

3D Aerospace & Defense Additive Manufacturing Symposium



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Advanced Tissue Biofabrication Manufacturing Innovation Institute

THRUST AREA OVERVIEW



- **Cell & Material Selection & Sourcing:** standardization of starting materials, post-delivery assurance of tissue identity, viability, function and efficacy
- **Biofabrication Platforms:** transform standardized starting materials into novel and evolving tissue and tissue-related end-products
- **Process Design and Automation:** improve the scale, throughput, automation, and reproducibility of engineered tissues
- **Tissue Finishing and Testing Technologies:** non-destructive or minimally destructive test/sensors, real-time monitoring/sensing technologies



ATB-MII: DoD Interest

Advance state-of-the-art medical technology for warfighter readiness and care

- Reducing the reliance on humans as test subjects (tissue on a chip)
- Develop scale up technologies for any material based on cells (not just regenerative medicine)
- Create and define new in-process testing technologies for living cell manufacturing that can lead to downstream diagnostic imaging techniques
- Quality systems that take advantage of artificial intelligence technologies (improved cell and material characterizations and library of interactions for common use)



Summary: A U.S. Game Changing Opportunity

- Establish a presence, at scale, of advanced manufacturing research
- Create an Industrial Commons, supporting future manufacturing hubs, with active partnering between all stakeholders
- Emphasize/support longer-term investments by industry
- Combine R&D with workforce development and training
- ***Overarching Objective: Unleash new U.S. advanced manufacturing capabilities and industries – for stronger global competitiveness and U.S. economic & national security***



One Goal

