

# An Introduction to America Makes and Our Efforts in Large Scale AM for Near Net Shape Applications

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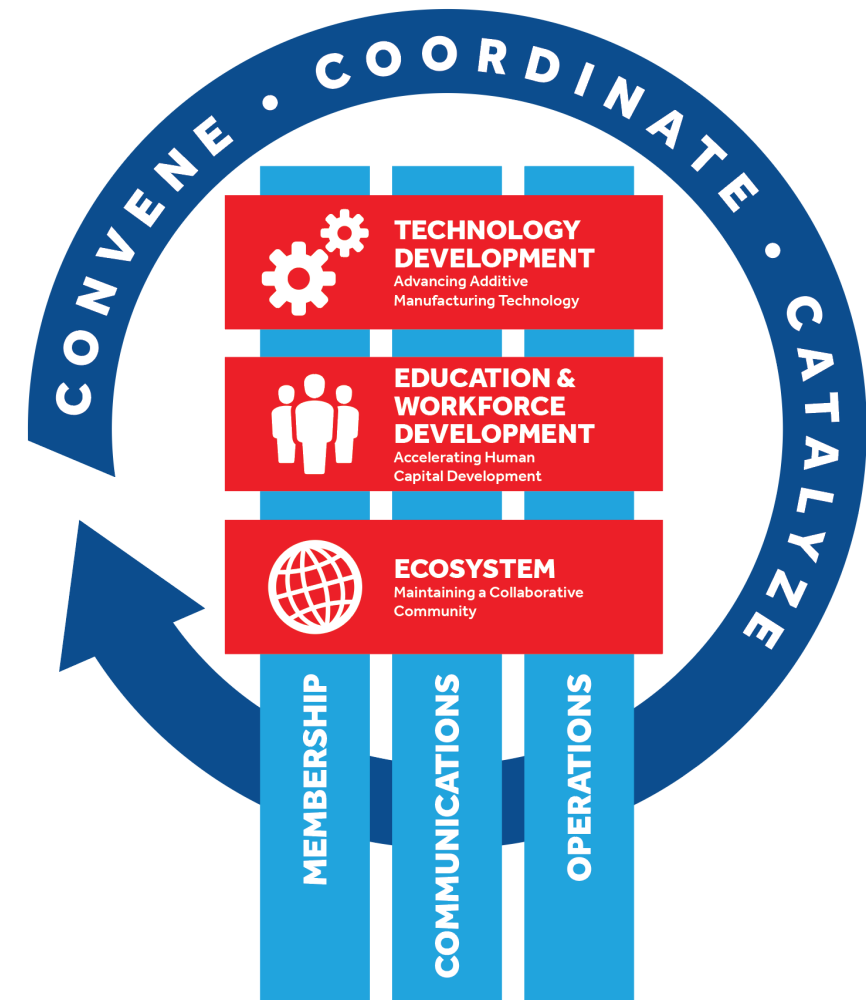
# Overview

*The three core activities of the Institute are:*

- **Develop Additive Manufacturing Technology:**  
Projects, Innovation, Technology Transfer, Implementation
- **Accelerate Human Capital Development:**  
Workforce, Education, Training, Outreach
- **Maintain Collaborative Ecosystem:**  
Government, Membership, Community

*These focus areas are enabled by:*

- **Membership:** Driving engagement and collaboration with our nation's brilliant minds from government, industry and academia to advance Additive Manufacturing
- **Communications:** Driving awareness and spreading the word to government, members, stakeholders, community
- **Operations:** Run by a not-for-profit organization with a lean and collaborative structure



# Technology Advancement and Collaboration through Partnership

- Coordinating known stakeholder needs
  - Unique by member type
  - Academia, Industry, Gov't, Non-profit, National Labs
  
- Establishing priorities
  - Defining gaps and opportunities
  - Milestone, objective, and requirement-based approaches
  - Leveraging diverse expertise to target benefits and impact
  
- Leveraging collective intelligence/capabilities for applied learning
  - Execution mechanism
  - Many similarities to supply chain development



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# Large Scale AM for Near Net Shape Applications

- **Current Efforts**
  - PBF; EB and Laser DED; WAAM
  - Hybrid AM – Additive/Subtractive
  - Materials – metals, polymers, composites
  - Applications – end products, tooling/manufacturing aids
  - Material and process qualification focused
  
- **Current Challenges/Future Opportunities**
  - Industry specific opportunities – Space, Aviation, Oil/Gas, Energy, Defense
  - Cost and rate understood – productivity at industrially relevant production volumes
  - Geometric management – distortion management from a design and processing perspective
  - Range of materials systems developed and available (compatibility)
  - Supply chain readiness and enabling manufacturing operations (practice)
  - Predictability
  - Post-processing
  - Inspection
  - Sub-system; system level performance demonstrated and understood – certification specific needs
  - Standards

# When America Makes America Works



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