Manager
- America Makes Roadmap Advisory Group
- DoD Additive Manufacturing for Maintenance Operations (AMMO) Working Group
- DoD OSD Maintenance Policy and Programs
- DoE Advanced Mfg Office
- FAA
- NASA
- Standards Developing Organizations

WORKING GROUP LEADERS

- Chair – Marilyn Gaska (Lockheed Martin)
- Vice Chair – Dana Ellis (NCMS)
- Secretary – Rich Lonardo (Youngstown Business Incubator)
- Sponsor – Dave Siddle (America Makes)

ROADMAP ADVISORY GROUP: WORKING GROUP



CHARTER

Design Working Group

PURPOSE

The Purpose of the Design Working Group is to provide a holistic perspective representing multiple industries, applications, and customers for the maturation and implementation of the Design swim lane within the National Additive Manufacturing and 3D Printing Roadmap and Investment Strategy.

The Design Working Group will work together with the America Makes Roadmap Advisory Group to analyze the priorities of stakeholder needs and functional requirements to set appropriate technology investment goals within the Design swim lane for funding partners.

OBJECTIVES

The Design Working Group will advise the Roadmap Advisory Group about key aspects of Design for AM / 3DP through:

- Proposing, evaluating, and endorsing swim lane topics (critical technology elements) and sub-topics
- Leading technology development roadmap 'workshops' to identify technology barriers and maturation requirements
- Fostering the identification of common technical and industrial challenges overarching many or all constituents and establishing appropriate technology investment goals
- Balancing value diversity across the membership
- Recommending and encouraging the adoption of future technologies and directions
- Tracking progress of technology development projects to ensure deliverables align to the maturation requirements

CRITICAL ISSUES

- Competitive barriers
- Lack of successful transition(s) beyond funded participants
- Lack of process for interfacing with non-America Makes project managers

WORKING GROUP LEADERS

- Chair – Pedro Gonzalez (Northrop Grumman)
- Sponsor – Shawn Nesmith (America Makes)

ROADMAP ADVISORY GROUP: WORKING GROUP



CHARTER

Process Working Group

PURPOSE

The Purpose of the Process Working Group is to provide a holistic perspective representing multiple industries, applications, and customers for the maturation and implementation of the Process swim lane within the National Additive Manufacturing and 3D Printing Roadmap and Investment Strategy.

The Process Working Group will work together with the America Makes Roadmap Advisory Group to analyze the priorities of stakeholder needs and functional requirements to set appropriate technology investment goals within the Process swim lane for funding partners.

OBJECTIVES

The Process Working Group will advise the Roadmap Advisory Group about key aspects of Process for AM / 3DP through:

- Proposing, evaluating, and endorsing swim lane topics (critical technology elements) and sub-topics
- Leading technology development roadmap 'workshops' to identify technology barriers and maturation requirements
- Fostering the identification of common technical and industrial challenges overarching many or all constituents and establishing appropriate technology investment goals
- Balancing value diversity across the membership
- Recommending and encouraging the adoption of future technologies and directions
- Tracking progress of technology development projects to ensure deliverables align to the maturation requirements

CRITICAL ISSUES

- Competitive barriers
- Lack of successful transition(s) beyond funded participants
- Lack of process for interfacing with non-America Makes project managers

WORKING GROUP LEADERS

- Chair – Brian Thompson (GE Additive)
- Sponsor – Scott Crynock (America Makes)

ROADMAP ADVISORY GROUP: WORKING GROUP



CHARTER

Materials Working Group

PURPOSE

The Purpose of the Materials Working Group is to provide a holistic perspective representing multiple industries, applications, and customers for the maturation and implementation of the Materials swim lane within the National Additive Manufacturing and 3D Printing Roadmap and Investment Strategy.

The Materials Working Group will work together with the America Makes Roadmap Advisory Group to analyze the priorities of stakeholder needs and functional requirements to set appropriate technology investment goals within the Materials swim lane for funding partners.

