



Program Book

ECM Microenvironments in Disease, Aging, and Regeneration



American Society for Matrix Biology

2018 | BIENNIAL MEETING

OCTOBER 14-17, 2018

Red Rock

CASINO RESORT SPA
LAS VEGAS, NV



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A Very Special Thank You

Funding for this conference was made possible (in part) by(1 R13AR074236-01) from the National Institute Of Arthritis And Musculoskeletal And Skin Diseases (NIAMS). The views expressed in written conference materials or publications and by speakers and moderators do not necessarily reflect the official policies of the Department of Health and Human Services; nor does mention by trade names, commercial practices, or organizations imply endorsement by the U.S. Government.



Welcome Letter

Dear Matrix Biology Community,

On behalf of the American Society for Matrix Biology (ASMB), let me extend a warm welcome to our attendees at this 8th Biennial Conference of ASMB, "ECM Microenvironments in Disease, Aging, and Regeneration." Our Incoming President, Lynn Sakai, and the Program Committee have assembled an innovative and fresh program that highlights emerging concepts and state of the art technologies in matrix biology. Dr. David Lyden from Memorial Sloan Kettering Cancer Center, our keynote lecturer, will speak on "Exosomes and Integrins in Cancer." The increasing reach of matrix biology across scientific disciplines is evidenced by the participation of Tissue Engineering and Regenerative Medicine International Society North America (TERMIS), the Histochemical Society, and the Alport Syndrome Foundation. The global reach of this conference is reflected by the participation of Matrix Biology Ireland (MBI) and the continued contributions of the International Society for Matrix Biology (ISMB), a long-time, important ASMB partner. We greatly appreciate the roles of these societies in the meeting and look forward to years of productive interactions.

One of the highlights of this meeting is recognition of ASMB scientists who are making especially important contributions to the field of matrix biology. In 2018, we are very pleased to recognize Jean Schwarzbauer (ASMB Senior Investigator), Rachel Lennon (Iozzo Award Winner), and Alexandra Naba (ASMB Junior Investigator). We are also very pleased to present the first Founders Award prize to Vincent Fiore. The Founders Award honors the memory of the leaders responsible for the founding of ASMB in 2001 and is given to young investigators in the process of establishing their independent careers. It is also a great pleasure that this ASMB Conference is the venue for presentation of the ISMB Distinguished Investigator Award to Billy Hudson. In Plenary Session II, Pepper Schedin will present a tribute to the late Patricia Keely.

Continuing the tradition established at the 2014 meeting, ASMB 2018 will feature 3 sessions organized and led by trainees on Sunday, Tuesday, and Wednesday. I encourage you all to support these young investigators by attending and participating vigorously. In addition, ASMB will host two mentoring breakfasts to facilitate informal discussions between younger investigators and trainees and more established scientists. The Career Mentoring Breakfast is Monday morning and the Women Mentoring Women Breakfast is Tuesday morning.

We are pleased to see a large number of poster submissions. Please take advantage of these sessions to meet your colleagues one on one and remember that important science occurs at the posters! The ASMB Business meeting is mid-day on Monday:

ASMB is your society, so please attend and participate in discussions about our current and future activities. Finally, we hope to see you at the Banquet on Tuesday evening, where you can express the "Las Vegas" part of your personalities. Also be sure to enjoy the natural beauty in the surrounding Red Rock Canyon national conservation area.

This conference is the culmination of the dedicated and professional efforts of many people. Kendra LaDuca, ASMB Executive Director, is the glue that holds us all together, oversees essential details, and keeps us cost efficient. ASMB is extremely fortunate to have Kendra at the helm, now running her 4th ASMB conference. Lynn Sakai and her vision, the Program Committee, Executive Council, and ASMB Council members have all made important contributions to the content and organization of this conference. Thank you so very much!

Finally, our sponsors are essential. We are grateful for the continuing support of the NIH and the National Institute of Arthritis and Musculoskeletal Diseases (NIAMS), The Company of Biologists, *Matrix Biology/Elsevier*, the Vanderbilt Center for Matrix Biology, and the Marfan Foundation, as well as the many industry sponsors noted on the inside cover, who make this event possible. We additionally thank our organizational partners, ISMB, the Alport Syndrome Foundation and the Histochemical Society for their support of the meeting and provision of travel awards.

This is your meeting and its success and the continued robustness of matrix biology is due to your participation and sharing of your findings. Please consider becoming more involved in promoting matrix biology locally at your institutions and at the ASMB level through volunteering on committees, by running for ASMB Council (no need to form PACs!), or by making tax-deductible contributions. Membership is important as this allows ASMB to support trainee travel awards and develop new initiatives and partnerships. We also hope to see you at the two 2019 ASMB workshops that are planned: **Fibroblasts: The Arbiters of Extracellular Matrix Remodeling**, June 24-25, 2019 at the University of Virginia, Charlottesville, VA and the **Workshop on Basement Membranes**, July 10-12, 2019 at Vanderbilt University Medical Center, Nashville, TN.

Contrary to the popular slogan advocating Las Vegas tourism, we really do hope that what happens in Vegas gets widely disseminated from Vegas. Leave this ASMB Conference energized, inspired, and ready to spread the word about the importance of matrix biology!

Best wishes and safe travels,
Joanne Murphy-Ullrich
ASMB President

Planning Team Acknowledgement

ASMB and the Meeting Chair extend a heartfelt thank you to those who helped to make this meeting possible.

ASMB Scientific Program Planning Committee

Suneel Apte	Wei Kong	Pyong Park
Ashley Brown	Beth Kozel	Bill Parks
Adam Engler	Shireen Lamande	Ambra Pozzi
Yutaka Inagaki	Karen Lyons	Liliana Schaefer
Luisa Iruela-Arispe	Joanne Murphy-Ullrich	Pepper Schedin
Zenzo Isogai	Enid Neptune	Michelle Tallquist

Special Interest Session leaders

Shyam Kumar Bandari
Reut Shainer
Davy Vanhoutte

Guest Symposia Organizers

Liliana Schaefer and Charles Frevert, *The Histochemical Society*
Adam Engler and Thomas Barker, *TERMIS*
Jeffrey Miner, *Alport Syndrome Foundation*
Dimitrios I. Zeugolis, *Matrix Biology Ireland*

*A special thank you as well to those unnamed
who participated in reviewing abstracts
and planning the mentoring breakfasts.
Your contributions are invaluable!*

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American Society for Matrix Biology

2018 | BIENNIAL
MEETING

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Officers and Council Listing

PRESIDENT

Joanne Murphy-Ullrich

University of Alabama at Birmingham

PRESIDENT ELECT

Lynn Sakai

Portland Shriners Hospital for Children
Oregon Health & Science University

PAST PRESIDENT

Suneel Apte

Lerner Research Institute,
The Cleveland Clinic Foundation

SECRETARY/TREASURER

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Vanderbilt University Medical Center

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Christopher Overall

University of British Columbia

Michelle Tallquist

University of Hawaii

Editor, The Matrix Letter

Dwayne Stupack

University of California, San Diego

Thank You to ASMB Outgoing Council Members

2017

David Birk, Beth Kozel, and Liliana Schaefer

2018

Suneel Apte, Adam Engler, and Michelle Tallquist

Invited Speakers and Chairs

Suneel Apte, Cleveland Clinic

Foundation

Ashley Brown, North Carolina State

University and University of North
Carolina at Chapel Hill

Sergei Budko, Vanderbilt Medical

Center

Atul Chopra, Baylor College of

Medicine

Aris Economides, Regeneron

Janine Erler, University of Copenhagen

Jeffrey D. Esko, University of

California, San Diego

Cyrus Ghajar, Fred Hutchinson Cancer

Research Center

Joe Gray, Oregon Health & Science

University

Farshid Guilak, Washington University

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Kirk Hansen, University of Colorado

School of Medicine

Jeffrey Holmes, University of Virginia

Dirk Hubmacher, Icahn School of

Medicine at Mt. Sinai

Billy Hudson, Vanderbilt University

Luisa Iruela-Arispe, University of

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Research Institute

David C. Lyden, Weill Cornell

Medicine, Meyer Cancer Center

Karen Lyons, University of California

Los Angeles

Peter Marinkovich, Stanford University

School of Medicine

James Martin, Baylor College of

Medicine

Alexandra Naba, University of Illinois

Chicago

Enid Neptune, Johns Hopkins Medical

Institute

William Parks, Cedars-Sinai Medical

Center

Ambra Pozzi, Vanderbilt University

Medical Center

Francesco Ramirez, Icahn School of

Medicine at Mount Sinai

Kota Saito, Akita University

Liliana Schaefer, Goethe University,

Frankfurt, Germany

Pepper Schedin, Oregon Health &

Science University

Jean Schwartzbauer, Princeton

University

Kiyotoshi Sekiguchi, Osaka University

David R. Soto-Pantoja, Wake Forest

School of Medicine Comprehensive

Cancer Center

Tim Springer, Harvard University

Olga Stenina-Adognravi, Cleveland

Clinic

Hiromi Yanagisawa, University of

Tsukuba

Weilan Ye, Genentech Inc

2018 Award Winners



Senior Investigator
Jean Schwartzbauer,
Princeton University



Junior Investigator
Alexandra Naba,
University of Illinois at Chicago



Iozzo Award
Rachel Lennon,
University of Manchester



Founders Award
Vincent Fiore,
The Rockefeller University



ISMB Distinguished Investigator
Billy Hudson,
Vanderbilt University Medical Center

ASMB Travel

Dwight Chambers, Georgia Institute of Technology
Danielle Kamato, University of Queensland
Shyam Kumar Bandari, The University of Alabama at Birmingham
Anna Kornmuller, The University of Western Ontario
Jared Saunders, Princeton University

ASMB Underrepresented Minority Travel

Melisa DeGroot, Cornell University
Maria Eugenia Vega, Princeton University
Selene Colon, Vanderbilt University Medical Center

ISMB International Travel Awards

Rocco Bernasconi, Uniklinik Freiburg
Joan Chang, University of Manchester
Wing Ying Chow, Leibniz Forschungsinstitut for Molecular Pharmacology

Histochemical Society Travel Awards

Sumeda Nandadasa, Cleveland Clinic Lerner Research Institute
Blain Jones, Ohio State University
Elee Shimshoni, Weizmann Institute of Science
Pascal Morrissette Martin, University of Western Ontario
Yue Leng, Purdue University

Alport Syndrome Foundation Travel Awards

Pinyuan Tian, University of Manchester
Michael Yu, University of Utah

Exhibitors

3Helix

675 Arapeen Drive, Suite 302
Salt Lake City, UT 84108
<https://www.3helix.com/>
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Email: info@3helix.com

Advanced BioMatrix, Inc

5930 Sea Lion Place, Suite 100
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Email: support@advancedbiomatrix.com

AMSBIO

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International Society for Matrix Biology

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Email: Schaefer@med.uni-frankfurt.de

Nippi/Matrixome

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Email: k-mizuno@nippi-inc.co.jp

The Histochemical Society

9650 Rockville Pike
Bethesda, MD 20814
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<http://histochemicalsociety.org/>
Email: mail@histochemicalsociety.org

Tissue Source, LLC

Lafayette, IN 47909
888-984-7783
<http://www.tissue-source.com/>
On-site Rep: Bill MacFie
Email: billmacfie@tissue-source.com

General Information

Registration Hours

The meeting registration desk is located in the Summerlin Foyer of the Red Rock Resort. Name badges and conference materials can be picked up at the ASMB Registration Desk. The desk will be staffed during the following hours.

Sunday, October 14th
9:00am–6:00pm
Monday, October 15th
7:30am–5:30pm
Tuesday, October 16th
7:30am–5:30pm
Wednesday, October 17th
8:00am–12:00pm

Registration

Registration fees include the main conference scientific sessions, one program book and the meals included below. Registration fees exclude hotel costs. On-site registration will be accepted with payment via checks and credit cards. Banquet tickets must be purchased separately and in advance and are not included in the registration fee.

Catering

Included in registration fees are the following catered events:
Sunday Night Opening Reception
Monday, Tuesday, and Wednesday Continental Breakfast
Monday and Tuesday Poster Session
Boxed Lunch
AM and PM coffee breaks

Internet Access

Internet access is provided in the guest rooms for those staying onsite at the Red Rock Resort within the meeting block as part of the resort fee. Complimentary access is also provided by ASMB in the meeting spaces (**Username: ASMB2018 Password: ASMB2018!**).

Audio Visual Information for Speakers

Presenters are asked to load their talks as early as possible into the assigned on-line folder. Presenters are asked to meet with an AV tech in the back of their presentation room at least 2 hours prior to their sessions. If you require any assistance, please contact one of the AV Technicians in advance of your presentation. Please arrive in the session room at least 15 minutes prior to the start of your session.

Airport and Transportation

The Las Vegas McCarran International Airport is just 25 minutes from the Red Rock Canyon Resort. A complimentary resort shuttle is available to and from the airport. Pick-up at the airport is at ground zero.

Parking

For meeting attendees, the hotel offers complimentary valet and self-parking.

Exhibits

Please take time to visit the exhibit displays in the Summerlin Foyer area during the breaks and poster sessions. See the exhibitor listing for detailed information regarding our sponsoring companies.

Exhibits Schedule

Sunday, October 14th
12:00pm–6:00pm
Monday, October 15th
7:30am–5:30pm
Tuesday, October 16th
7:30am–5:30pm
Wednesday, October 17th
8:00am–1:00pm

Poster Set-up/Poster Sessions

Poster boards will be set-up in the Summerlin A-B-C Ballroom. All posters will be on display throughout the entire conference but will be presented in two separate sessions. Odd number board numbers will formally present on Monday, October 15th from 12:30–2:30PM, while even numbers boards will formally present on Tuesday, October 16th from 12:00–2:00PM. Set-up and breakdown for ALL poster boards is as follows:

Set-up posters starting
Monday, October 15th, 7:30am
Remove posters by
Wednesday, October 17th, 2:00PM

Poster Session I
Monday, October 15th
12:30–2:30pm

Poster Session II
Tuesday, October 16th
12:00–2:00pm

The organizers are not responsible for any materials posted. Push pins will be provided.

