ASMB Biennial Meeting ♦ October 14-17, 2018
Red Rock Canyon
Las Vegas, NV

“ECM Microenvironments in Disease, Aging and Regeneration”
Meeting Chair: Lynn Sakai, Shriners Hospital for Children and Oregon Health & Science University

**Sunday, October 14**

**9:00am -6:00 pm** Registration
*Location: Summerlin Foyer*

**10:00am -12:00 pm** Guest Symposium I
*(TERMIS)*
*Location: Summerlin D*

*Chairs:* Adam Engler, *University of California San Diego* and Thomas Barker, *University of Virginia*

10:00am Opening Remarks

10:15am *Rediscovering the Interstitium: The Effect of Tissue Fixation and Processing on the Extracellular Matrix,* Stephen Hewitt, *National Cancer Institute, NIH*

10:40am *Advances in digital imaging and microscopy that allow for better imaging of the extracellular matrix (ECM),* Paul Goodwin, *AppliedPrecision/GE*

11:05am *Quantitative analysis of the ECM using special stains, immunohistochemistry, and quantitative digital pathology,* Chuck Frevert, *University of Washington*

11:40am Panel Discussion

**10:00am -12:00 pm** Guest Symposium II
*(Histochemical Society)*
*Imagining the Matrix – Just Do it Right*
*Location: Summerlin E*

*Chairs:* Lilliana Schaefer, *Goethe Universität* and Charles Frevert, *University of Washington*

10:00am *Introduction: The relevance of histochemistry and immunohistochemistry in the era of “Omics”*

10:15am *3D collagen fibril architecture regulates cancer migration and morphogenesis,* Stephanie Fraley, *University of California San Diego*

10:50am *The extracellular matrix dictates cellular force generation through tropomyosin-dependent mechanisms,* Ryan J. Petrie, *Drexel University*

11:25am *Regulation of Endothelial Cell Function and Fate using the Extracellular Matrix,* Ngan F. Huang, *Stanford University*

**10:00 am -12:00 pm** Guest Symposium III
*(Alport Syndrome)*
*Location: Summerlin F*

*Chair:* Jeffrey Miner, Washington University School of Medicine, St. Louis

10:00 am *Biochemical Mechanisms of Collagen IV Assembly,* Gautam Jay Bhave, *Vanderbilt University Medical Center, Nashville*

10:30 am *Proteomics of the Glomerular Basement Membrane in Alport Syndrome,* Rachel Lennon, *University of Manchester*

11:00 am *Targeting the Activin Receptor to Slow Progression of Alport Syndrome,* Keith Hruska, *Washington University School of Medicine, St. Louis*

11:30am 2 selected talks from abstracts

**12:00-6:00 pm** Exhibits
*Location: Veranda OR Sumerlin A-B-C*
12:00-1:00 pm  Break – Lunch on your own

1:00-2:30 pm  Concurrent Sessions

Concurrent 1: Matricellular Proteins
Location: Summerlin D
Chair: Olga Stenina-Adognra, Cleveland Clinic

1:00 pm  Thrombospondins in Tissue Remodeling,
Olga Stenina-Adognra, Cleveland Clinic

4 selected talks from abstracts

Concurrent 2: Proteoglycans
Location: Summerlin E
Chair: Liliana Schaefer, Goethe University, Frankfurt/Main, Germany

1:00 pm  Proteoglycan Signaling at the Crossroads,
Liliana Schaefer, Goethe University, Frankfurt/Main, Germany

4 selected talks from abstracts

Concurrent 3: Collagens
Location: Summerlin F
Chair: Sergei Budko, Vanderbilt Medical Center

1:00 pm  Collagen IV Assembly Mechanisms,
Sergei Budko, Vanderbilt Medical Center

4 selected talks from abstracts

2:30-2:45 pm  Break
Location: Veranda

2:45-4:15 pm  Concurrent Sessions

SIS 1: Trainee Led Session: Extracellular Vesicles- The next SMALL thing
*Session Sponsored by Bio-Tech
Location: Summerlin D
Organizer: Shyam Kumar Bandari, University of Alabama at Birmingham

2:45 pm  Inflaming the masses: Glioma exosomes promote inflammatory response in normal brain,
Michael W Graner, University of Colorado Denver

