



Title: Workshop on Characterization of Fiber-Based Scaffolds

Sponsored by ARMI | BioFabUSA & ASTM with participation from Standards Coordinating Body

When: 9am – 5pm, August 10, 2018

Where: Technology Center Auditorium, 400 Commercial Street, Manchester, NH 03101

Goal: Hold a 1-day workshop to discuss characterization of fiber-based scaffolds.

Summary: We will hold a 1-day workshop on measurement needs for fiber-scaffolds. At a 2013 ASTM workshop on measurements standards for scaffold it was determined that the major measurement needs were 1) structural, 2) mechanical and 3) biological (Simon et al. J Biomed Mater Res: Part B, 103B, 949-959, 2015). Fiber-based scaffolds are being widely advanced in tissue engineering for a wide variety of applications. The morning will have talks on fiber-based scaffold characterization, batch to batch variability, measurement validation and release criteria. In the afternoon, we will hold two Moderated Discussions that each focuses on a particular measurement identified by the stakeholders as “in need of improvement”. There will also be a computer-poster-networking-session in the afternoon. We will conclude with a summary discussion and will consider the formation of working groups to address the issues identified, possibly through the ASTM standards development process.

Potential Outcomes:

- Report that summarizes the findings for publication in the archival literature
- Results from stakeholder discussions of measurements “most in need of improvement”
- Formation of a working group to write an ASTM Standard Guide for Characterizing Fiber-Based Scaffolds
- Formation of working groups to address specific measurements

Agenda	
9:00 - 9:15	Welcome, Opening Remarks, Becky Robinson-Zeigler (ARMI), Carl Simon (NIST)
9:15 - 9:40	Talk #1: Michael Yaszemski, Mayo Clinic, “Clinically Relevant Scaffold Specifications to Ensure Desirable Patient Outcomes”
9:40 - 10:05	Talk #2: Alex Meltzer, DiPole Materials, “Standardized Scaffolds Through the Development of Relevant Specifications”
10:05 - 10:30	Talk #3: Luca Cera, Harvard, “Rapid manufacturing of biohybrid fibrous scaffolds for biomimetic heart valve replacement”
10:30 - 10:45	Break
10:45 - 11:10	Talk #4: Jayesh Doshi, eSpin, “Characterization of Fiber-Based Scaffolds”
11:10 - 11:35	Talk #5: Michael Francis, Embody LLC, “Clinical Translation of Engineered Microfibrous Collagen-Containing Grafts”
11:35 - 12:00	Talk #6: Seth McCullen, Poly-Med, Inc., “Fiber-based scaffold characterization for medical devices: development, implementation, and utilization of image-based test methods”
12:00 - 1:00	Lunch
1:00 - 1:10	Responses from stakeholders for “measurements most in need of improvement” (Carl Simon)
1:10 - 1:25	Porosity Introduction Discussion Leaders: Thomas Bollenbach (ARMI), Markus Reiterer (Medtronic)
1:25 - 1:40	Diffusivity Introduction Discussion Leaders: Esmail Jabbari (S. Carolina Univ.), Ramon Montero (Akron Biotech), Hai Yao (Clemson)
1:40 - 2:55	Concurrent Breakout Sessions
	Measurement #1: Porosity (break into 2 or 3 small groups) Measurement #2: Diffusivity (break into 2 or 3 small groups)
2:55 - 3:35	Networking computer-poster session
3:35 - 4:05	Report-out for Porosity
4:05 - 4:35	Report-out for Diffusivity
4:35 - 5:00	Discussion & Wrap-Up: workshop report, ASTM standards, formation of working groups
5:00	Adjourn