Accompanying Persons

Guests are welcome to enjoy the city during the conference hours. There are many sites and attractions within walking distance. For the most complete information about the local area and things to do while in Las Vegas, check out the Visit Las Vegas website or contact the hotel concierge at (702) 797-7877.

Special Needs

Registrants with special needs are invited to contact the Registration Desk or hotel concierge for assistance.

Meeting Floor Plan

Business Meeting

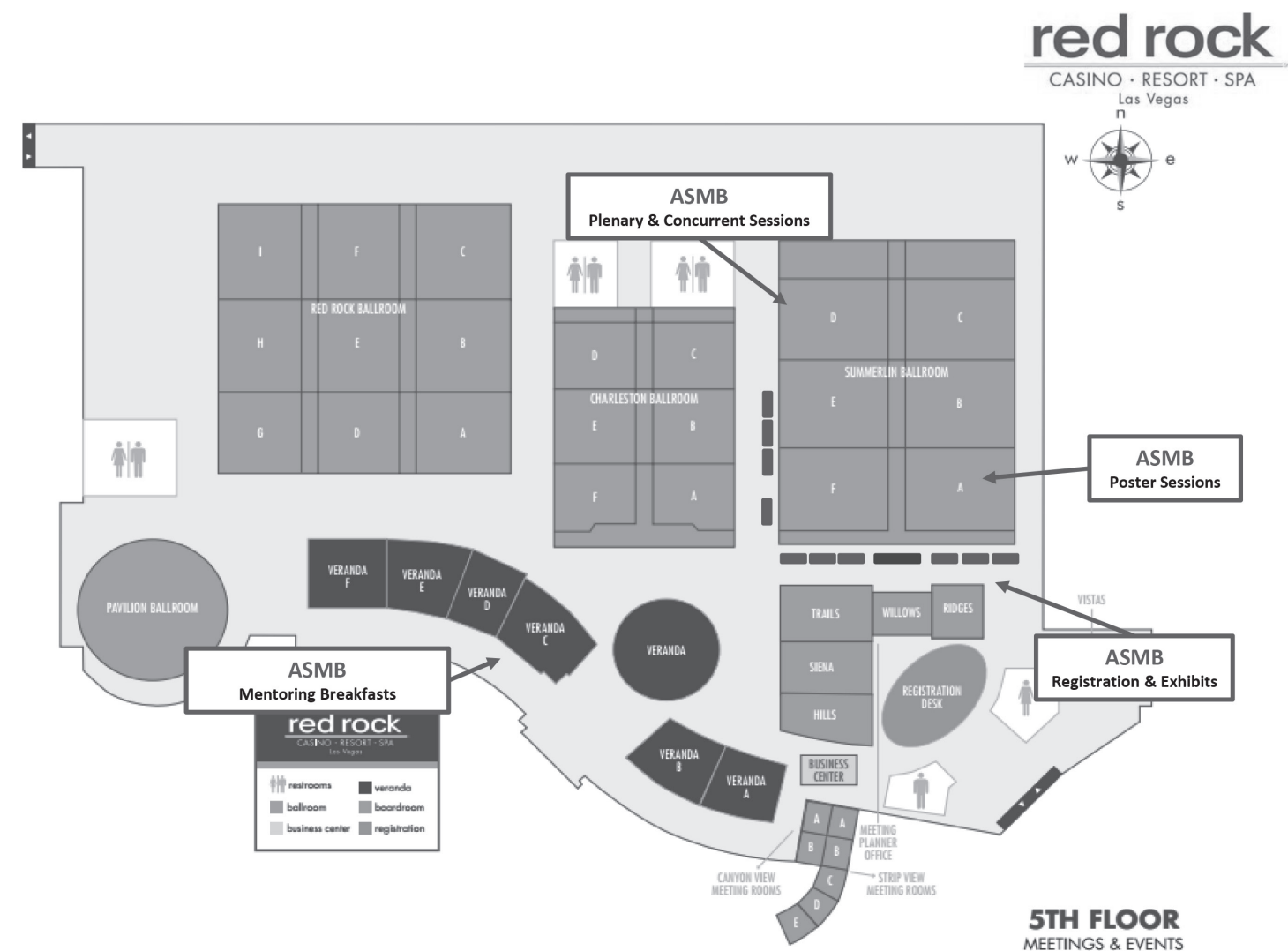
All ASMB members are encouraged and invited to attend the Member Business Meeting on Monday, October 15th from 12:00–12:30pm. The advice and guidance of the membership on current society issues is welcome in these “open forum” meetings. If you are not currently a member, applications are available at the Registration Desk.

Liability

Neither the host venue nor the organizers can be held responsible for any personal injury, loss, damage to private property or additional expense incurred as a result of delays or changes in air, rail, sea, road or other services. All participants are encouraged to make their own arrangements for health and travel insurance.

ASMB Policy on Photography and Audio / Video Recording at ASMB Conferences

During ASMB meetings, attendees and guests are prohibited from visual or audio recording of scientific presentations. Poster materials may only be photographed



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 14th

9:00am–6:00pm

Registration

Location: Summerlin Foyer

10:00am–12:00pm

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 **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*

10:00am–12:00pm

Guest Symposium II – The Histochemical Society Imagining the Matrix – Just Do it Right

Location: Summerlin E

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

10:00am **Introduction: The Relevance of Histochemistry and Immunohistochemistry in the Era of “Omics”**

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**, Charles Frevert, *University of Washington*

11:40am **Panel Discussion**

10:00am–12:00pm

Guest Symposium III–Alport Syndrome Foundation

Location: Summerlin F

Chair: Jeffrey Miner, *Washington University School of Medicine*

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

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

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

11:30am **Modelling Alport Syndrome Using Patient-Derived Kidney Organoids**, Pinyuan Tian, *University of Manchester*
Poster B001

11:45am **Collagen Hybridizing Peptide: New Molecular Probe for In Vitro and In Vivo Detection of Degraded and Denatured Collagen**, Michael Yu, *University of Utah*
Poster B002

12:00–6:00pm

Exhibits

Location: Summerlin Foyer

12:00–1:00pm

Break – Lunch on Your Own

1:00–2:30pm

Concurrent Sessions

Concurrent 1: Matricellular Proteins

Location: Summerlin D

Chair: Olga Stenina-Adognravi, *Cleveland Clinic*

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

1:30pm **Activation of Cancer-associated Fibroblasts Is Required for Metastasis in A Murine Model of Melanoma**, Andrew Leask, *University of Western Ontario*
Poster B003

1:45pm **Dysregulation of Matricellular Protein Thrombospondin-2 in Diabetes; TSP2 Deficient Hydrogel Derived from Extracellular Matrix Accelerates Diabetic Wound Healing**, Britta Kunkemoeller, *Yale University*
Poster B004

2:00pm **Connective Tissue Growth Factor Is Secreted as A Preproprotein that Requires Proteolytic Activation**, Ole J. Kaasboell, *Oslo University Hospital, Institute for Surgical Research*
Poster B005

2:15pm **SPARC Produced by Bone-Marrow Derived Cells Contributes to Myocardial Fibrosis**, Hannah Riley, *MUSC*
Poster B006

Concurrent 2: Proteoglycans

Location: Summerlin E

Chair: Liliana Schaefer, *Goethe University*

1:00pm **Proteoglycan Signaling at the Crossroads**, Liliana Schaefer, *Goethe University*

1:30pm **Versican Is Required for Primary Hematopoiesis and Yolk Sac Vasculogenesis in the Mouse Embryo**, Sumeda Nandadasa, *Cleveland Clinic Lerner Research Institute*
Poster B007

1:45pm **Endorepellin Evokes A Pro-mitophagic Transcriptomic Signature and Regulates Mitochondrial Homeostasis in Endothelial Cells**, Thomas Neill, *Thomas Jefferson University*
Poster B008

2:00pm **ADAMTS5 Is Coupled with Mechanical Load During Mandibular Condylar Development**, Alexandra Rogers, *Medical University of South Carolina*
Poster B009

2:15pm **Biofabrication of An Ideal ECM Mimetic to Function As A Small Diameter Artery**, William D. Wagner and Harleigh J. Warner, *Wake Forest University School of Medicine*
Poster B010

Concurrent 3: Collagens

Location: Summerlin F

Chair: Sergei Budko, *Vanderbilt University Medical Center*

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

1:30pm **VPS33b Is Essential for Collagen Homeostasis**, Joan Chang, *Wellcome Centre for Cell-Matrix Research, University of Manchester*
Poster B011

1:45pm **Zebrafish Round Mutations Reveal A Novel Post-Golgi Collagen Secretory Pathway Linked to a Developmental TICCA Syndrome**, Gokhan Unlu, *Vanderbilt University*
Poster B012

2:00pm **A Fibronectin Matrix-Based Mechanism for Proteolytic Processing of Procollagen I**, Jared Saunders, *Princeton University*
Poster B013

2:15pm **Structural Insights Into Collagen Lysyl Hydroxylases**, Hou-Fu Guo, *The University of Texas MD Anderson Cancer Center*
PosterB014

2:30–2:45pm

Break

2:45–4:15pm

Concurrent Sessions

SIS 1: Trainee Led Session: Extracellular Vesicles – The Next SMALL Thing

*Session Sponsored by Bio-Techne, System Biosciences, LLC., and iZon Science.

biotechne

SBI
 System Biosciences

IZON
 science

Location: Summerlin D

Organizer: Shyam Kumar Bandari, *University of Alabama at Birmingham*

2:45pm **Tumor Exosomes: From Mediators of Systemic Disease to Biomarkers of Metastatic Spread**, Irina Matei, *Drukier Institute for Childrens Health and Meyer Cancer Center*
Poster B015

3:05pm **Chemoexosomes Secreted By Myeloma Cells Enhance Osteoclast Formation and Promote Aggressive Myeloma Bone Disease**, Shyam Kumar Bandari, *University of Alabama at Birmingham*
Poster B016

3:25pm **Inflaming the Masses: Glioma Exosomes Promote Inflammatory Response in Normal Brain**, Michael W Graner, *University of Colorado Denver*
Poster B017

3:45pm **PMN-derived Exosomes Are New Pathogenic Entities in COPD Lung Disease**, Amit Gaggar, *University of Alabama at Birmingham*

4:00pm **Exosomes in Fibronectin Matrix Organization**, Merlyn Emmanuel, *Vanderbilt University School of Medicine*

Concurrent 4: Elastic Fiber Proteins

Location: Summerlin E

Chair: Hiromi Yanagisawa, *University of Tsukuba*

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

3:15pm **Fibulin-4 Deficiency Differentially Affects TGFβ Signaling As Well As Cytoskeleton Structure and Dynamics**, Joyce Burger, *Erasmus Medical Center*
Poster B018

Scientific Program

- 3:30pm **Molecular Interaction Between Elastogenic Proteins Impacting Matrix Assembly and Function**, Heena Kumra, *McGill University*
Poster B019
- 3:45pm **Smooth Muscle and Endothelial Cell Contributions to Arterial Elastin Deposition**, M. Catalin Staiculescu, *Washington University*
Poster B020
- 4:00pm **Aortic Smooth Muscle Cell Elastogenesis Driven by Adipose-Derived Mesenchymal Stem Cell Secreted Factors**, Aneesh K Ramaswamy, *University of Pittsburgh*
Poster B021
- 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, *University of California San Francisco*
- 3:15pm **Dystroglycan Regulates Signaling Pathways Critical to Postnatal Brain Development**, Holly Colognato, *Stony Brook University*
Poster B022
- 3:30pm **ECM Omics Identifies Signature ECMs for the Sites of Inter-tissue Interactions in Mouse Hair Follicles**, Ko Tsutsui, *Riken Center for Biosystems Dynamics Research*
Poster B023
- 3:45pm **ADAMTS9 and ADAMTS20 Have a Dual Function in ECM Remodeling and Biogenesis of the Primary Cilium**, Sumeda Nandadasa, *Cleveland Clinic Lerner Research Institute*
Poster B024
- 4:00pm **Mouse B3glt Knockout: A Model for Congenital Hydrocephaly and Craniofacial and Skeletal Dysmorphology**, Bernadette C. Holdener, *Stony Brook University*
Poster B025

4:15-4:30pm

Break

Location: Veranda

4:30-6:00pm

President's Welcome & Award Talks

Location: Summerlin E-F

Chair: Joanne Murphy-Ullrich, *ASMB President*

- 4:30pm **Junior Investigator Awardee Decoding the Matrix**, Alexandra Naba, *University of Illinois at Chicago*
- 5:00pm **Iozzo 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*

6:00-7:00pm

Opening Reception

Location: Veranda

7:00-7:15pm

Founders Award Talk

Location: Summerlin E-F

Introduction by: Robert Mecham, *Washington University St. Louis*

Mechanical Force and Matrix Regulation of Tumor Initiation and Progression

, Vincent Fiore, *The Rockefeller University*

7:15-8:00pm

Keynote Lecture

Chair: Lynn Sakai, *ASMB President Elect*

Location: Summerlin E-F

Tumor Exosomes and Exomeres Promote Cancer Metastasis and Systemic Disease

, David Lyden, *Weill Cornell Medical College*

Monday, October 15th

7:15-8:30am

Career Mentoring Breakfast

(Pre-registration Required)

Discussion begins at 7:30am

Location: Veranda C

7:30am-5:30pm

Registration and Exhibits

Location: Summerlin Foyer

7:30-8:30am

Breakfast

Location: Veranda

8:30-10:00am

Plenary I: Novel Approaches and Technologies to Investigate the Extracellular Matrix