3:05pm  PMN-derived exosomes are new pathogenic entities in COPD lung disease,
Amit Gaggar, University of Alabama at Birmingham

3:25pm  Tumor Exosomes: From Mediators of Systemic Disease to Biomarkers of Metastatic Spread, Irina Matei, Druker Institute for Children's Health and Meyer Cancer Center

3:45pm  Exosomes in Fibronectin matrix organization, Merlyn Emmanuel, Vanderbilt University School of Medicine

4:00pm  Chemoexosomes secreted by myeloma cells enhance osteoclast formation and promote aggressive myeloma bone disease, Shyam Kumar Bandari, University of Alabama at Birmingham

Concurrent 4: Elastic Fiber Proteins
Location: Summerlin E
Chair: Hiromi Yanagisawa, University of Tsukuba

2:45 pm  Short Fibulins in Maintenance of Vessel Walls, Hiromi Yanagisawa, University of Tsukuba

4 selected talks from abstracts

Concurrent 5: Matrix in Morphogenesis
Location: Summerlin F
Chair: Sarah Knox, UCSF

2:45 pm  It Takes Nerve: How Neuronal Cues Control Organ Morphogenesis and Regeneration, Sarah Knox, UCSF

4 selected talks from abstracts

4:15-4:30 pm  Break
Location: Veranda

4:30-6:00 pm  President’s Welcome & Award Talks
Location: Summerlin E-F
Chair: Joanne Murphy-Ullrich, ASMB President
4:30pm  **Junior Investigator Awardee**  
**Alexandra Naba**, University of Illinois at Chicago

5:00pm  **Izzo Award Winner**  
The complex and dynamic matrix niche of the kidney glomerulus, **Rachel Lennon**, University of Manchester

5:30pm  **Senior Investigator Awardee**  
How to Build A Matrix, **Jean Schwarzbauer**, Princeton University

6:00-7:00 pm  **Opening Reception**  
Location: Veranda

7:00-7:15 pm  **Founders Award Talk**  
Location: Summerlin E-F

Mechanical force and matrix regulation of tumor initiation and progression, **Vincent Fiore**, The Rockefeller University

7:15-8:00 pm  **Keynote Lecture**  
**CHAIR:** Lynn Sakai, ASMB President Elect  
Location: Summerlin E-F  
**Exosomes and Integrins in Cancer, David Lyden**, Memorial Sloan Kettering Cancer Center

Monday, October 15th

7:15-8:30 am  **Career Mentoring Breakfast**  
(Pre-registration Required)  
Discussion begins at 7:30am  
Location: Veranda C

7:30 am-5:30 pm  **Registration**  
Location: Summerlin Foyer

7:30 am-5:30 pm  **Exhibits**  
Location: Veranda OR Summerlin A-B-C

7:30-8:30 am  **Breakfast**  
Location: Veranda

8:30-10:00 am  **Plenary I: Novel Approaches and Technologies to Investigate the Extracellular Matrix**  
Location: Summerlin E-F

Chair: Alexandra Naba, University of Illinois at Chicago

8:30 am  Advanced Methods to Explore Extracellular Matrix Architecture, **Kirk Hansen**, University of Colorado School of Medicine

9:00 am  ECM Remodelling During Cancer Progression, **Janine Erler**, University of Copenhagen

9:30 am  A Multiscale View of Breast Tumor-ECM Interactions, **Joe Gray**, Oregon Health and Science University

10:00-10:30 am  **Coffee Break**  
Location: Veranda

10:30-12:00 pm  **Plenary II: ECM in Disease, Aging and Regeneration**  
**Chair:** Suneel Apte, Cleveland Clinic Foundation

10:30 am  Collagen as a Target for NSAID-based Breast Cancer Prevention—A Tribute to Patricia Keely, **Pepper Schedin**, Oregon Health & Science University

11:00 am  Imaging, Modeling, and Modifying Matrix Remodeling Following Myocardial Infarction, **Jeffrey Holmes**, University of Virginia

11:30 am  Hippo/Yap Signaling in Heart Regeneration, **James Martin**, Baylor University

12:00-12:30 pm  **ASMB Business Meeting**  
**Chair:** Joanne Murphy-Ullrich, ASMB President  
Location: Summerlin E-F

12:30-2:30 pm  **Poster Session I**  
Location: Summerlin A-B-C  
Odd Number Boards Present

