

ASMB Biennial Meeting ♦ September 12-15, 2021
Hyatt Regency St. Louis Arch
St. Louis, MO

**“The Matrix in Focus:
Matrix, Cells, and Interactions in Health, Disease, Aging, and Regeneration”**

Meeting Chair: Jeffrey Miner, *Washington University in St. Louis*

DRAFT PROGRAM 7/21/2021

Sunday, September 12th

9:00am - 6:00pm Registration

Location: Grand Foyer

10:00am - 12:00pm Special Sessions

**Special Interest Session 1: Multiple Functions
of the ECM in Glaucoma**

Location: Grand ABC

Co-Chairs, Kate E. Keller, PhD, Oregon
Health & Science University and Donna M.
Peters, PhD University of Wisconsin-
Madison.

Poster Flash Talks

Location: Grand D

Highly recognized abstracts that were not
selected for a concurrent session will be
presented in this fast-paced forum.

**Guest Symposium I: The Histochemical
Society: ECM in the time of COVID**

Location: Grand E

**The Interactome of Glycosaminoglycans:
from Interactions to Functions**, Sylvie
Ricard-Blum, *University Lyon, Institute of
Molecular and Supramolecular Chemistry
and Biochemistry*

**The Indispensable Role of ECM
Proteolysis in Embryogenesis**, Suneel Apte,
Cleveland Clinic Lerner Research Institute

**New Tricks for an Old Dog – Complement
as Regulator of Normal Cell Physiology**,
Claudia Kemper, *DIR, NHLBI, NIH*

12:00-6:00pm Exhibits

Location: Grand Foyer

12:00-1:00pm Break – Lunch on Your Own

12:00-1:00pm Networking Brown Bag

*Bring your own lunch and join an informal
discussion group!*

1:00-2:30pm Concurrent Sessions

Concurrent 1: Fibroblasts & ECM Remodeling

Location: Grand ABC

**Cardiac Fibroblasts: Purveyors of Ventricular
Stiffness**, Amy Bradshaw, *Medical University of
South Carolina*

Plus 4 selected talks from abstracts

**Concurrent 2: Game of Bones: ECM & Skeletal
Biology**

Location: Grand D

**Global Knockout Mouse Models Reveal
Cooperative Effects of Thrombospondins 1
and 2 on Bone Cell Physiology**, Andrea Alford,
University of Michigan

Plus 4 selected talks from abstracts

Concurrent 3: Basement Membranes and Disease

Location: Grand E

**Therapeutic Implications of Mechanistic
Heterogeneity in Patients with COL4A1 and
COL4A2 Mutations**, Douglas Gould, *University
of California, San Francisco*

Plus 4 selected talks from abstracts

2:30-2:45pm Break

Location: Grand Foyer

2:45-4:15pm Concurrent Sessions

SIS 2: Not Just Tissue Inhibitors of Metalloproteinases (TIMPs), David Peeney, National Cancer Institute

Location: Grand ABC

All virtual speakers include:

Rama Khokha, University of Toronto, Canada

Achim Krüger, Technische Universität München, Munich, Germany

Dimitra Bourboulia Upstate Medical University, Syracuse, NY

Sean E. Gill, University of Western Ontario, Canada

Concurrent 4: Elastic Fibers

Location: Grand D

Elastic Fibers and Arterial Mechanics, Jessica Wagenseil, Washington University in St. Louis

Plus 4 selected talks from abstracts

Concurrent 5: Mechanisms of Fibrosis

Location: Grand E

Cellular and Molecular Regulation of Matrix Protein Production, Valerie Horsley, Yale University

Plus 4 selected talks from abstracts

4:15-4:30pm Break

Location: Grand Foyer

4:30-6:00pm President's Welcome & Award Talks

Location: Grand D-E

4:30pm **Junior Investigator Awardee**

Colloidal-based Materials for Investigating and Controlling Cell Migration and Wound Healing, Ashley Brown, North Carolina State University and University of North Carolina at Chapel Hill

5:00pm **Iozzo Award Winner**

Elastin, Arterial Mechanics, and Stenosis, Jessica Wagenseil, Washington University in St. Louis

5:30pm **Senior Investigator Awardee**
Proteolytic Pathways in Immunity, William Parks, Cedars-Sinai Medical Center

6:00-7:00pm Welcome Reception

Location: Grand Foyer

7:00-7:15pm Founders Award Talk

Location: Grand D-E

Hierarchical extracellular mechanisms regulating vascular integrity, Heena Kumra, McGill University

7:15-8:00pm Keynote Lecture

Location: Grand D-E

Cell-Matrix Dynamics: Past and Future, Kenneth Yamada, National Institutes of Health/National Institute of Dental and Craniofacial Research