Location: Summerlin E-F

Chair: Alexandra Naba, *University of Illinois at Chicago*

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

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

Scientific Program

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

10:00-10:30am

Coffee Break

Location: Veranda

10:30-12:00pm

Plenary II: ECM in Disease, Aging and Regeneration

Location: Summerlin E-F

Chair: Suneel Apte, *Cleveland Clinic Foundation*

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

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

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

12:00-12:30pm

ASMB Business Meeting

Chair: Joanne Murphy-Ullrich, *ASMB President*

Location: Summerlin E-F

12:30-2:30pm

Poster Session I

Location: Summerlin A-B-C

Odd Number Boards Present

2:30-4:00pm

Concurrent Sessions

Concurrent 6: Structure & Assembly of ECM

Location: Summerlin D

Chair: Kiyotoshi Sekiguchi, *Osaka University*

- 2:30pm **Mechanistic Basis for the Laminin Recognition by Integrin**, Kiyotoshi Sekiguchi, *Osaka University*

- 3:00pm **Collagen IV Scaffolds are Coated with Agrin/Perlecan: A Unique Organizational Feature of a Model Basement Membrane**, Elena Pokidysheva, *Vanderbilt University Medical Center*
Poster B026

- 3:15pm **Formation of Lamellae in the Corneal Stroma: New Insights in the Underlying Pathomechanism of Keratoconus**, Uwe Hansen, *Institute for Musculoskeletal Medicine, University Hospital Muenster*
Poster B027

- 3:30pm **Hyaluronic Acid-Mediated Macromolecular Crowding to Stimulate Human Cell-Derived Matrix Deposition**, Dalia Shendi, *Worcester Polytechnic Institute*
Poster B028

- 3:45pm **Proteomic Analysis of Extracellular Matrix Dynamics During Mouse Forelimb Development**, Kathryn R. Jacobson, *Purdue University*
Poster B029

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*

- 3:00pm **ADAMTS7 and Influenza Virus Immunity**, John Stambas, *Deakin University*
Poster B030

- 3:15pm **Thrombospondin-4 Produced by Pro-Inflammatory Macrophages Promotes Inflammation**, Mohammed Tanjimur Rahman, *Cleveland Clinic*
Poster B031

- 3:30pm **Extracellular Superoxide Dismutase (EC-SOD) Knockout Mice Have Worse Alveolarization, Inflammation and Cytokine Elaboration After Neonatal Hyperoxia Exposure**, Rashmin C. Savani, *University of Texas Southwestern Medical Center*
Poster B032

- 3:45pm **Distinct Sorting of Subsets of Extracellular Vesicles Expressing CD63, MHC Class 1, and CD47 in Cell-Cell Communication**, Sukhbir Kaur, *Center for Cancer Research, National Cancer Institute, National Institutes of Health*
Poster B033

Concurrent 8: Mechanosensing

Location: Summerlin F

Chair: Ashley Brown, *North Carolina State University and University of North Carolina at Chapel Hill*

- 2:30pm **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*

- 3:00pm **Non-Coding Mechanogenomic Regulation Identified in Human Cardiomyocytes**, Adam J Engler, *University of California San Diego*
Poster B034

- 3:15pm **Mechanical Cell Communication and Its Influence on Organization of Cellular Structures**, Daniel Rüdiger, *Ludwig-Maximilians University, Munich*
Poster B035

- 3:30pm **Mechanotransduction of the Endothelial Glycocalyx Mediates Nitric Oxide Production Through Activation of TRP Channels**, X. Frank Zhang, *Lehigh University*
Poster B036

Scientific Program

3:45pm **Myosin II Governs Intracellular Pressure and Traction Stress by Distinct Mechanisms**, Kimheak Sao, *Drexel University*
Poster B037

4:00-4:30pm

Coffee Break

Location: Veranda

4:30-6:00pm

Concurrent Sessions

Concurrent 9: Tumor Microenvironment

Location: Summerlin D

Chair: Cyrus Ghajar, *Fred Hutchinson Cancer Research Center*

4:30pm **Cell Cycle Independent Protection of Dormant Tumor Cells by the Perivascular Niche**, Cyrus Ghajar, *Fred Hutchinson Cancer Research Center*

5:00pm **DDR1 Regulates the Construction of a Dormancy-Supportive Niche By Coordinating the Assembly of a Pro-Quiescence ECM Proteome**, Jose Javier Bravo-Cordero, *The Tisch Cancer Institute, Icahn School of Medicine at Mount Sinai*
Poster B038

5:15pm **Stromal PTEN Regulates Extracellular Matrix Organization in the Mammary Gland**, Caitlin Jones, *The Ohio State University*
Poster B039

5:30pm **Targeting CD47 as a Therapeutic Strategy for Breast Cancer Prevention**, Tiffany M. Newman, *Wake Forest School of Medicine*
Poster B040

5:45pm **Exploiting the ECM for Noninvasive Imaging of Tumor Progression and Metastases**, Noor Jaikhani, *Howard Hughes Medical Institute, Koch Institute for Integrative Cancer Research, Massachusetts Institute of Technology*
Poster B041

Concurrent 10: ECM of Aging

Location: Summerlin E

Chair: William Parks, *Cedars-Sinai*

4:30pm **Macrophage Function in Fibrosis**, William Parks, *Cedars-Sinai Medical Center*

5:00pm **Alterations in Protein Composition of Aging, Photoaging, and Anti-Inflammatory Aging Models of the Skin with a Focus on the Extracellular Matrix**, Ryan C Hill, *University of Colorado-Denver*
Poster B042

5:15pm **Circulating Fibrillin-1 Among Older US Men Without Diabetes: Associations with Angina, Obesity and High Density Lipoprotein**, Lynn M. Marshall, *Oregon Health and Science University*
Poster B043

5:30pm **Hyaluronan and TSG-6 in Alzheimer's Disease Neuropathology**, May J. Reed, *University of Washington*
Poster B044

5:45pm **Senescence Diminishes the Responsiveness of Primary Human Mesenchymal Stem Cells to Substrate Stiffness**, Venkatesh Mallikarjun, *Wellcome Centre for Cell-Matrix Research, University of Manchester*
Poster B045

Concurrent 11: Cardiovascular ECM

Location: Summerlin D

Chair: Luisa Iruela-Arispe, *University of California Los Angeles*

4:30pm **Vascular Regeneration in Adult Arteries**, Luisa Iruela-Arispe, *University of California Los Angeles*

5:00pm **The Discoidin Domain Receptor-1 Acts as a Mechanotransducer in Vascular Smooth Muscle Cells to Promote Vascular Calcification**, David Ngai, *University of Toronto and Ted Rogers Centre for Heart Research*
Poster B046

5:15pm **4-Phenylbutyrate Promotes Vascular Smooth Muscle Cell Recruitment and Reduces Intracerebral Hemorrhage Severity in Col4a1 Mutant Mice**, Genki Hayashi, *University of California San Francisco*
Poster B047

5:30pm **Point Mutation in the Copper Binding Domain of Lysyl Oxidase Causes Aortic Dilation Modified By Genetic and Environmental Influences**, Beth Kozel, *National Heart, Lung, and Blood Institute, National Institutes of Health*
Poster B048

5:45pm **Lysyl Oxidase Insufficiency Exacerbates the Vascular Disease Caused by Fibulin-4 Mutations**, Michelle Lin, *Washington University School of Medicine*
Poster B049
FREE EVENING

Tuesday, October 16th

7:15-8:30am

Women Mentoring Women Breakfast

(Pre-registration Required) Discussion begins at 7:30am

Location: Veranda C

7:30am-5:30pm

Registration and Exhibits

Location: Summerlin Foyer

Scientific Program

7:30-8:30am

Breakfast

Location: Veranda

8:30-9:30am

Plenary III: Signaling From the Matrix

* Session Sponsored by the *Journal of Histochemistry & Cytochemistry*

Location: Summerlin E-F

Chair: Jean Schwarzbauer, *Princeton University*

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

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

9:30-10:15am

ISMB Distinguished Investigator Award Presentation

Location: Summerlin E-F

Introduction by: Liliana Schaefer, *ISMB President*

The Collagen Triple Helix at the Evolutionary Dawn of the Animal Kingdom, Billy Hudson, *Vanderbilt University*

10:15-10:30am

Coffee Break

Location: Veranda

10:30-12:00pm

Plenary IV: Genetic Disorders Affecting Connective Tissue

Location: Summerlin E-F

Chair: Enid Neptune, *Johns Hopkins Medical Institute*

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

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

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

12:00-2:00pm

Poster Session II

Location: Summerlin A-B-C

Even Number Boards Present

2:00-3:30pm

Concurrent Sessions

Guest Symposium IV: Matrix Biology Ireland

Location: Summerlin F

Chair: Dimitrios Zeugolis, *NUI Galway*

2:00pm **Macromolecular Crowding Accelerates and Enhances Extracellular Matrix Deposition in Permanently Differentiated and Stem Cell Cultures**, Dimitrios Zeugolis, *NUI Galway*

2:30pm **Functionalized PEDOT Neuroelectrode Coatings Using Heparan Sulphate Mimetics**, Manus Biggs, *NUI Galway*

3:00pm **Systemically Administered Wound-Homing Peptide Accelerates Wound Healing By Modulating Syndecan-4 Function**, Tero Jarvinen, *University of Tampere*

Concurrent 12: Skin BM, Wound Healing and Disease

Location: Summerlin E

Chair: Peter Marinkovich, *Stanford University School of Medicine*

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

2:30pm **A Novel Disease-modifying Treatment for RDEB: A Pre-clinical Study Targeting the Anti-fibrotic AT2 and MAS Receptors**, Rocco Bernasconi *Uniklinik Freiburg*
Poster B050

2:45pm **The Different Roles of Laminin-332 and -511 in Keratinocyte Behaviors**, Jun Sasaki, *Nippi, Inc.*
Poster B051

3:00pm **The Versican G1 Fragment, Serum-Derived Hyaluronan-Associated Proteins, Hyaluronan (VG1F-SHAP-HA) Complex Acts as a Mediator Between Wound Surface and Ointment Base in the Treatment of Pressure Ulcer**, Zenzo Isogai, *National Center for Geriatrics and Gerontology, Japan*
Poster B052

3:15pm **Matrix Composition in 3-D Collagenous Bioscaffolds Modulates the Survival and Angiogenic Phenotype of Human Chronic Wound Dermal Fibroblasts**, Pascal Morissette Martin, *University of Western Ontario*
Poster B053

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*

2:00pm **Deciphering Intracellular Roles of Thrombospondins During Heart and Skeletal Muscle Disease**, Davy Vanhoutte, *Cincinnati Children's Hospital Medical Center*

2:30pm **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.*

2:50pm **Function of Secreted Protein Acidic and Rich in Cysteine (SPARC) as a Matricellular Chaperone.**, Alexandre Chlenski, *University of Chicago*
Poster B054

Scientific Program

3:10pm **MT-COMP Compromises Ligaments, Tendons and Joint Function**, Francoise Coustry, *McGovern Medical School at UTHealth*
Poster B055

3:30-4:00pm

Coffee Break

Location: Veranda

4:00-5:30pm

Concurrent Sessions

Concurrent 13: Growth Factors and ECM

Location: Summerlin D

Chair: Karen Lyons, *University of California Los Angeles*

4:00pm **CCN Proteins in Bone Formation and Mechanotransduction**, Karen Lyons, *University of California Los Angeles*

4:30pm **Latency and Antagonism in the Extracellular Regulation of TGFbeta and BMP Family Growth Factors**, Clair Baldock, *University of Manchester*
Posters B057 and B058

4:45pm **LEMD3 Desensitizes Fibroblasts to Stiffness-driven TGF-beta Signaling**, Dwight M. Chambers, *Emory University and Georgia Institute of Technology*
Poster B059

5:00pm **TGFβ and Aortic Disease Severity in MFS**, Marjolijn Renard, *Ghent University*
Poster B060

5:15pm **Individual Smad2 Linker Region Residues Regulate the Genes Involved in Glycosaminoglycan Chain Initiation and Elongation on Proteoglycan, Biglycan**, Kamato Danielle, *University of Queensland*
Poster B061

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*

4:30pm **Phenotypic Analysis of a Mouse Model for Marfanoid-Progeroid-Lipodystrophy Syndrome**, Silvia Smaldone, *Regeneron Pharmaceutical Inc.*
Poster B062

4:45pm **Mouse and Human Genomic Studies Identify Modifiers of Blood Pressure and Supravalvar Aortic Stenosis in Elastin Insufficiency and Williams Beuren Syndrome**, Phoebe Parrish, *National Institutes of Health*
Poster B063

5:00pm **Pain-related Phenotypes in A Murine Model for Classical Ehlers-Danlos Syndrome**, Fransiska Malfait, *Ghent University Hospital*
Poster B064

5:15pm **Resetting Dysregulated Collagen-I Proteostasis in Osteogenesis Imperfecta**, Ngoc-Duc Doan, *Massachusetts Institute of Technology*
Poster B065

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*

4:30pm **Discovery of Potential Therapeutic Targets for Post-Traumatic Osteoarthritis Using a Mechanical Injury Platform**, Farzad Yousefi, *University of Pennsylvania Translational Musculoskeletal Research Center*
Poster B066

4:45pm **RHAMM and CD44 Both Mediate the Influence of Hyaluronic Acid on Embryonic Myoblast Behavior**, Yue Leng, *Purdue University*
Poster B067

5:00pm **Development of Tissue-Specific Matrix-Derived Microcarriers as a Platform for Adipose-Derived Stem/Stromal Cell Differentiation**, Anna Kornmuller, *The University of Western Ontario*
Poster B068

5:15pm **Nitric Oxide Releasing Composite Hydrogels for Tendon Repair via Matrix Metalloproteinase Controlled Pathways**, Kaylee Meyers, *Michigan Technological University*
Poster B069

7:00-11:00pm

Banquet – Crimson

(Advanced ticket purchase required.)

