

# Ninth Symposium on Biologic Scaffolds for Regenerative Medicine

\*\*\* Final Program \*\*\*

## Day 1: April 28, 2016 (Thursday)

6:00 – 8:00 pm Registration Silverado East Foyer

Reception Fairway Deck

## Day 2: April 29, 2016 (Friday)

7:00 – 8:00 am Breakfast Fairway Deck

### Welcome

8:00 – 8:05 am Stephen F. Badylak, DVM, PhD, MD  
*University of Pittsburgh* Silverado East

### Keynote Address

8:05 – 8:40 am Robert M. Nerem, PhD  
*Georgia Institute of Technology* Regenerative Medicine: Harnessing the  
Intrinsic Power of the Human Body

**Session I: Biologic Scaffold for Cardiac Reconstruction**  
**Chair:** Karen L. Christman, PhD, FAHA (*University of California, San Diego*)

8:40 – 9:15 am Frederick J. Schoen, MD, PhD  
*Brigham and Women's Hospital and  
Harvard Medical School* Role of Matrix and Cell Dynamics in Heart  
Valve Health and Disease

9:15 – 9:45 am Robert Matheny, MD, FACS  
*CorMatrix Cardiovascular, Inc.* Development of a SIS Regenerative Heart  
Valve; From Benchtop to Clinical Trial

9:45 – 10:05 am Dan T. Simionescu, PhD  
*Clemson University* Development of Chemically Stabilized  
Acellular Cardiac Valve Scaffolds and in  
Vivo Testing in a Sheep Right Ventricular  
Outflow Tract Model

10:05 – 10:25 am Lauren D. Black III, PhD  
*Tufts University* Acellular Cardiac Extracellular Matrix-Silk  
Patches for Cardiac Repair Post-Myocardial  
Infarction

10:25 – 10:45 am Break Fairway Deck

**Session II: Biologic Scaffolds for Plastic and Reconstructive Surgery**  
**Chair:** George Hussey, PhD (*University of Pittsburgh*)

10:45 – 11:05 am Robert G. Martindale, MD, PhD  
*Oregon Health & Science University* Metabolic End Products of Absorbable  
Bioscaffolds in Soft Tissue Repair; Are They  
Helping or Hurting Us?

11:05 – 11:25 am Anders Sandin, MD  
*Queen Silvias Childrens Hospital* Use of Biodesign® after Chest Wall  
Resection in Children: Our Experience in  
Two Cases

11:25 – 11:45 am D. Adam Young, PhD  
*ACell, Inc.* The Use of Urinary Bladder Matrix for Body  
Wall Repair in Multiple Preclinical Models

11:45 – 12:05 pm Nicholas C. Pashos, BS  
*Tulane University School of Medicine* Characterization of a Biologically Derived  
Graft for Nipple-Areolar Complex  
Reconstruction

12:05 – 12:25 pm Kristen Jones, MD  
*University of Minnesota* Neuroprotective Potential of Biologic  
Scaffolds in Acute Stroke and Human  
Translational Feasibility: A Neurosurgeon's  
Perspective

12:25 – 1:45 pm	Lunch	Fairway Deck
<b>Session III:</b>	<b>Mechanisms by Which ECM Scaffolds Influence Cell Behavior and the Associated Clinical Implications</b>	
	<b>Chair:</b> Arnold I. Caplan, PhD ( <i>Case Western Reserve University</i> )	
1:45 – 2:05 pm	Karen L. Christman, PhD, FAHA <i>University of California, San Diego</i>	Mechanisms of Action of a Myocardial Matrix Hydrogel for Treating Myocardial Infarction
2:05 – 2:25 pm	Inkyung Kang, PhD <i>Benaroya Research Institute at Virginia Mason</i>	A Role for Versican in Engineered Tissues: Modulating Elasticity and Inflammation
2:25 – 2:45 pm	David M. Adelman, MD, PhD, FACS <i>The University of Texas MD Anderson Cancer Center</i>	Defining the Device to Tissue Transition in Fetal Bovine Acellular Dermal Matrix
2:45 – 3:05 pm	George S. Hussey, PhD <i>University of Pittsburgh</i>	A Novel Bioactive Component of Biologic Scaffolds: Implications for Tissue Repair and Regeneration
3:05 – 3:25 pm	Break	Fairway Deck
<b>Session IV:</b>	<b>Some Basic Concepts of ECM and ECM Bioscaffolds</b>	
	<b>Chair:</b> Laura E Niklason, MD, PhD ( <i>Yale University</i> )	
3:25 – 3:45 pm	Robert Mecham, PhD <i>Washington University School of Medicine</i>	Extracellular Matrix Organization and Function
3:45 – 4:05 pm	Cyrus Ghajar, PhD <i>Fred Hutchinson Cancer Research Center</i>	Where the Wild Things Are: Perivascular Regulation of Disseminated Tumor Cell Dormancy and Chemoresistance.
4:05 – 4:25 pm	Matthew T. Wolf, PhD <i>Johns Hopkins University</i>	Urinary Bladder Extracellular Matrix Inhibits Tumor Formation
4:25 – 4:45 pm	Arnold I. Caplan, PhD <i>Case Western Reserve University</i>	MSCs: How They Work and Why (Some Surprises)
4:45 – 5:05 pm	Nikhil Gheewala, PhD <i>ACell, Inc.</i>	Developing a Standard Approach to Evaluating the Decellularization of Biomaterial ECMs
5:05 pm	Adjourn	
6:00 – 7:30 pm	Poster Session & Wine Reception	Fairway Deck