OBJECTIVES

The Materials Working Group will advise the Roadmap Advisory Group about key aspects of Materials for AM / 3DP through:

- Proposing, evaluating, and endorsing swim lane topics (critical technology elements) and sub-topics
- Leading technology development roadmap 'workshops' to identify technology barriers and maturation requirements
- Fostering the identification of common technical and industrial challenges overarching many or all constituents and establishing appropriate technology investment goals
- Balancing value diversity across the membership
- Recommending and encouraging the adoption of future technologies and directions
- Tracking progress of technology development projects to ensure deliverables align to the maturation requirements

CRITICAL ISSUES

- Competitive barriers
- Lack of successful transition(s) beyond funded participants
- Lack of process for interfacing with non-America Makes project managers

WORKING GROUP LEADERS

- Chair – Dr. Teresa Clement (Raytheon)
- Sponsor – Ed Nemeth (America Makes)

ROADMAP ADVISORY GROUP: WORKING GROUP



CHARTER

Value Chain Working Group

PURPOSE

The Purpose of the Value Chain Working Group is to provide a holistic perspective representing multiple industries, applications, and customers for the maturation and implementation of the Value Chain swim lane within the National Additive Manufacturing and 3D Printing Roadmap and Investment Strategy.

The Value Chain Working Group will work together with the America Makes Roadmap Advisory Group to analyze the priorities of stakeholder needs and functional requirements to set appropriate technology investment goals within the Value Chain swim lane for funding partners.

OBJECTIVES

The Value Chain Working Group will advise the Roadmap Advisory Group about key aspects of Value Chain for AM / 3DP through:

- Proposing, evaluating, and endorsing swim lane topics (critical technology elements) and sub-topics
- Leading technology development roadmap 'workshops' to identify technology barriers and maturation requirements
- Fostering the identification of common technical and industrial challenges overarching many or all constituents and establishing appropriate technology investment goals
- Balancing value diversity across the membership
- Recommending and encouraging the adoption of future technologies and directions
- Tracking progress of technology development projects to ensure deliverables align to the maturation requirements

CRITICAL ISSUES

- Competitive barriers
- Lack of successful transition(s) beyond funded participants
- Lack of process for interfacing with non-America Makes project managers

WORKING GROUP LEADERS

- Chair – Federico Sciammarella (Northern Illinois University)
- Sponsor – Dave Siddle (America Makes)

ROADMAP ADVISORY GROUP: WORKING GROUP



CHARTER

AM Genome Working Group

PURPOSE

The Purpose of the AM Genome Working Group is to provide a holistic perspective representing multiple industries, applications, and customers for the maturation and implementation of the AM Genome swim lane within the National Additive Manufacturing and 3D Printing Roadmap and Investment Strategy.

The AM Genome Working Group will work together with the America Makes Roadmap Advisory Group to analyze the priorities of stakeholder needs and functional requirements to set appropriate technology investment goals within the AM Genome swim lane for funding partners.

OBJECTIVES

The AM Genome Working Group will advise the Roadmap Advisory Group about key aspects of AM Genome for AM / 3DP through:

- Proposing, evaluating, and endorsing swim lane topics (critical technology elements) and sub-topics
- Leading technology development roadmap 'workshops' to identify technology barriers and maturation requirements
- Fostering the identification of common technical and industrial challenges overarching many or all constituents and establishing appropriate technology investment goals
- Balancing value diversity across the membership
- Recommending and encouraging the adoption of future technologies and directions
- Tracking progress of technology development projects to ensure deliverables align to the maturation requirements

CRITICAL ISSUES

- Competitive barriers
- Lack of successful transition(s) beyond funded participants
- Lack of process for interfacing with non-America Makes project managers

WORKING GROUP LEADERS

- Chair – Craig Brice (Lockheed Martin)
- Sponsor – Ed Nemeth (America Makes)