Wednesday, October 17th

8:00am-12:00pm

Registration

Location: Summerlin Foyer

8:00am-11:00am

Exhibits

Location: Summerlin Foyer

8:00-9:00am

Breakfast

Location: Veranda

Scientific Program

9:00-10:30am

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 University Medical Center*

10:30-11:00am

Coffee Break

Location: Veranda

11:00am-12:30pm

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*

11:30am **Targeting Matrix-Mediated Signaling in Fibrosis**, Masha Poyurovsky, *Kadmon Corporation, LLC.*
Poster B070

11:45am **Calreticulin Is Important for the Development of Renal Fibrosis and Dysfunction in Diabetic Nephropathy**, Ailing Lu, *University of Alabama at Birmingham*
Poster B071

12:00pm **Fibronectin-Rich ECMs Store Disease-Relevant Memories that Drive Altered Fibroblast Signaling and Phenotype Through Integrin Switching**, Victoria Stefanelli, *Georgia Institute of Technology*
Poster B072

12:15pm **A Serological Biomarker Measuring True Formation of Collagen Type III (PRO-C3) is Related to Histological Parameters of Non-Alcoholic Steatohepatitis**, Signe Holm Nielsen, *Nordic Bioscience & Technical University of Denmark*
Poster B073

Concurrent 17: Proteases and ECM 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*

11:30am **Fibrillin-2 Proteolysis by Adamts6 is Essential for Cardiac and Limb Development**, Timothy Mead, *Cleveland Clinic Lerner Research Institute*
Poster B074

11:45am **In Situ Detection of Degraded and Denatured Collagen Via Triple Helical Hybridization: New Tool in Histopathology**, Yang Li, *University of Utah*
Poster B075

12:00pm **Intracellular MMP12 Increases Breast Cancer Metastasis**, Pirjo Astrom, *University of British Columbia, and University of Oulu*
Poster B076

12:15pm **Cigarette Smoking Induces Overexpression of Elastolytic Cathepsin S**, Pierre-Marie Andrault, *Tours University*
Poster: B077

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, *National Institutes of Dental and Craniofacial Research, NIH*

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*
Poster B078

11:50pm **A Systems Biology Approach to Studying Melanoma Invasion in a 3D Tumor Microenvironment**, Amanpreet Kaur, *University of Pennsylvania*
Poster B079

12:10pm **Extracellular Matrix Components Isolated from Diabetic Mice Alters Cardiac Fibroblast Function Through the AGE/RAGE Signaling Cascade**, Stephanie Burr, *The University of Mississippi*
Poster B080

Poster Presentations..... Summerlin A-B-C

All posters will be on display throughout the entire conference but will be presented in two separate sessions.

Box lunches are provided in the Veranda room. Please grab a lunch and enjoy the poster presentations.

Poster Session I: Odd Numbers Present

Monday, October 15th.....12:30 – 2:30 PM

Poster Session II: Even Numbers Present

Tuesday, October 16th12:00 – 2:00 PM

Set-up and breakdown for ALL poster boards is as follows:

Set-up posters starting Monday, October 15th at 7:30 AM

Remove posters by Wednesday, October 17th at 2:00PM

Guest Symposium III: Sponsored by the Alport Syndrome Foundation

B001 Poster Session I

Modelling Alport syndrome using patient-derived kidney organoids

Pinyuan Tian¹, Susan J. Kimber¹, Daniel P. Gale², Rachel Lennon¹, ¹University of Manchester, ²University College London

B002 Poster Session II

Collagen Hybridizing Peptide: New Molecular Probe for In Vitro and In Vivo Detection of Degraded and Denatured Collagen

Michael Yu, *University of Utah*

Concurrent Session 1: Matricellular Proteins

B003 Poster Session I

Activation of cancer-associated fibroblasts is required for metastasis in a murine model of melanoma

Andrew Leask¹, Krista Vincent², David Holdsworth¹, Lynne-Marie Postovit², James Hutchenreuther¹, ¹University of Western Ontario, ²University of Alberta

B004 Poster Session II

Dysregulation of matricellular protein thrombospondin-2 in diabetes, TSP2 deficient hydrogel derived from extracellular matrix accelerates diabetic wound healing.

Britta Kunkemoeller, Aaron H. Morris, Tara Bancroft, Hudson Lee, Danielle K. Stamer, Jason Wu, Marina Tan, Kevan Herold, Carlos Fernandez-Hernando, Themis R. Kyriakides, *Yale University*

B005 Poster Session I

Connective Tissue Growth Factor Is Secreted as A Preproprotein that Requires Proteolytic Activation

Ole J. Kaasboell¹, Ashish K Gadicherla¹, Jian-Hua Wang², Vivi Talstad Monsen¹, Else Marie Valbjørn Hagelin¹, Meng-Qiu Dong², Håvard Attramadal¹, ¹Oslo University Hospital, *Institute for Surgical*

Research, Norway, ²National Institute of Biological Sciences, Beijing, China
B006 Poster Session II

SPARC Produced by Bone-Marrow Derived Cells Contributes to Myocardial Fibrosis

Hannah Riley¹, Ryan Kelly¹, Lindsay McDonald¹, An Van Laer¹, Catalin Baicu¹, Amanda LaRue^{1,2}, Michael Zile^{1,2}, Amy Bradshaw^{1,2}, ¹MUSC, ²Ralph H. Johnson Veterans Affairs Medical Center

Concurrent Session 2: Proteoglycans

B007 Poster Session I

Versican is required for primary hematopoiesis and yolk sac vasculogenesis in the mouse embryo

Sumeda Nandadasa, Anna O'Donnell, Suneel S. Apte, *Cleveland Clinic Lerner Research Institute*

B008 Poster Session II

Endorepellin evokes a pro-mitophagic transcriptomic signature and regulates mitochondrial homeostasis in endothelial cells

Thomas, Neill, Renato V. Iozzo, *Thomas Jefferson University*

B009 Poster Session I

ADAMTS5 is coupled with mechanical load during mandibular condylar development

Alexandra Rogers, Sarah Cisewski, Ashton Lancaster, Alura Luck, Christine Kern, *Medical University of South Carolina*

B010 Poster Session II

Biofabrication of an ideal ECM mimetic to function as a small diameter artery

William D. Wagner, Harleigh J. Warner, *Wake Forest University School of Medicine*

Concurrent Session 3: Collagens

B011 Poster Session I

VPS33b is essential for collagen homeostasis

Joan Chang^{1,2}, Adam Pickard^{1,2}, Antony Adamson^{1,2}, Karl E Kadler^{1,2,3}, ¹Wellcome Centre for Cell-Matrix Research, ²University of Manchester, ³Manchester Academic Health Science Centre

B012 Poster Session II

Zebrafish round mutations reveal a novel post-Golgi collagen secretory pathway linked to a developmental TICCA syndrome

Gokhan Unlu¹, Kinsey Qi², Amy Rushing², Eric Gamazon³, Nisha Patel⁴, Mais Hashem⁴, Abdullah AlFaifi⁵, Fowzan Alkuraya⁴, Nancy Cox³, Ela Knapik³, ¹Vanderbilt University, ²Vanderbilt University Medical Center, ³Vanderbilt Genetics Institute, ⁴King Faisal Specialist Hospital and Research Center, ⁵Security Forces Hospital in Riyadh

B013 Poster Session I

A fibronectin matrix-based mechanism for proteolytic processing of procollagen I

Jared Saunders, Jean Schwarzbauer, *Princeton University*

B014 Poster Session II

Structural insights into collagen lysyl hydroxylases

Hou-Fu Guo¹, Chi-Lin Tsai², Masahiko Terajima³, Xiaochao Tan¹, Priyam Banerjee¹, Mitchell D. Miller⁴, Xin Liu¹, Jiang Yu¹, Jovita Byemerwa¹, Sarah Alvarado⁴, Tamer Kaoud^{5,6}, Kevin N. Dalby^{5,6}, Neus Bota-Rabasedas¹, Yulong Chen¹, Mitsuo Yamauchi³, John A. Tainer², George N. Phillips, Jr.⁴, Jonathan M. Kurie¹, ¹Department of Thoracic/Head and Neck Medical Oncology, *The University of Texas MD Anderson Cancer Center*, ²Department of Molecular and Cellular Oncology, *The University of Texas MD Anderson Cancer Center*, ³North Carolina Oral Health Institute, *School of Dentistry, University of North Carolina at Chapel Hill*, ⁴Department of Biosciences,

Rice University, ⁵Division of Medicinal Chemistry, Targeted Therapeutic Drug Discovery and Development Program, College of Pharmacy, The University of Texas at Austin, ⁶Division of Chemical Biology & Medicinal Chemistry, College of Pharmacy, The University of Texas at Austin.

Special Interest Session I: Extracellular Vesicles- The Next SMALL Thing

B015 Poster Session I

Tumor Exosomes: From Mediators of Systemic Disease to Biomarkers of Metastatic Spread

Irina Matei, Weill Cornell Medicine

B016 Poster Session II

Chemoexosomes secreted by myeloma cells enhance osteoclast formation and promote aggressive bone disease

Shyam Kumar Bandari, Rada Amin, Kauslendra Tripathi, Zhengi Shi, Xu Feng, Elezabeth E. Brown, Ralph D. Sanderson, University of Alabama at Birmingham

B017 Poster Session I

Inflaming the Masses: Glioma EVs Promote Inflammatory, Degradative, and Metabolic Responses in Normal Brain Cells

Michael Graner, Mary Wang, Anthony Fringuello, Andrew Bubak, Maria Nagel, Petr Pauckek, University of Colorado Anschutz Medical Campus

Concurrent Session 4: Elastic Fiber Proteins

B018 Poster Session II

Fibulin-4 deficiency differentially affects TGF β signaling as well as cytoskeleton structure and dynamics

Joyce Burger¹, Paula van Heijningen¹, Gert-Jan Kremers¹, Gert van Cappellen¹, Hiromi Yanagisawa², Roland Kanaar¹, Ingrid van der Pluijm¹, Jeroen Essers¹,

¹Erasmus Medical Center, ²University of Tsukuba

B019 Poster Session I

Molecular interaction between elastogenic proteins impacting matrix assembly and function

Heena Kumra*, Valentin Nelea*, Dieter P. Reinhardt, McGill University *Co-First Authors

B020 Poster Session II

Smooth muscle and endothelial cell contributions to arterial elastin deposition

M. Catalin Staiculescu, Chien-Jung Lin, Robert P. Mecham, Jessica E. Wagenseil, Washington University

B021 Poster Session I

Aortic Smooth Muscle Cell Elastogenesis Driven by Adipose-Derived Mesenchymal Stem Cell Secreted Factors

Aneesh K. Ramaswamy, Rachel E. Sides, David A. Vorp, Justin S. Weinbaum, University of Pittsburgh

Concurrent Session 5: Matrix in Morphogenesis

B022 Poster Session II

Dystroglycan regulates signaling pathways critical to postnatal brain development

Holly Colognato, Freyja McClenahan, Himanshu Sharma, Andrea Arreguin, Azeez Aranmolate, Stony Brook University

B023 Poster Session I

ECM omics identifies signature ECMs for the sites of inter-tissue interactions in mouse hair follicles

Ko Tsutsui¹, Hiroki Machida¹, Asako Nakagawa¹, Chun-Chun Cheng¹, Sean D. Keeley¹, Chiharu Tanegashima¹, Yasuko Tomono², Kiyotoshi Sekiguchi³, Kisa Kakiguchi¹, Shigenobu Yonemura¹, Hironobu Fujiwara¹, ¹Riken Center for Biosystems Dynamics Research, ²Shigei MRI, ³Osaka University

B024 Poster Session II

ADAMTS9 and ADAMTS20 have a dual function in ECM remodeling and biogenesis of the primary cilium

Sumeda Nandadasa, Lauren W. Wang, Anna O'Donnell, Caroline M. Kraft, Rushabh Patel, Heon Yung Gee, Kay Grobe, Timothy C. Cox, Friedhelm Hildebrandt, and Suneel S. Apte, Cleveland Clinic Lerner Research Institute

B025 Poster Session I

Mouse B3glct knockout: a model for congenital hydrocephaly and craniofacial and skeletal dysmorphology

Bernadette C. Holdener¹, Richard C. Grady¹, Daniel Cameron¹, Christopher J. Percival¹, Javier C Jimenez-Vega¹, David E. Komatsu¹, Sardar Uddin¹, June Goto², Natalia Peunova¹, Helene Benveniste³, Hedok Lee³, Takashi Sato⁴, Hisashi Narimatsu⁴, Steven J. Bernardinelli⁵, Ao Zhang⁵, and Robert S. Haltiwanger^{1,5}, ¹Stony Brook University, ²Cincinnati Children's Hospital, ³Yale University, ⁴National Institute of Advanced Industrial Science and Technology in Japan, ⁵University of Georgia

Concurrent Session 6: Structure & Assembly of ECM

B026 Poster Session II

Collagen IV scaffolds are coated with agrin/perlecan: a unique organizational feature of a model basement membrane

Elena Pokidysheva¹, Chetyrkin S¹, Boudko SP¹, Colon S¹, Bhave G¹, Zientek K², Rafi M¹, Lennon R³, UK, Hudson BG¹, ¹Vanderbilt University Medical Center, ²Shriners Hospital for Children, ³University of Manchester

B027 Poster Session I

Formation of lamellae in the corneal stroma: New insights in the underlying pathomechanism of keratoconus

Uwe Hansen¹, Melanie Timmen¹, Martin Götte³, Richard Stange¹, Thomas Pap¹,

Nicole Eter² and Maged Alhawaiseh², ¹Institute for Musculoskeletal Medicine, University Hospital Muenster, ²Department of Ophthalmology, University of Muenster Medical Center, ³Department of Gynecology and Obstetrics, University Hospital Muenster

B028 Poster Session II

Hyaluronic Acid-Mediated Macromolecular Crowding to Stimulate Human Cell-Derived Matrix Deposition

Dalia Shendi¹, Julia Marzi², Will Linthicum¹, David M. Dolivo¹, Qi Wen¹, Tanja Dominko¹, Katja Schenke-Laylan², Marsha W. Rolle¹, ¹Worcester Polytechnic Institute, ²University of Tübingen

B029 Poster Session I

Proteomic analysis of extracellular matrix dynamics during mouse forelimb development

Kathryn R. Jacobson, Alexander R. Ocken, Alita F. Miller, Tamara L. Kinzer-Ursem, Sarah Calve, Purdue University

Concurrent Session 7: ECM of Inflammation, Infection and Immunity

B030 Poster Session II

ADAMTS7 and influenza virus immunity

John Stambas¹, Meagan McMahon¹, Siying Ye¹, Daniel Dlugolenski¹, Ralph Tripp², Daniel McCulloch¹, ¹Deakin University, ²University of Georgia

B031 Poster Session I

Thrombospondin-4 Produced by Pro-inflammatory Macrophages Promotes Inflammation

Mohammed Tanjimur Rahman, Santoshi Muppala, Irene Krukovets, Jasmine Gajeton, Dmitriy Verbovetskiy, Edward F. Plow, Olga Stenina-Adognravi, Lerner Research Institute Cleveland Clinic

B032 Poster Session II

Extracellular Superoxide Dismutase (EC-SOD) knockout mice have worse alveolarization, inflammation and

cytokine elaboration after neonatal hyperoxia exposure

Rashmin C. Savani, John Ibrahim, Jie Liao, Naeun Cheong, Christopher Longoria, University of Texas Southwestern Medical Center

B033 Poster Session I

Distinct sorting of subsets of extracellular vesicles expressing CD63, MHC class 1, and CD47 in cell-cell communication

Sukhbir Kaur¹, David D. Roberts¹, Abdel G. Elkahoulou², Weiwei Wu², Arakelyan, Anush³, Leonid Margolis³, Satya P. Singh⁴, ¹Laboratory of Pathology, Center for Cancer Research, National Cancer Institute, National Institutes of Health, ²Cancer Genetics Branch, National Human Genome Research Institute, National Institutes of Health, ³Section of Intercellular Interactions, Eunice Kennedy-Shriver National Institute of Child Health and Human Development, National Institutes of Health, ⁴Inflammation Biology Section, National Institute of Allergy and Infectious Diseases, National Institutes of Health.