## Day 3: April 30, 2016 (Saturday)

7:00 – 8:00 am	Breakfast	Fairway Deck
<b>Welcome</b>		
8:00 – 8:05 am	Stephen F. Badylak, DVM, PhD, MD <i>University of Pittsburgh</i>	Silverado East
<b>Keynote Address</b>		
8:05 – 8:40 am	Laura E Niklason, MD, PhD <i>Yale University</i>	The Agony and the Ecstasy of Getting into the Clinic
<b>Session V:</b>	<b>Cell:Matrix Interactions and Clinical Relevance</b>	
	<b>Chair:</b> Robert Mecham, PhD ( <i>Washington University School of Medicine</i> )	
8:40 – 9:05 am	Nadia Rosenthal, PhD, FMedSci, FAAHMS <i>The Jackson Laboratory, Bar Harbor</i> <i>Imperial College London, UK</i>	Immune Control of Cardiac Repair

9:05 – 9:30 am	Jeffrey M. Davidson, PhD <i>Vanderbilt University Medical Center</i>	Multiscale Properties of ECM Scaffolds
9:30 – 9:55 am	C. James Kirkpatrick MD, PhD, DSc, FRCPath <i>Johannes Gutenberg University, Germany &amp; University of Gothenburg, Sweden</i>	Developing in Vitro & in Vivo Models to Study Tissue Reactions to Biologic Scaffolds
9:55 – 10:30 am	Break	Fairway Deck
<b>Session VI:</b>	<b>Role of the Macrophage in Bioscaffold Induced Tissue Reconstruction</b>	
	<b>Chair:</b> Charles D. Mills, PhD ( <i>BioMedical Consultants</i> )	
10:30 – 10:50 am	Charles D. Mills, PhD <i>BioMedical Consultants</i>	Macrophages. The Chicken and the Egg in Immune Responses to Injury or Biologic Scaffolds
10:40 – 11:00 am	Kaitlyn Sadtler, BS <i>Johns Hopkins University</i>	Th2 T Cells are Required for Extracellular Matrix-Mediated Functional Muscle Regeneration
11:00 – 11:20 am	Hui Li, PhD <i>Life Cell Corporation-Acelity</i>	Macrophage Phenotype Profile Regulated by Tissue Matrices for Screening of Biomaterials
11:20 – 11:40 am	Samuel T. LoPresti, BS <i>University of Pittsburgh</i>	Effect of Source Animal Age upon Macrophage Response to ECM Scaffolds
11:40 – 12:00 pm	Wendy F. Liu, PhD <i>University of California, Irvine</i>	Regulation of Macrophage Function by Engineered Biopolymer Scaffolds
12:00 – 1:20 pm	Lunch	Fairway Deck
<b>Session VII:</b>	<b>Biologic Scaffolds for CNS, Whole Organ, Skin, and Cartilage Reconstruction</b>	
	<b>Chair:</b> Bryan N. Brown, PhD ( <i>University of Pittsburgh</i> )	
1:20 – 1:40 pm	Jenna Dziki, BS <i>University of Pittsburgh</i>	Biologic Scaffold Treatment for Volumetric Muscle Loss: Results of a Thirteen Patient Cohort Study
1:40 – 2:00 pm	Hilton Kaplan, MBBCh, FCCSA, PhD <i>Rutgers University</i>	Decellularized Allogeneic Neurovascular Bundles for Reinnervation and Revascularization in Soft and Hard Tissue Reconstruction, the Rehabilitation of Massive Scarring, and Engineered Tissues
2:00 – 2:20 pm	Jeff Ross, PhD <i>Miromatrix Medical Inc.</i>	Engineering a Clinically Relevant Transplantable Liver with Sustained In-Vivo Perfusion
2:20 – 2:40 pm	Karthikeyan Narayanan, PhD <i>Institute of Bioengineering and Nanotechnology, Singapore</i>	Decellularized Organs: Whole Organ Construction with Stem Cells
2:40 – 3:00 pm	Ian L. Valerio, MD, MS, MBA <i>Ohio State University Wexner Medical Center</i>	Application of Bioartificial Dermal Regeneration Templates for Skin Restoration in Combat Casualty Injuries
3:00 – 3:20 pm	Byoung-Hyun Min, MD, PhD <i>Ajou University Hospital</i>	Biomembrane from Porcine Cartilage Extracellular Matrix Contributes Enhancement of Efficacy of Microfracture for Cartilage Repair- Clinical Results Followed up 1 Year Postoperatively
3:20 – 3:45 pm	Break	Fairway Deck
<b>Session VIII:</b>	<b>ECM Structure-Function Relationships and Clinical Implications of the Immune Response</b>	
	<b>Chair:</b> C. James Kirkpatrick MD, PhD, DSc, FRCPath ( <i>Johannes Gutenberg University, Germany &amp; University of Gothenburg, Sweden</i> )	

3:45 – 4:05 pm	Kenneth Burhop, PhD <i>Integra LifeSciences</i>	Collagen Matrix: Structure & Function - Translating to New Opportunities in Regenerative Medicine
4:05 – 4:25 pm	Inna Kornienko, MS <i>Moscow Institute of Physics and Technology</i>	Low-Immunogenic Matrix Suitable for Transplantation
4:25 – 4:50 pm	Bryan N. Brown, PhD <i>University of Pittsburgh</i>	A Macrophage Centric Approach to the Evaluation of ECM Scaffolds for Tissue Reconstruction
4:50 – 5:00 pm	Stephen F. Badyak, DVM, PhD, MD <i>University of Pittsburgh</i>	Closing Remarks & Adjourn