Monday, September 13th

7:15-8:30am Career Mentoring Breakfast

Discussion begins at 7:30am

Location: Mills Room TBD

7:30am-5:30pm Registration and Exhibits

Location: Grand Foyer

7:30-8:30am Breakfast

Location: Grand Foyer

8:30-10:00am Plenary I: Stem Cells, Organogenesis, and Regeneration

Location: Grand D-E

Skeletal Stem Cells in the Growth Plate: Deeply Embedded in the Niche, Noriaki Ono, *University of Michigan*

Adventures in Asymmetry: Transcriptional Control and ECM Interactions During Gut Morphogenesis, Natasza Kurpios, *Cornell University*

Injectable ECM Hydrogels for Regenerative Engineering, Karen L. Christman, *University of California, San Diego*

10:00-10:30am Coffee Break

Location: Grand Foyer

10:30am-12:00pm Plenary II: Let's Not Forget the Microenvironment

Location: Grand D-E

Unraveling Disease Mechanisms Using Human Pluripotent Stem Cell Organoid Models for Cartilage and Kidney Development, Sue Kimber, *University of Manchester*

Multiple Roles of Tenascin-C in Cancer Progression, Gertraud Orend, *INSERM, Strasbourg*

Tumor ECM Remodeling to Facilitate Metastasis, Greg Longmore, *Washington University in St. Louis*

12:00-12:30pm ASMB Special Presentation

Location: Grand D-E

12:30-2:30pm Poster Session I

Location: Grand FGH and Park View
Odd Number Boards Present

2:30-4:00pm Concurrent Sessions

Concurrent 6: Matricellular Proteins
Location: Grand ABC

At the Nexus of Contraction and Matrix Synthesis: Periostin as a Modulator of Soft Tissue Repair, Douglas Hamilton, *University of Western Ontario*

Plus 4 selected talks from abstracts

Concurrent 7: Mechanobiology
Location: Grand D

Biochemical and Biophysical Regulation of Integrin-mediated Adhesion Initiation to Fibronectin, Nico Strohmeyer, *ETH Zurich*

Plus 4 selected talks from abstracts

Concurrent 8: Genetics of Connective Tissue Disorders
Location: Grand E

Genetic Variants, Aortic Dissection, and Receptor-Matrix Interactions, Dianna M. Milewicz, *The University of Texas Health Science Center at Houston, McGovern Medical School*

Plus 4 selected talks from abstracts

4:00-4:30pm Coffee Break
Location: Grand Foyer

4:30-6:00pm Concurrent Sessions

Concurrent 9: Therapeutic Targeting of Matrix
Location: Grand ABC

Pseudoachondroplasia/COMPopathy: Stressful disorder, Jacqueline Hecht, *The University of Texas Health Science Center at Houston, McGovern Medical School*

Plus 4 selected talks from abstracts

Special Interest Session 2: Novel Regulators of Vascular Remodeling and Matrix Assembly
Location: Grand D

Discussion Leader & Chair: Matthew Scott, *LSUHSC Shreveport*

Disruption of the Extracellular Matrix Activates Focal Adhesion Signaling and Leads to Acute Aortic Dissections, Zhen Zhou, McGovern
Medical School: The University of Texas Health Science Center at Houston, Department of Internal Medicine | Division of Medical Genetics

The aortic aneurysm degradome and the substrates of MMP9 and mast cell chymase in aortic disease, Daniel Martin, *Department of Biomedical Engineering, Lerner Research Institute, Cleveland Clinic*

Smooth muscle cell subpopulations and neointimal formation in mouse models of elastin insufficiency, Chien-Jung Li, *Cardiovascular Division, Barnes-Jewish Hospital, Washington University at St. Louis*

Concurrent 10: Matrix Proteases: Chop ‘til They Drop
Location: Grand E

Membrane-Anchored Matrix Metalloproteinases & the Pathophysiologic Remodeling of the Extracellular Matrix, Stephen Weiss, *University of Michigan*

Plus 4 selected talks from abstracts

Tuesday, September 14th

7:15-8:30am Career Mentoring Breakfast
Discussion begins at 7:30am
Location: Mills Room TBD

7:30am-5:30pm Registration and Exhibits
Location: Grand Foyer

7:30-8:30am Breakfast
Location: Grand Foyer

8:30-9:30am Plenary III:
Matrix, Infection, & Metabolism
Location: Grand D-E

Anne Woods Memorial: Joanne Murphy-Ullrich, *ASMB Past-President*

Syndecan Interactions in Innate Immunity and Gram+ Infections, Pyong Woo Park, *Boston Children's Hospital and Harvard Medical School*

Cell-mediated Collagen Degradation in Homeostasis and Disease, Kamran Atabai, *University of California, San Francisco*

9:30-10:15am ISMB Distinguished Investigator Award Presentation
Location: Grand D-E

All Matrix Is Local: Why Cells Make What They Do, Robert Mecham, *Washington University School of Medicine*