Concurrent Session 8: Mechanosensing

B034 Poster Session II

Non-Coding Mechanogenomic Regulation Identified In Human Cardiomyocytes

Adam J. Engler, UC San Diego

B035 Poster Session I

Mechanical cell communication and its influence on organization of cellular structures

Daniel Rüdiger, Angelika Vollmar, Stefan Zahler, Ludwig-Maximilians University Munich Department of Pharmacy

B036 Poster Session II

Mechanotransduction of the endothelial glycocalyx mediates nitric oxide production through activation of TRP channels

X. Frank Zhang¹, Matthew A. Dragovich¹, Daniel Chester¹, Bing-mei Fu², ¹Lehigh University, ²The City University of New York

B037 Poster Session I

Myosin II Governs Intracellular Pressure and Traction Stress by Distinct Mechanisms

Kimheak Sao¹, Tia Jones¹, Andrew Doye², Galina Schevzov³, Peter Gunning³, Ryan Petrie¹, ¹Drexel University, ²National Institutes of Health, ³University of New South Wales

Concurrent Session 9: Tumor Microenvironment

B038 Poster Session II

DDR1 regulates the construction of a dormancy-supportive niche by coordinating the assembly of a pro-quiescence ECM proteome

Julie Di Martino¹, Rita Nobre^{1,2,3}, Eduardo Farias¹, Chandrani Mondal¹, Robert Morabito⁴, Ben Martin⁴, David Matus⁴, Elana Fertig⁵, Alexandra Naba⁶, Julio Aguirre-Ghiso^{1,2}, Jose Javier Bravo-Cordero¹

¹Department of Medicine, Division of Hematology and Oncology, The Tisch Cancer Institute, Icahn School of Medicine at Mount Sinai, ²Department of Otolaryngology, Department of Oncological Sciences, Black Family Stem Cell Institute, Mount Sinai School of Medicine; ³Abel Salazar School of Biomedicine, Porto University, PT; ⁴Biochemistry and Cell Biology Department, Stony Brook University, ⁵Department of Oncology, Sidney Kimmel Comprehensive Cancer Center, Johns Hopkins University, ⁶Department of Physiology & Biophysics, University of Illinois at Chicago

B039 Poster Session I

Stromal PTEN regulates extracellular matrix organization in the mammary gland

Caitlin Jones¹, Anisha Hammer¹, YouJin Cho¹, Gina Sizemore¹, Edna Cukierman², Lisa Yee³, Samir Ghadiali¹, Michael Ostrowski⁴, Jennifer Leight¹, ¹The Ohio State University, ²Fox Chase Cancer Center, ³City of Hope, ⁴Medical University of South Carolina

Poster Program

B040 Poster Session II

Targeting CD47 as a therapeutic strategy for breast cancer prevention.

Tiffany M. Newman, Elizabeth R. Stirling, Adam Wilson, Katherine L. Cook, David R. Soto-Pantoja, *Wake Forest School of Medicine*

B041 Poster Session I

Exploiting the ECM for noninvasive imaging of tumor progression and metastases

Noor Jaikhani¹, Jessica R Ingram², Mohammad Rashidian³, Steffen Rickelt¹, Chenxi Tian¹, Hidde L Ploegh³ and Richard O Hynes^{1, 4, 1} *David H Koch Institute for Integrative Cancer Research, Massachusetts Institute of Technology*
²*Department of Cancer Immunology and Virology, Dana Farber Cancer Institute,*
³*Program in Cellular and Molecular Medicine, Boston Children's Hospital,*
⁴*Howard Hughes Medical Institute*

Concurrent Session 10: ECM of Aging

B042 Poster Session II

Alterations in Protein Composition of Aging, Photoaging, and Anti-inflammatory Aging models of the Skin with a Focus on the Extracellular Matrix

Ryan C Hill¹, Taihao Quan², Kelly Higa¹, James DeGregori¹, Gary J Fisher², Kirk C Hansen¹, ¹*University of Colorado-Denver,*
²*University of Michigan*

B043 Poster Session I

Circulating fibrillin-1 among older US men without diabetes: associations with angina, obesity and high density lipoprotein

Lynn M Marshall¹, Eric J Carlson², Carrie M Nielson¹, Elsa S Strotmeyer³, Cherrie Z Abraham¹, Amir F Azarbal¹, William S Evans⁴, Eric S Orwoll¹, Lynn Y Sakai^{1, 2, 1} *Oregon Health and Science University,*
²*Shriners Hospital for Children,*
³*University of Pittsburgh,*
⁴*Duke University*

B044 Poster Session II

Hyaluronan and TSG-6 in Alzheimer's Disease Neuropathology

May J. Reed¹, Mamatha Damodarasamy¹, Jasmine Pathan¹, Christina K Chan², Charles Spiekerman¹, Thomas N Wight², William A. Banks^{1, 3}, Anthony J Day⁴, Robert B. Vernon², C Dirk Keene¹, ¹*University of Washington,*
²*Benaroya Research Institute,*
³*VA Puget Sound Health Care System,*
⁴*Wellcome Trust Centre for Cell-Matrix Research, University of Manchester*

B045 Poster Session I

Senescence diminishes the responsiveness of primary human mesenchymal stem cells to substrate stiffness

Venkatesh Mallikarjun¹, Oana Dobre¹, Mark R. Jackson¹, Hamish T.J. Gilbert¹, Stephen M. Richardson², Joe Swift¹, ¹*Wellcome Centre for Cell-Matrix Research, University of Manchester,*
²*University of Manchester*

Concurrent Session 11: Cardiovascular ECM

B046 Poster Session II

The Discoidin Domain Receptor-1 Acts as a Mechanotransducer in Vascular Smooth Muscle Cells to Promote Vascular Calcification

David Ngai, Michelle Bendeck, *University of Toronto Department of Laboratory Medicine and Pathobiology, Translational Biology and Engineering Program (TBEP), and Ted Rogers Centre for Heart Research*

B047 Poster Session I

4-phenylbutyrate promotes vascular smooth muscle cell recruitment and reduces intracerebral hemorrhage severity in Col4a1 mutant mice

Genki Hayashi, Cassandre Labelle-Dumais, Mao Mao, Rebekah Aldrich, Douglas B Gould, *University of California San Francisco*

B048 Poster Session II

Point mutation in the copper binding domain of lysyl oxidase causes aortic dilation modified by genetic and environmental influences

Kit Man Tsang¹, Russell H Knutsen¹, Charles J. Billington¹, Heiko Steenbock²,

Anderson Watson¹, Amanda Wardlaw¹, Frederick T. Greenaway³, Juergen Brinckman^{3, 4}, and Beth A. Kozel¹, ¹*Laboratory of Vascular and Matrix Genetics, National Heart, Lung, and Blood Institute, National Institutes of Health,*
²*Institute of Virology and Cell Biology, University of Luebeck,*
³*Clark University,*
⁴*Department of Dermatology and Institute of Virology and Cell Biology, University of Luebeck*

B049 Poster Session I

Lysyl oxidase insufficiency exacerbates the vascular disease caused by Fibulin-4 mutations

Michelle Lin, Thomas J. Broekelmann, Robert P. Mecham, Carmen M. Halabi, *Washington University School of Medicine*

Concurrent Session 12: Skin BM, Wound Healing and Disease

B050 Poster Session II

A novel disease-modifying treatment for RDEB: a pre-clinical study targeting the anti-fibrotic AT2 and MAS receptors

Rocco Bernasconi¹, Christine Gretzmeier¹, Tobias Kuhl¹, Thomas Walther², Leena Bruckner-Tuderman¹, Alexander Nyström¹, ¹*Uniklinik Freiburg,*
²*University College Cork*

B051 Poster Session I

The different roles of laminin-332 and -511 in keratinocyte behaviors

Jun Sasaki, Chisei Shimono, Yuji Atsuzawa, Shunji Hattori, Kazunori Mizuno, *Nippi Research Institute of Biomatrix*

B052 Poster Session II

The Versican G1 Fragment, Serum-Derived Hyaluronan-Associated Proteins, Hyaluronan (VG1F-SHAP-HA) Complex Acts as a Mediator between Wound Surface and Ointment Base in the Treatment of Pressure Ulcer

Yusuke Murasawa, Hiroyuki Nakamura, Ken Watanabe, Zenzo Isogai, *National Center for Geriatrics and Gerontology, bu, Aichi, Japan*

B053 Poster Session I

Matrix composition in 3-D collagenous bioscaffolds modulates the survival and angiogenic phenotype of human chronic wound dermal fibroblasts

Pascal Morissette Martin, Aaron Grant, Douglas W. Hamilton, and Lauren E. Flynn, *University of Western Ontario*

Special Interest Session II: Emerging Non-Canonical Intracellular Roles of Extracellular Matrix Proteins

B054 Poster Session II

Function of Secreted Protein Acidic and Rich in Cysteine (SPARC) as a matricellular chaperone

Alexandre Chlenski, Marija Dobratic, Helen R. Salwen, Mark A. Applebaum, Emma Wilkinson, Susan L. Cohn, *University of Chicago*

B055 Poster Session I

MT-COMP compromises ligaments, tendons and joint function

Francoise Coustry¹, Karen L. Posey¹, Tristan Maerz², Kevin Baker³, Alka C. Veerisetty¹, Mohammad G. Hossain¹, Frankie Chiu¹, Jacqueline T. Hecht^{1, 4}, ¹*McGovern Medical School at UTHHealth Department of Pediatrics,*
²*University of Michigan Department of Orthopaedic Surgery and MedSport,*
³*Beaumont Hospital – Royal Oak Department of Orthopaedic Surgery,*
⁴*UTHealth School of Dentistry*

Concurrent Session 13: Growth Factors and ECM

B057 Poster Session I

Internal cleavage and synergy with twisted gastrulation enhance BMP inhibition by BMPER

Clair Baldock¹, Michael P Lockhart-Cairns¹, Karen Tzia Wei Lim¹, Alan RF Godwin¹, Alexandra Zuk², Gerhard Sengle², ¹*University of Manchester,*
²*University of Cologne*

Poster Program

B058 Poster Session II

The Structure and Regulation of latent TGFβ by LTBP1 and Fibrillin

Clair Baldock, Michael P. Lockhart-Cairns, Jennifer Thomson, Rana Dajani, *University of Manchester*

B059 Poster Session I

LEMD3 Desensitizes Fibroblasts to Stiffness-driven TGF-beta Signaling

Dwight M. Chambers^{1, 2}, Leandro Moretti³, Thomas H. Barker³, ¹*Emory University,*
²*Georgia Institute of Technology,*
³*University of Virginia*

B060 Poster Session II

TGFβ and aortic disease severity in MFS

Marjolijn Renard¹, Elise C. Manalo², Sara Tufa², Douglas R. Keene², Julie De Backer¹, Lynn Y. Sakai², ¹*Ghent University,*
²*Shriners Hospital for Children Portland*

B061 Poster Session I

Individual Smad2 linker region residues regulate the genes involved in glycosaminoglycan chain initiation and elongation on proteoglycan, biglycan.