2:30-4:00 pm  **Concurrent Sessions**  
**Concurrent 6: Structure & Assembly of ECM**  
**Chair:** Kiyotoshi Sekiguchi, Osaka University
2:30 pm  Mechanistic Basis for the Laminin Recognition by Integrin, Kiyotoshi Sekiguchi, Osaka University

4 selected talks from abstracts

Concurrent 7: ECM of Inflammation, Infection and Immunity
Location: Summerlin E
Chair: David R. Soto-Pantoja, Wake Forest School of Medicine Comprehensive Cancer Center

2:30 pm  Thrombospondin-1 regulates microbiota and metabolic associated inflammation to impact carcinogenesis, David R. Soto-Pantoja, Wake Forest School of Medicine Comprehensive Cancer Center

4 selected talks from abstracts

Concurrent 8: Mechanosensing
Location: Summerlin F
Chair: Ashley Brown, North Carolina State University and University of North Carolina at Chapel Hill.

11:00am  Understanding the Role of Platelet-Mediated Fibrin Clot Retraction in Wound Repair, Ashley Brown, North Carolina State University and University of North Carolina at Chapel Hill.

4 selected talks from abstract

4:00-4:30 pm  Coffee Break
Location: Veranda

4:30-6:00 pm  Concurrent Sessions

Concurrent 9: Tumor Microenvironment
Location: SummerlinDE
Chair: Name, Institution

4:00pm  Cell cycle independent protection of dormant tumor cells by the perivascular niche, Cyrus Ghajar, Fred Hutchinson Cancer Research Center

Concurrent 10: ECM of Aging
Location: Summerlin E
Chair: Paul W. Noble, Cedars-Sinai

4:30 pm  The Changing Landscape in Fibrosing Lung Diseases, Paul W. Noble, Cedars-Sinai

4 selected talks from abstracts

Guest Symposium IV: Matrix Biology Ireland
Location: Summerlin F
Chair: Dimitrios Zeugolis, NUI Galway

4:30 pm  Macromolecular crowding accelerates and enhances extracellular matrix deposition in permanently differentiated and stem cell cultures, Dimitrios Zeugolis, NUI Galway

5:00pm  Functionalized PEDOT Neuroelectrode Coatings using Heparan Sulphate Mimetics, Manus Biggs, NUI Galway

5:30pm  Systemically administered wound-homing peptide accelerates wound healing by modulating syndecan-4 function, Tero Jarvinen, University of Tampere

FREE EVENING

Tuesday, October 16th

7:15-8:30 am  Women Mentoring Women Breakfast  (Pre-registration Required) Discussion begins at 7:30am
Location: Veranda C

7:30 am-5:30 pm  Registration
Location: Summerlin Foyer

7:30 am-5:30 pm  Exhibits
Location: Veranda OR Summerlin A-B-C

7:30-8:30 am  Breakfast
Location: Veranda
8:30-9:30 am  Plenary III: Signaling From the Matrix  
* Session Sponsored by the Journal of Histochemistry & Cytochemistry  
Location: Summerlin E-F  
Chair: Jean Schwarzbauer, Princeton University

8:30 am  Milieu Molecules and Localized TGF-beta Signaling, Timothy Springer, Harvard University

9:00 am  Human Genetics Aided Discovery of a New Metabolic Hormone, Atul Chopra, Baylor College of Medicine

9:30-10:15 am  ISMB Distinguished Investigator Award Presentation  
The Collagen Triple Helix at the Evolutionary Dawn of the Animal Kingdom, Billy Hudson, Vanderbilt University

10:15-10:30 am  Coffee Break  
Location: Veranda

10:30-12:00 pm  Plenary IV: Genetic Disorders Affecting Connective Tissue  
Location: Summerlin E-F  
Chair: Enid Neptune, Johns Hopkins Medical Institute

10:30 am  Heritable Disorders of Bone and Cartilage, Deborah Krakow, UCLA

11:00 am  New Strategies to Identify Signaling Pathways Associated with Aneurysmal Disease in Mice with Marfan Syndrome, Francesco Ramirez, Icahn School of Medicine at Mount Sinai

11:30 am  The Role of Activin A in Tissue Homeostasis and in Fibrolypsiasa Ossificans Progressiva, Aris Economides, Regeneron

12:00-2:00 pm  Poster Session II  
Location: Summerlin A-B-C  
Even Number Boards Present