10:15-10:30am Coffee Break
Location: Grand Foyer

10:30-12:00pm Plenary IV: Little Guys, Big Questions- Matrix in Model Organisms
Location: Grand D-E

Basement Membrane Dynamics in Homeostasis and Repair, Andrea Page-McCaw, *Vanderbilt University*

A Basement Membrane Toolkit in the Worm: Formation, Growth, and Moving Matrix Components Revealed, David Sherwood, *Duke University*

Lizard Tail Regeneration As an Instructive Model of Enhanced Healing Capabilities in an Adult Amniote, Thomas Lozito, *University of Southern California Keck School of Medicine*

12:00-12:30pm ASMB Business Meeting
Location: Grand D-E

12:30-2:30pm Poster Session II
Location: Grand FGH and Park View
Even Number Boards Present

2:30-4:00pm Concurrent Sessions
Concurrent 11: ECM Changes with Aging

Location: Grand ABC

Catching Pressure: Collagen and Glaucoma,
Ian Sigal, *University of Pittsburgh School of
Medicine*

Plus 4 selected talks from abstracts

Concurrent 12: Cell Migration through ECM

Location: Grand D

**Live Imaging of the Inflammatory Response
and Its Consequences in Wound Repair and
Cancer,** Paul Martin, *University of Bristol*

Plus 4 selected talks from abstracts

**Guest Symposium II: Tissue Engineering
International and Regenerative Medicine
Society (TERMIS) Americas**

Location: Grand E

Organizers: Thomas Barker and Riccardo Gottardi

4:00-4:30pm Coffee Break

Location: Grand Foyer

4:30-6:00pm Concurrent Sessions

**Concurrent 13: Home is Where the Matrix is:
Stem Cell Niches**

Location: Grand ABC

**Controlling the Cytoskeleton to Build a Better
Pancreas,** Jeffrey Millman, *Washington
University in St. Louis*

Plus 4 selected talks from abstracts

**Concurrent 14: Structural Aspects of ECM,
Receptors, & Adhesion**

Location: Grand D

**Structural Mechanism of Laminin
Recognition by Integrins,** Junichi Takagi,
Osaka University

Plus 4 selected talks from abstracts

Concurrent 15: Proteoglycans & Glycobiology

Location: Grand E

**Cell Surface Hyaluronan Degradation and
Cell Behavior,** Yu Yamaguchi, *Sanford
Burnham Medical Discovery Institute*

Plus 4 selected talks from abstracts

**7:00-11:00pm Social Event – Ballpark
Village Crown Room (All are invited!)**

Wednesday, September 15th

8:00am-12:00pm Registration

Location: Grand Foyer

8:00am-11:00am Exhibits

Location: Grand Foyer

7:30-8:30am Breakfast

Location: Grand Foyer

**8:30-9:30am Iozzo Trainee Award
Finalists' Presentations**

3-6 talks from selected abstracts

Location: Grand D-E

9:30-9:45am Break

**9:45-11:15am Plenary V:
Mechanotransduction: Biology Meets
Engineering**

Location: Grand D-E

**Three-dimensional Tunable Collagen-
fibronectin Scaffolds for Cancer Research,**
Delphine Gourdon, *University of Glasgow*

**Myofibroblast Matrix – Memory, Mechanics,
and Mechanisms,** Boris Hinz, *University of
Toronto*

Matrix Mechanics in Cancer Progression,
Cynthia Reinhart-King, *Vanderbilt University*

Announcement of Iozzo Trainee Awards

11:15-11:30am

Coffee Break

Location: Grand Foyer

Quantifying 3D Collagen-fiber Organization,
Kimani Toussaint, *Brown University*

11:30am -1:00pm

Concurrent Sessions

Plus 4 selected talks from abstracts

Concurrent 16: Cardiovascular Biology & ECM Remodeling

Location: Grand ABC

Role of Disintegrin and Metalloproteinases (ADAMs) in Fibroblast Function and Fibrosis in Heart Disease, Zamaneh Kassiri, *University of Alberta*

Plus 4 selected talks from abstracts

**Special Interest Session 3:
ECM Characterization Modalities**

Location: Grand D

Organizers: Lauren Schmitt and Maxwell McCabe, *University of Colorado Anschutz Medical Campus*

Conformation of Integrin Binding Domain of Fibronectin Affects Fibroblasts Behavior, Leandro Moretti, *University of Virginia*

Updates to Matrisome DB, Alexandra Naba, *University of Illinois at Chicago*

Human-mouse cross-species xenograft proteomics/ProteoClade, Jason Held, *Washington University School of Medicine, St. Louis*

Multiplex IHC for ECM Proteins, Alexandra Quackenbush, *Oregon Health & Science University* [VIRTUAL](#)

Comparative Evaluation of Proteomic Methods for ECM Characterization, Lauren Schmitt & Max McCabe, *University of Colorado Anschutz Medical Campus*

Concurrent 17: Collagens & Friends

Location: Grand E