Kamato Danielle¹, Osman Narin^{1, 2}, Little Peter¹, ¹*University of Queensland,*
²*RMIT University*

Concurrent Session 14: Heritable Disorders of Connective Tissue

B062 Poster Session II

Phenotypic analysis of a mouse model for Marfanoid-Progeroid-Lipodystrophy syndrome

Silvia Smaldone, Erika Troy, Lawrence Miloscio, Trikaladarshi Persaud, Giusy Della Gatta, Guochon Gong, Brian Zambrowicz, Aris N. Economides, Chris Schoenherr, *Regeneron Pharmaceutical Inc.*

B063 Poster Session I

Mouse and human genomic studies identify modifiers of blood pressure and supravalvar aortic stenosis in elastin insufficiency and Williams Beuren syndrome

Phoebe Parrish, Russell Knutsen, Angela Troia, Amanda Wardlaw, Charles Billington, Delong Liu, Yi Ping Fu, and Beth Kozel, *National Institutes of Health*

B064 Poster Session II

Pain-related phenotypes in a murine model for classical Ehlers-Danlos syndrome

Fransiska Malfait¹, Delfien Syx¹, Rachel E. Miller², Alia M. Obeidat², Phuong B. Tran², Anne-Marie Malfait², ¹*Ghent University Hospital, Ghent Belgium,*
²*Rush University Medical Center*

B065 Poster Session I

Resetting Dysregulated Collagen-I Proteostasis in Osteogenesis Imperfecta

Ngoc-Duc Doan, Andrew S. DiChiara, Agata Bikovtseva, and Matthew D. Sholders, *Massachusetts Institute of Technology*

Concurrent Session 15: ECM in Musculoskeletal Biomechanics and Regeneration

B066 Poster Session II

Discovery of potential therapeutic targets for post-traumatic osteoarthritis using a mechanical injury platform

Farzad Yousefi, Madison Tanis, Robert L. Mauck, George R. Dodge, *Department of Orthopaedic Surgery, University of Pennsylvania Translational Musculoskeletal Research Center, Crescenzo VA Medical Center*

B067 Poster Session I

RHAMM and CD44 both mediate the influence of hyaluronic acid on embryonic myoblast behavior

Yue Leng, Sarah Calve, *Purdue University*

B068 Poster Session II

Development of tissue-specific matrix-derived microcarriers as a platform for adipose-derived stem/stromal cell differentiation

Anna Kornmuller, Ammi Jani, Lauren E. Flynn, *The University of Western Ontario*

Poster Program

B069 Poster Session I

Nitric Oxide Releasing Composite Hydrogels for Tendon Repair via Matrix Metalloproteinase Controlled Pathways

Kaylee Meyers, Rupak Rajachar, Carly Joseph, Bruce Lee, *Michigan Technological University*

Concurrent Session 16: ECM in Fibrosis

B070 Poster Session II

Targeting Matrix-mediated Signaling in Fibrosis

Rigen Mo, Sarah Lucas, Rafael Depetris, Ji-In Kim, Kevin G. Liu, Ed Skucas, Xiao-Jiang Feng, Jack Gaffney, Jeegar P. Patel, Masha V. Poyurovsky, *Kadmon Corporation, LLC*

B071 Poster Session I

Calreticulin is important for the development of renal fibrosis and dysfunction in diabetic nephropathy

Ailing Lu, Manuel A. Pallero, Benjamin Owusu, Anton Borovjagin, Paul Sanders, Joanne E. Murphy-Ullrich, *University of Alabama at Birmingham*

B072 Poster Session II

Fibronectin-rich ECMs store disease-relevant memories that drive altered fibroblast signaling and phenotype through integrin switching

Victoria Stefanelli¹, Wei Li³, Shilpa Choudhury¹, Ping Hu³, Vincent Yeh³, Leandro Moretti³, Dwight M. Chambers^{1,2}, Kelly Pesson¹, Matthew Torres¹, Thomas H. Barker³, ¹Georgia Institute of Technology, ²Emory University, ³University of Virginia

B073 Poster Session I

A Serological Biomarker Measuring True Formation of Collagen Type III (PRO-C3) is Related to Histological Parameters of Non-alcoholic Steatohepatitis

Signe Holm Nielsen^{1,2}, Diana J. Leeming¹, Jane I Grove^{3,4,5}, Philip Kaye^{3,4}, Stuart Astbury^{3,4,5}, Mette Juul Nielsen¹, Morten A. Karsdal¹, Indra Neil Guha³, Guruprasad P. Aithal^{3,4,5}, ¹Nordic Bioscience, Fibrosis Biology and Biomarkers, Herlev, DK, ²Department of Biotechnology and Bioengineering, Technical University of Denmark, Lyngby, DK, ³NIHR Nottingham Biomedical Research Centre, Nottingham University Hospitals NHS trust and University of Nottingham, UK, ⁴MRC/EPSCRC Nottingham Molecular Pathology Node, University of Nottingham, UK, ⁵Nottingham Digestive Diseases Centre, School of Medicine, University of Nottingham, UK

Concurrent Session 17: Proteases and EMC Remodeling

B074 Poster Session II

Fibrillin-2 proteolysis by Adamts6 is essential for cardiac and limb development

Timothy Mead¹, Cagri Gulec², Dieter Reinhardt³, Cecilia W. Lo², Suneel S. Apte¹, ¹Cleveland Clinic Lerner Research Institute, ²University of Pittsburgh School of Medicine, ³McGill University

B075 Poster Session I

In situ detection of degraded and denatured collagen via triple helical hybridization: new tool in histopathology

Yang Li¹, Jeongmin Hwang¹, Yufeng Huang¹, Timothy Burwell², Norman Peterson², Jane Connor², Stephen Weiss³, Michael Yu¹, ¹University of Utah, ²MedImmune, ³University of Michigan

B076 Poster Session II

Intracellular MMP12 Increases Breast Cancer Metastasis

Pirjo Astrom^{1,2}, Antoine Dufour¹, Maria Villalba Esparza³, Yuanmei Lou^{2,4}, Reinhild Kappelhoff¹, Nikolaus Fortelny¹, Paul MacDonald^{1,4}, Vincent Dive⁵, Enrique Lerma⁶, Shoukat Dedhar^{1,4}, Alfonso Calvo³, Christopher M. Overall¹, ¹University of British Columbia, ²University of Oulu, Finland, ³CIMA of the University of Navarra, Pamplona, Spain, ⁴Integrative Oncology BC Cancer Research Centre Vancouver, British Columbia, Canada, ⁵Atomic Energy and Alternative Energies Commission, Gif/Yvette, France, ⁶Hospital de la Santa Creu I Sant Pau, Barcelona, Spain

B077 Poster Session I

Cigarette smoking induces overexpression of elastolytic cathepsin S

Pierre-Marie Andrault¹, Andrea C. Schamberger², Thibault Chazeirat¹, Damien Sizaret^{1,3}, Justine Renault¹, Agnès Petit¹, Mylène Wartenberg¹, Ahlame Saidi¹, Thomas Baranek¹, Serge Guyetant^{1,3}, Yves Courty¹, Oliver Eickelberg^{2,4}, Gilles Lalmanach¹, Fabien Lecaille¹, ¹INSERM, UMR 1100, Centre d'Etude des Pathologies Respiratoires, University of Tours, ²Comprehensive Pneumology Center, Ludwig-Maximilians-University and Helmholtz Zentrum München, ³Service d'Anatomie et Cytologie Pathologique, ⁴Division of Pulmonary and Critical Care Medicine, University of Colorado

Special Interest Session III, The Development and Use of 3D Systems to Investigate Biological Function

B078 Poster Session II

Periosteal Cells Derived from Long Bone are Unique from those Derived from Calvaria

Reut Shainer¹, Vardit Kram¹, Tina M. Kilts¹, Li Li¹, Carl G. Simon Jr², Marian F. Young¹, ¹Molecular Biology of Bones and Teeth Section, NIDCR, NIH, ²Biosystems and Biomaterials Division, National Institute of Standards and Technology

B079 Poster Session I

A systems biology approach to studying melanoma invasion in a 3D tumor microenvironment

Amanpreet Kaur, Benjamin Emert, Ian Mellis, Arjun Raj

B080 Poster Session II

Extracellular matrix components isolated from diabetic mice alters cardiac fibroblast function through the AGE/RAGE signaling cascade

Stephanie Burr, James A. Stewart, *The University of Mississippi*

Matricellular Proteins

B081 Poster Session I

The Role of Peroxidases in Renal Injury

Selene Colon¹, Haiyan Luan², Yan Liu¹, Cameron Meyer¹, Leslie Gewin¹, Gautam Bhave¹, ¹Vanderbilt University Medical Center, ²Jiamusi University

B082 Poster Session II

Determining the Roles of a Novel Cysteine-Rich Secretory Protein (CRISP) LON-1 in BMP Signaling in C. elegans

Anthony Nzessi, Zhiyu Liu, Herong Shi, Frances Clark, Ines Muravin, Jun (Kelly) Liu, *Department of Molecular Biology and Genetics, Cornell University*

B083 Poster Session I

ADAMTSL2 Secretion Requires O-Fucosylation and Is Affected by Geleophysic Dysplasia-causing Mutations in the TSRs

Ao Zhang¹, Steven J. Berardinelli¹, Christina Leonhard-Melief^{2,3}, Deepika Vasudevan^{2,4}, Andrew Taibi^{2,5}, Sharee Giannone², Suneel S. Apte⁶, Bernadette C. Holdener², Robert S. Haltiwanger^{7,2}, ¹University of Georgia, ²Stony Brook University, ³Center To CureTM, ⁴NYU Langone Medical Center, ⁵University of Utah, ⁶Lerner Research Institute, ⁷University of Georgia

Poster Program

B084 Poster Session II

Role of the CCN1-Hippo-YAP regulatory axis in sprouting angiogenesis

Sangmi Lee, Afruja Ahad, Michele Luu, Brahim Chaqour, *SUNY Downstate Medical Center*

B085 Poster Session I

Thrombospondin-1-mediated TGFβ signaling in myofibers causes muscle atrophy via the PERK-eIF2α-ATF4 ER-stress pathway and regulates body adiposity by inducing FGF21

Davy Vanhoutte, Tobias Schips, Matthew J. Brody, Jeffery D. Molkentin, *Cincinnati Children's Hospital Medical Center, Department of Pediatrics, University of Cincinnati and Howard Hughes Medical Institute, Cincinnati Children's Hospital Medical Center*

B086 Poster Session II

The laminin-binding integrins regulate cell-cell interactions and the inflammatory status of the kidney collecting duct epithelium

Eugenia M. Yazlovitskaya, Erin Plosa, Olga Viquez, Ambra Pozzi, Roy Zent, *Vanderbilt University Medical Center*

B087 Poster Session I

Identifying Growth Factors Associated with the ECM in the Tumor Microenvironment

Genevieve Abbruzzese¹, Eric Kuhn², Steven A. Carr², Richard O. Hynes¹, ¹MIT, ²Broad Institute

B088 Poster Session II

CD47 is positively correlated with intraflagellar transport protein 57 in papillary thyroid cancer

Kun Dong, Sukhbir Kaur, David Roberts, *National Cancer Institute, National Institute of Health*

B089 Poster Session I

The secreted modular calcium binding protein SMOC-1 positively regulates BMP signaling in a dose-dependent manner

Melisa DeGroot, Herong Shi, Alice Eastman, Alexandra McKillop, Jun Kelly Liu, *Cornell University*

B090 Poster Session II

A novel mutation in the NPXY motif of integrin reveals unique phenotypes linked to him-4/hemicentin in males of *Caenorhabditis elegans*

Myeongwoo Lee, Zhongqiang Qiu, Peter Sheesley, *Baylor University*

B091 Poster Session I

Analyzing the stabilizing effects of glycan modifications in ADAMTS13

Rajashri Manjunath, Steven J. Berardinelli, Robert S. Haltiwanger, *University of Georgia*

B092 Poster Session II

Thrombospondin-4 mediates TGF-beta1-induced cancer growth

Santoshi Muppala, Irene Krukovets, Dmitriy Verbovetskiy, Edward F Plow, Olga Stenina-Adognravi*, *Cleveland Clinic Foundation*

B093 Poster Session I

Glycosylation of ADAMTS/TSR Proteins is Essential for TSR Stabilization and Proper Secretion

Steven J. Berardinelli, Robert S. Haltiwanger, *Complex Carbohydrate Research Center, University of Georgia*

B094 Poster Session II

Elevated CCN1 promotes extracellular matrix degeneration and skin cancer in aged human skin

Taihao Quan, Yaping Xiang, Zhaoping Qin, Andrzej A. Dlugosz, George Bou-Gharios, John J. Voorhees, Gary J. Fisher, ¹Department of Dermatology, University of Michigan, ²Department of Dermatology, Third Xiangya Hospital, Central South University, Changsha, China, ³Institute of Ageing and Chronic Disease, University of Liverpool

B095 Poster Session I

Mural cell-derived laminin α5 plays a detrimental role in ischemic stroke

Abhijit Nirwane¹, Benjamin Nguyen¹, Jeffrey Miner², Yao Yao¹, ¹University of Georgia, ²Washington University

Poster Program

LB01 Poster Session I

Proteomic Analysis of Detergent Soluble Proteins Suggests Cooperative, Non-redundant Functions For TSP1 and TSP2 in Cortical Bone

Andrea I. Alford, Venkatesha Basrur, Anita B. Reddy, *University of Michigan*

Proteoglycans

B096 Poster Session II

Nascent laminin- γ 1 synthesis regulates the steady-state adult bone marrow hematopoietic niche

Karen Carlson^{1,2}, Sreemanti Basu², Pouneh Kermani³, Irene Hernandez², Mark Zogg², Jennifer May², British Fields², Hartmut Weiler², ¹Medical College of Wisconsin, ²Blood Research Institute part of Versiti, ³Weill Cornell College of Medicine

B097 Poster Session I

Chemotherapy induces secretion of exosomes loaded with heparanase that degrades extracellular matrix and impacts tumor and host cell behavior

Shyam Kumar Bandari¹, Anurag Purushothaman¹, Vishnu C. Ramani¹, Garrett J. Brinkley¹, Darshan S. Chandrashekar¹, Sooryanarayana Varambally¹, James A. Mobley¹, Yi Zhang², Elizabeth E. Brown¹, Israel Vlodavsky³, Ralph D. Sanderson¹, ¹University of Alabama at Birmingham, ²Eli Lilly and Company, ³Cancer and Vascular Biology Research Center, The Bruce Rappaport Faculty of Medicine, Technion, Haifa, Israel

Collagens

B098 Poster Session II

Evolutionary origin of collagen IV in a unicellular relative of animals

Aaron Fidler, Sergei Chetyrkin, Sergei Boudko, Favour Akabogu, Justin Cartailier, Ly Hoang, Julie Hudson, Billy Hudson, *Vanderbilt University Medical Center*