2:00-3:30 pm  Concurrent Sessions

Concurrent 11: Cardiovascular ECM  
Location: Summerlin D  
Chair: Luisa Iruela-Arispe, UCLA

2:00 pm  Vascular Regeneration in Adult Arteries, Luisa Iruela-Arispe, UCLA

4 selected talks from abstracts

Concurrent 12: Skin BM, Wound Healing and Disease  
Location: Summerlin E  
Chair: Name, Institution

2:00 pm  Molecular Therapies for Epidermolysis Bullosa, Peter Marinkovich, Stanford University School of Medicine

4 selected talks from abstracts

SIS 2: Trainee Led Session: Emerging Non-Canonical Intracellular Roles of Extracellular Matrix proteins  
Location: Summerlin F  
Chair: Davy Vanhoutte, Cincinnati Children’s Hospital Medical Center

2:00 pm  Deciphering intracellular roles of Thrombospondins during heart and skeletal muscle disease, Davy Vanhoutte, Cincinnati Children’s Hospital Medical Center.

2:30 pm  Distinct intracellular localization and functions for full length MMP-2 and NTT-MMP-2 in heart and kidney disease, David Lovett, University of California, San Francisco.

2:50 pm  Secreted Protein Acidic and Rich in Cysteine (SPARC) as matricellular chaperone, Alexandre Chlenski, University of Chicago.

3:10 pm  Selected talk from abstracts

3:30-4:00 pm  Coffee Break  
Location: Veranda
4:00-5:30 pm Concurrent Sessions

Concurrent 13: Growth Factors and ECM
Location: Summerlin D
Chair: Karen Lyons, UCLA

4:00pm CCN Proteins in Bone Formation and Mechanotransduction, Karen Lyons, UCLA

4 selected talks from abstracts

Concurrent 14: Heritable Disorders of Connective Tissue
Session Sponsored by The Marfan Foundation
Location: Summerlin E
Chair: Shireen Lamande, Murdoch Children's Research Institute

4:00pm Modelling Cartilage and Bone Disorders Using Human iPSCs, Shireen Lamande, Murdoch Children's Research Institute

4 selected talks from abstracts

Concurrent 15: ECM in Musculoskeletal Biomechanics and Regeneration
Location: Summerlin F
Chair: Farshid Guilak, Washington University St. Louis

4:00pm Engineering new biologic therapies for arthritis, Farshid Guilak, Washington University St. Louis

4 selected talks from abstracts

7:00-11:00 pm Banquet – Crimson
(Advanced ticket purchase required.)

9:00-10:30 am Plenary V: Therapeutic Strategies for ECM Diseases
Location: Summerlin E-F
Chair: Beth Kozel, National Institutes of Health

9:00am Inhibiting Fibronectin Assembly to Modify Tumor Microenvironment, Weilan Ye, Genentech Inc.

9:30am Targeting Regeneration Through Proteoglycans, Jeffrey D. Esko, University of California, San Diego

10:00am Targeting Matrix Receptors in Fibrotic Diseases, Ambra Pozzi, Vanderbilt

10:30-11:00 am Coffee Break
Location: Veranda

11:00am -12:30 pm Concurrent Sessions
Concurrent 16: ECM in Fibrosis
Location: Summerlin D
Chair: Kota Saito, Akita University

11:00am Mechanisms of Secretion in Fibrosis, Kota Saito, Akita University

4 selected talks from abstracts

Concurrent 17: Proteases and EMC Remodeling
Location: Summerlin E
Chair: Dirk Hubmacher, Icahn School of Medicine at Mt. Sinai

11:00am ADAMTS17: Its Substrates and Its Biological Function, Dirk Hubmacher, Icahn School of Medicine at Mt. Sinai

4 selected talks from abstracts

SIS 3: Trainee Led Session: The development and use of 3D systems to investigate biological function
Location: Summerlin F
Chair: Reut Shainer, National Institutes of Dental and Craniofacial Research, NIH

11:00am 3D organoids of skeletal stem cell in vitro and in vivo, Pam Robey, NIH NIDCR
11:30am Periosteal Cells Derived from Long Bone are Unique from those Derived from Calvaria, Reut Shainer, National Institutes of Dental and Craniofacial Research, NIH

2 Selected Talks from Abstracts