B099 Poster Session I

Inhibition of Transglutaminase Activity in a Murine Model of Periodontal Disease Induces Altered Collagen Fiber Morphology

Emilie A. Rosset¹, Jessica Trombetta-eSilva¹, Dylan Brown¹, Glenn Hepfer², Peng Chen², Hai Yao^{1,2}, Amy D. Bradshaw^{1,3}, ¹Medical University of South Carolina, ²Clemson University, ³Ralph H. Johnson Veterans Affairs Medical Center

B100 Poster Session II

Acetyltransferase p300 inhibitor, L002 reverses hypertension-induced cardiac hypertrophy and fibrosis

Tianjiao Sun, Rahul Rai, Veronica Ramirez, Elizabeth Lux, Mesut Eren, Douglas Vaughan, Asish Ghosh, *Feinberg Cardiovascular and Renal Research Institute, Feinberg School of Medicine, Northwestern University*

B101 Poster Session I

3D Printing Networks of Type I Collagen with Tunable Fiber Alignment and Geometry

Bryan Nerger, Pierre-Thomas Brun, Celeste Nelson, *Princeton University*

B102 Poster Session II

Abnormal collagen post-translational chemistry and cross-linking causing bone fragility in Bruck Syndrome caused by compound heterozygous PLOD2 mutations

Charlotte Gistelincq, MaryAnn Weis, Jyoti Rai, Peter H. Byers, David R. Eyre, *University of Washington*

B103 Poster Session I

Glycation targets the same type I collagen helical domain sites as lysyl oxidase-mediated cross-linking

David Hudson¹, Marilyn Archer¹, Karen B. King², David R. Eyre, ¹University of Washington, ²University of Colorado School of Medicine

B104 Poster Session II

Visible Light Crosslinking of Type I Collagen 3D Bioprinted Tissues

David Bagley, Bowman Bagley, Joshua Valdez, *Advanced BioMatrix*

B105 Poster Session I

Identification of major collagen producing cells in adult mouse heart during disease

Hadi, Khalil., Bryan D Maliken, Onur Kanisicak, Robert N. Correll, Jeffery D Molkentin, *Cincinnati Children's Hospital Medical Center*

B106 Poster Session II

Type I Collagen binding to Fibronectin, Defining the high affinity interactive sites

Jonathan Picker, Wen Liu, Xiaowen Liang, Magnus Hook, *Texas A&M Health Science Center - Institute of Bioscience and Technology, Department of Biochemistry and Biophysics, Texas A&M University*

B107 Poster Session I

The first crystal structure of native collagen: A multiplexin-like domain present in prokaryotic hyaluronidase

Joo Hyoung Lee¹, Kanagalaghatta R. Rajashankar², Norbert Shormann¹, Selvarangan Ponnazhagan¹, Champion Deivanayagam¹, ¹The University of Alabama at Birmingham, ²Cornell University and NE-CAT Advanced Photon Source

B108 Poster Session II

The role of COL27A1 in skeletal development: mouse modeling of the Steel syndrome Puerto Rican founder allele and additional pathogenic variants from Turkish kindreds

Harikiran Nistala¹, Claudia Gonzaga-Jauregui¹, Kalyan Nannuru¹, Johanna Jimenez¹, John Dronzek¹, Saathyaki Rajamani¹, Silvia Smaldone¹, Richard A. Gibbs², James R. Lupski², Aris N. Economides, ¹Regeneron Genetics Center, *Regeneron Pharmaceuticals Inc.*, ²Baylor College of Medicine

B109 Poster Session I

Coordinate roles for collagen VI and Bgn in regulating tendon collagen fibril structure

Hai Pham¹, Marian Young¹, Sheila M. Adams², David E. Birk³, ¹NIH, ²University of South Florida, ³Morsani College of Medicine, Tampa, FL

B110 Poster Session II

7S Dodecamer of Collagen IV as Substrate of Lysyl Oxidase like-2 for the Screening of Anti-fibrotic Compounds

Mark G. Athanason, Alberto López Jiménez, Rafi Mohamed, Roberto M. Vanacore, *Vanderbilt University Medical Center*

B111 Poster Session I

Collagen XI Is a Critical Regulator in Tendon Fibrillogenesis

Mei Sun^{1,2}, Eric Y. Luo¹, Sheila M. Adams¹, Thomas Adams¹, Louis J. Soslowsky³, David E. Birk¹, ¹University of South Florida, ²Morsani College of Medicine, ³University of Pennsylvania

B112 Poster Session II

Regulation of the Sar1 GTPase cycle is necessary for collagen secretion from the endoplasmic reticulum

Miharu Maeda, Kota Saito, *Akita University, Graduate School of Medicine*

B113 Poster Session I

Scar-in-a-Jar, a novel in vitro screening tool for antifibrotics

Natasja S. Gudmann¹, Sarah R. Rønnow¹, Sarah Brockbank², Simon Cruwys², Morten A. Karsal¹, Diana J. Leeming¹, Jannie M. B. Sand¹, ¹Nordic Bioscience, ²Innovative Medicines Unit, *Grünenthal Group*

B114 Poster Session II

A Cysteine-Based Molecular Code Guides Collagen C-Propeptide Assembly

Rasia Li¹, Andrew DiChiara¹, Azade Hosseini¹, Darrell McCaslin², Matthew Shoulders, ¹MIT, ²UW-Madison

B115 Poster Session I

Species-specific collagen deposition in a xenograft model of the human digit

Russell Fernandes¹, Mary Ann Weis¹, David Hudson¹, David Eyre¹, William Landis², ¹University of Washington, *Seattle*, ²University of California, *San Francisco*

Poster Program

B116 Poster Session II

Chloride ions play both a signaling and a structural role in the assembly of collagen IV scaffolds

Ryan Bauer^{1,2}, Billy Hudson^{1,2,3,4,5,6,7,8}, Sergey Budko^{1,2}, ¹Center for Matrix Biology, ²Department of Medicine, *Division of Nephrology and Hypertension, Vanderbilt University Medical Center*, ³Department of Pathology, Microbiology, and Immunology, ⁴Department of Medical Education and Administration, ⁵Department of Cell and Developmental Biology, ⁶Department of Biochemistry, ⁷Vanderbilt-Ingram Cancer Center, ⁸Vanderbilt Institute of Chemical Biology, *Vanderbilt University Medical Center*

B117 Poster Session I

Heterogeneity of posttranslational modification in type I collagen from different tissues

Shinomi Yagi¹, Keisuke Tanaka¹, Yuki Taga¹, Shugo Tohyama², Eiji Kobayashi², Kazunori Mizuno¹, Shunji Hattori¹, ¹Nippi Research Institute of Biomatrix, ²Keio University School of Medicine

B118 Poster Session II

Bacterial modulation of ECM and contribution to tumor growth – a novel mechanism

Ritesh Kumar, John Taylor, Juan Xu, Yi Xu, *Texas A&M University*

LB02 Poster Session II

Determining the fates of misfolded type-I collagen C-propeptide variants associated with osteogenesis imperfecta (OI)

Michelle Huang, Azade S. Hosseini, Andrew S. DiChiara, Ngoc-Duc Doan, Amanda Del Rosario, Matthew D. Shoulders, *MIT*

LB03 Poster Session I

The Zebrafish crusher Mutation Disrupts Collagen Secretion and Cartilage Growth

Amy R. Rushing, Gokhan Unlu, and Ela W. Knapik, *Vanderbilt University Medical Center*

Elastic Fiber Proteins

B119 Poster Session I

Cutis Laxa Mutations in Fibulin-5 Decrease Elastin Deposition, GPCR and TGF- β Signaling

Erika Dreikorn, Zsolt Urban, *University of Pittsburgh Graduate School of Public Health*

B120 Poster Session II

Gene targeting of ADAMTSL3, a novel participant in the musculoskeletal system

Deborah Hoelting, Suneel Apte, *Cleveland Clinic Lerner Research Institute*

B121 Poster Session I

Upregulation of Fibulin-3 in human ovarian cancer: understanding the role of Fibulin-3 in normal oviductal biology in young and aged mice

Yazmin Brown¹, M Fairuz B Jamaluddin¹, Arnab Ghosh¹, Manish Kumar¹, Aysha Ali¹, Albert S. Mellick², Lucy Murtha³, Andrew Boyle³, Pradeep S. Tanwar¹, ¹University of Newcastle (Australia), ²Ingham Institute, *University of New South Wales, Sydney, Australia*, ³Hunter Medical Research Institute, *Newcastle, Australia*

LB04 Poster Session II

Zebrafish Elastin is Required for Cardiac Valve Development and Function

Michelle Zorrilla¹, Jerome P. Givi¹, Simon C. Watkins², Beth L. Roman¹, Kang Kim³, Zsolt Urban¹, ¹University of Pittsburgh Department of Human Genetics, ²Center for Biologic Imaging, ³Center for Ultrasound Molecular Imaging and Therapeutics

Poster Program

Matrix in Morphogenesis

B122 Poster Session II

Sned1 knockout causes neonatal lethality and craniofacial defects in mice

Anna Barque¹, Martin N. Davis¹, Kyleen Jan¹, Christina L. Nicholas¹, Richard O. Hynes², Alexandra Naba¹, ¹University of Illinois at Chicago, ²David H Koch Institute for Integrative Cancer Research, Massachusetts Institute of Technology

B123 Poster Session I

Laminin-Y1 cessary for Adult Murine Intestinal Epithelial-Mesenchymal Homeostasis

Karen Carlson^{1,2}, British Fields², Jennifer May², Irene Hernandez², Mark Zogg², Anne DeLaForest¹, Hartmut Weiler², Michelle Battle¹, ¹Medical College of Wisconsin, ²Blood Research Institute part of Versiti

B124 Poster Session II

ECM remodeling and focal adhesion activation direct airway epithelial branching morphogenesis

James Spurlin, Michael J. Siedlik, Mei Fong Pang, Sahana Jayaraman Celeste M. Nelson, Princeton University

LB05 Session I

Palate Development: Review of ECM Properties, Genes, Cell Movement. What's Next?

Kathy K. H. Svoboda, L. Bruno Ruest, Shaun Logan, M. Douglas Benson, Texas A&M College of Dentistry

Structure and Assembly of ECM

B125 Poster Session I

Unraveling the role of the extracellular matrix during kidney organoid maturation.

Thomas Geuens¹, Anika Schumacher¹, Timo Rademakers¹, Cathelijne van den Berg², Loes Wiersma², Ton

Rabelink², Clemens van Blitterswijk¹, Vanessa LaPointe¹, ¹MERLN Institute for Technology - Inspired Regenerative Medicine, Maastricht University, Maastricht, The Netherlands, ²Leiden University Medical Center, Leiden, The Netherlands

B126 Poster Session II

Identification of Two Novel Protein O-Glucosyltransferases That Modify Fibrillin-1 EGF Repeats

Daniel Williamson¹, Hideyuki Takeuchi¹, Robert S. Haltiwanger^{1,2}, ¹University of Georgia, ²Stony Brook University

B127 Poster Session I

The Role of Matrix Assembly Site Distribution in Aligned Fibronectin Fibril Formation

Carly Garrison, Jean Schwarzbauer, Princeton University

B128 Poster Session II

Perlecan knockdown significantly alters ECM composition during cartilage development

Alexander R. Ocken, Madeline Ku, Sarah Calve, Purdue University

B129 Poster Session I

Abnormal collagen fibril ultrastructure in abdominal aortic aneurysms

Blain Jones¹, Anna Debski¹, Jeff R. Tonniges¹, Ben Albert¹, David Yeung¹, Ed P. Calomeni¹, Michael Go¹, A. Mahajan², Chetan Hans², Gunjan Agarwal¹, ¹The Ohio State University, ²University of Missouri

B130 Poster Session II

Label-free Raman imaging of elastic fibers in disease and healthy mouse aortic tissues

Kaori Sugiyama¹, Julia Marzi², Eva Brauchlec^{2,3}, Yoshito Yamashiro¹, Katja Schenke-Layland^{2,3,4}, Hiromi Yanagisawa¹, ¹University of Tsukuba, Japan, ²Eberhard Karls University, Tübingen, Germany, ³NMI Natural and Medical Sciences Institute at the University of Tübingen, Reutlingen, Germany, ⁴Cardiovascular Research Laboratories, University of California

B131 Poster Session I

Investigation of fibronectin-heparan sulfate interactions during extracellular matrix assembly

Katherine Hill, Irene Raitman, Jean Schwarzbauer, Princeton University

B132 Poster Session II

Unicellular ancestry and role of the Goodpasture Antigen Binding Protein in the transition to animal multicellularity

Carl Darris¹, Francisco Revert², Roberto Gozalbo-Rovira², Andrew Fiegley¹, Juan Saus², Billy Hudson¹, ¹Vanderbilt University and Vanderbilt University Medical Center, ²FibroStatin S.L., Parc Científic Universitat de València

B133 Poster Session I

Neonatal Fibrin Polymerization Dynamics

Kimberly Nellenbach¹, A. Kyu¹, N. Guzzetta², A.C. Brown¹, ¹Joint Department of Biomedical Engineering, North Carolina State University and The University of North Carolina at Chapel Hill, ²Emory University School of Medicine and Children's Healthcare of Atlanta

B134 Poster Session II

In-silico definition of the matrisomes of three model organisms: Danio rerio, Caenorhabditis elegans, and Drosophila melanogaster

Martin N. Davis¹, Alina Teuscher², Elisabeth Jongasma², Jan Gebauer³, Collin Y. Ewald², Sally Horne-Badovinac¹, Alexandra Naba¹, ¹University of Illinois at Chicago, ²Eidgenössische Technische Hochschule (ETH) Zürich, ³University of Cologne

B135 Poster Session I

Classification of the collagen ECM in normal human tissue as a biomarker for future breast cancer incidence

Ryan Gigstad, Tianjie Wang, Yifei Liu, Menggang Yu, Yuming Liu, Adib Keikhosravi, Kevin W. Eliceiri, Patricia J. Keely, Matthew W. Conklin, University of Wisconsin

B136 Poster Session II

Halogenation of renal collagen IV scaffold in vivo

Paul Voziyan, Kyle Brown, Billy Hudson, Vanderbilt University Medical Center

B137 Poster Session I

Ex-vivo evaluation of mesenchymal ECM biodynamics by cross-disciplinary approaches in mouse models of GI pathologies

Véronique Pomerleau, Vilcy Reyes Nicolas, Raphaëlle Servant, François-Michel Boisvert, Michel Grandbois, Nathalie Perreault, Université de Sherbrooke

ECM of Inflammation and Immunity

B138 Poster Session II

Inflammatory Cytokines Promote Pro-Fibrotic Phenotype in Lung Fibroblast Subpopulations

Daniel Abebayehu, Thomas Barker, University of Virginia

B139 Poster Session I

Revealing silent pathological tissue states through extracellular matrix composition-to-structure translation

Elee Shimshoni¹, Ran Afik¹, Anjana Shenoy², Miri Adler¹, Luca Puricelli³, Odelia Mouhadeb⁴, Nathan Gluck⁴, Sigal Fishman⁴, Lael Werner⁵, Dror S. Shouval⁵, Chen Varol⁴, Alessandro Podestà³, Tamar Geiger², Paolo Milani³, Uri Alon¹, Irit Sagi¹, ¹Weizmann Institute of Science, ²Tel-Aviv University, ³University of Milan, ⁴Tel Aviv Sourasky Medical Center, ⁵Sheba Medical Center

Mechanosensing

B140 Poster Session II

Matrix Stiffness and Viscoelasticity Direct Fibroblast Spreading and Modes of Migration

Daniel Chester, Jeremy Nortey, Roni Lee, Ashley C. Brown, North Carolina State University

Poster Program

B141 Poster Session I

Kidney cell response to decellularized extracellular matrix with modified mechanical properties

Snehal Sant, Nicholas Ferrell, Vanderbilt University Medical Center

B142 Poster Session II

Mechanical stress attenuated inflammatory cytokines induced matrix degradative enzymes expression in chondrocyte by inhibition of NF-κB translocation

Takashi Ohtsuki¹, Omer Faruk Hatipoglu¹, Guole Liu¹, Akira Shinaoka² Keiichi Asano³, Takuto Nishimura¹, Junko Inagaki⁴, Keiichiro Nishida², Toshitaka Oohashi³, Satoshi Hirohata¹, ¹Department of Medical Technology, Okayama University Graduate School of Health Sciences, ²Department of Human Morphology, ³Molecular Biology and Biochemistry, ⁴Cell Chemistry, Graduate School of Medicine

Tumor Microenvironment

B143 Poster Session I

Dietary-regulated microbiota impact breast tumorigenesis and regulates the tumor stroma

Akiko Chiba, David R. Soto-Pantoja, Adam S. Wilson, Kenysya Y.J. Clear, Katherine L. Cook, Wake Forest University School of Medicine

B144 Poster Session II

Defining the Perlecan/HSPG2-Semaphorin Receptor Complex to Understand Cohesive Behavior of Metastatic Prostate Cancer

Tristen V. Tellman¹, Brian J. Grindel², Mary C. Farach-Carson¹, ¹University of Texas Health Science Center at Houston, School of Dentistry, ²The University of Texas MD Anderson Cancer Center

B145 Poster Session I

Dynamically Stiffening Niche Promote Malignant Transformation via Collective Mechanical Signaling

Adam J. Engler, University of California San Diego

B146 Poster Session II

Examining the biochemical properties of the novel ECM glycoprotein SNED1 to decipher its role in breast cancer metastasis

Alexandra M. Socovich, Martin N. Davis, Morgan C. Win, Alexandra Naba, University of Illinois at Chicago

B147 Poster Session I

Proteomic profiling of the extracellular matrix in pancreatic ductal adenocarcinoma reveals promoters of PDAC progression and metastasis

Chenxi Tian¹, Karl Clauser², Daniel Öhlund³, Steffen Rickelt¹, Ying Huang¹, Tommy Lidström³, Mala Gupta⁴, Steven A. Carr², David A. Tuveson⁵, Richard O. Hynes¹, ¹MIT, ²Broad Institute, ³Umeå University, ⁴New York University Winthrop Hospital, ⁵CSHL

B148 Poster Session II

Targeting Thrombospondin-1/CD47 signaling axis regulates hypoxia & metabolism in the tumor microenvironment to enhance anti-tumor immune responses

Elizabeth R. Stirling, Adam Wilson, Tiffany M. Newman, Liliya Yamaleyeva, Pierre L. Triozzi, David R. Soto-Pantoja, Wake Forest School of Medicine

B149 Poster Session I

Extracellular Vesicle Heterogeneity Profiling using High Resolution Flow Cytometry and Imaging

Hyun-ji Kim, Samuel Yunga, Fehmi Civitci, Matthew Rames, Justin Plaut, Dennis Duran, Xiaolin Nan, *Thuy Ngo, Oregon Health and Science University, *corresponding author

B150 Poster Session II

ECM Atlas 2.0: Integrating 50+ Proteomic ECM Profiles of Normal, Fibrotic, and Tumor Tissues

Karl Clauser^{1,2}, Huiming Ding³, Charles A. Whittaker³, Steven A. Carr^{1,2}, Richard O. Hynes³, Alexandra Naba⁴, ¹Broad Institute of MIT, ²Harvard, ³Massachusetts Institute of Technology, ⁴University of Illinois at Chicago

Poster Program

B151 Poster Session I

Potential Association of Expression of CD133 and CD44 with Distant Metastatic Relapse and Tumor Growth in Advanced Prostate Cancer

Meenakshi A. Chellaiah, Sunipa Majumdar, Renty B. Franklin, *University of Maryland School of Dentistry*

B152 Poster Session II

Non-neoplastic extracellular matrix components abrogate primary human glioma cell malignancy

Mark Murdock¹, Jordan Chang¹, George Hussey¹, Nduka Amankolor², Johnathan Engh², Stephen Badylak¹, *1McGowan Institute for Regenerative Medicine, 2UPMC Hillman Cancer Center*

B153 Poster Session I

Internalization of CD239, a laminin $\alpha 5$ receptor, in human breast cancer: a novel antigen for antibody-drug conjugates

Yamato Kikkawa¹, Yurie Enomoto-Okawa², Aiko Fujiyama², Takeshi Fukuhara¹, Nozomi Harashima¹,

Yumika Sugawara¹, Kazuki Ikari¹, Yoichi Negishi¹, Fumihiko Katagiri¹, Kentaro Hozumi¹, Motoyoshi Nomizu¹, Yuji Ito², *1Tokyo University of Pharmacy and Life Science, 2Kagoshima University*

ECM of Aging

B154 Poster Session II

Protective effects of neohesperidin dihydrochalcone against epidermal basement membrane damage through the inhibition of cathepsin S

Justine Renault¹, Juliette Sage², Ahlame Saïdi¹, Emmanuelle Leblanc², Sylvianne Schnebert², Carine Nizard², Robin Kurfurst², Gilles Lalmanach¹, Fabien Lecaille¹, *1INSERM, UMR 1100, Centre d'Etude des Pathologies Respiratoires, University of Tours, 2LVMH-Recherche, Hélios Centre, St Jean de Braye, France*

B155 Poster Session I

Laminin-511 is a key component of epidermal basement membrane to maintain epidermal homeostasis

Shunsuke Iriyama, Saori Nishikawa, Eisuke Takai, Junichi Hosoi and Satoshi Amano, *Shiseido Global Innovation Center*

Cardiovascular ECM

B156 Poster Session II

Homeostatic-like Cardiac Fibroblasts Turn off Angiogenesis Following Myocardial Infarction Wound Healing

Alan Mouton¹, Elizabeth R. Flynn¹, Yonggang Ma¹, Kristine Y. DeLeon-Pennell¹, Michael R. Garret¹, Tom C. Freeman², Merry L. Lindsey¹, *1University of Mississippi Medical Center, 2The Roslin Institute, University of Edinburgh*

B157 Poster Session I

Investigating the Effects of Type VIII Collagen Deficiency in Advanced Atherosclerosis

Cameron Harper^{1,2}, Joshua Lopes¹, Guangpei Hou^{1,2}, Michelle Bendeck^{1,2}, *1University of Toronto, 2Ted Rogers Centre For Heart Research*

B158 Poster Session II

The role of type VIII collagen in arterial vessel stiffening

Amanda Mohabeer^{1,2}, Guangpei Hou^{1,2}, Hangjun Zhang^{1,2}, Jeffery Kroetsch^{1,2}, Steffen Sebastian Bolz^{1,2}, Scott Heximer^{1,2}, Richard Assoian³, Michelle Bendeck^{1,2}, *1University of Toronto, 2Ted Rogers Centre For Heart Research, 3University of Pennsylvania*

B159 Poster Session I

Vascular Aggrecan and Versican Assays for the Evaluation of Aortic Tissue and Serum in Thoracic Aortic Aneurysm and Dissection.

Christopher Koch^{1,2}, Ling Li¹, Belinda Willard¹, Suneel Apte¹, *1Cleveland Clinic Lerner Research Institute, 2Cleveland State University*

B160 Poster Session II

Periodontal derived lipopolysaccharide stimulates glycosaminoglycan chain elongation in vascular smooth muscle cells

Kamato Danielle, Afroz Rizwana, Little

Peter, *School of Pharmacy, University of Queensland, Woolloongabba, Australia*

B161 Poster Session I

Fibrillin-1-mediated regulation of microRNA signaling and cell function

Rongmo Zhang, Karina A. Zeyer, Heena Kumra, Dieter P. Reinhardt, *McGill University*

B162 Poster Session II

Mechanoresponse to Periodic Hydrostatic Pressure Enables Fabrication of Human Arterial Graft

Junichi Saito¹, Utako Yokoyama¹, Toshio Takayama², Mitsuhiko Horade², Hiroaki Ito², Yoshinobu Sugo³, Kentaro Kurasawa³, Miyuki Ogawa³, Etsuko Miyagi³, Makoto Kaneko², Yoshihiro Ishikawa¹, *1 Cardiovascular Research Institute, Yokohama City University, Yokohama, Japan, 2 Department of Mechanical Engineering, Osaka University, Suita, Japan, 3 Department of Obstetrics and Gynecology, Yokohama City University, Yokohama, Japan*

B163 Poster Session I

Role of Fibronectin's extra domains EIIIA and EIIIB in early vascular development

Thao Nguyen, Amanda Del Rosario, Richard Hynes, *Massachusetts Institute of Technology*

B164 Poster Session II

Effects of sulforaphane, a plant-derived isothiocyanate, on cardiac fibroblast activation and extracellular matrix expression

Charity Fix, Amanda Carver, Mrinmay Chakrabarti, Mohamad Azhar, Wayne Carver, *University of South Carolina School of Medicine*

Skin BM-Wound Healing and Disease

B165 Poster Session I

Calreticulin Exploits TGF- β for Extracellular Matrix Induction Engineering A Tissue Regenerative Process

Unnati M Pandya, Ana Tellechea, Miguel A. Manzanares, Chinaza Egbuta, Julien Daubriac, Cougar Jaramillo, Marek Michalak, Feres Samra, and Leslie I Gold, *New York University School of Medicine*

LB06 Poster Session II

Recombinant elastonein accelerates epidermal neogenesis and reinstates epidermal integrity in skin wound healing

Won Bae Jeon, Jin-Kyu Park, *KNU*; Seong-Kyoon Choi, *DGIST*; Kyeong-Min Lee, *DGIST*; Bo Hyung Park, *DGIST*; Kyu-Shik Jeong, *KNU*

Growth Factors and ECM

B166 Poster Session II

A versatile salt-based method to immobilize glycosaminoglycans and create gradients of glycosaminoglycans and growth factors

Danique Hof, Elly Versteeg, Willeke Daamen, Toin Van Kuppevelt, *Radboud University Medical Center, RIMLS, Dept. of Biochemistry, Nijmegen, The Netherlands*

B167 Poster Session I

Conformational change of fibronectin during stretch influences growth factor binding domain availability

Emily Sevcik, Adam Feinberg, *Carnegie Mellon University*

B168 Poster Session II

Gastric hormone regulation of osteoblast lysyl oxidase is dysregulated in diabetes, leads to osteopenia, and is a potential therapeutic target

Philip Trackman¹, Eileen Daley¹, Sayon Roy², Neha Shrestha¹, *1Boston University Henry M Goldman School of Dental Medicine, 2Boston University School of Medicine*

Poster Program

B169 Poster Session I

Assessment of the effect of a pro-growth extracellular matrix protein, matrilin-2, on axonal sprouting in the post-stroke brain

Samuel Bridges, Michal Machnicki, S. Thomas Carmichael, *UCLA*

Heritable Disorders of Connective Tissue

B170 Poster Session II

A mutation in the fibronectin assembly domain impacts both fibronectin and collagen matrix assembly by fibroblast cells

Eli B. Cadoff¹, Ashley Drengler¹, Ruth Sheffer², Vardiella Meiner², Jean E. Schwarzbauer¹, *1Princeton University, 2Hadassah-Hebrew University Medical Center*

B171 Poster Session I

Zebrafish type I collagen mutants faithfully recapitulate human type I collagenopathies

Charlotte Gistelink¹, Ronald Y Kwon¹, Fransiska Malfait², Sofie Symoens², Matthew P. Harris³, Katrin Henke³, Michael B. Hawkins³, Shannon Fisher⁴, Patrick Sips², Brecht Guillemyn², Jan Willem Bek², Petra Vermassen², Hanna De Saffel², Paul Eckhard Witten², MaryAnn Weis¹, Anne De Paepe², David R Eyre¹, Andy Willaert², Paul J Coucke², *1Univeristy of Washington, 2Ghent Univeristy, 3Harvard Medical School, 4Boston University*

B172 Poster Session II

Angiotensin II Type 2 Receptor Partially Mediates Hypertension in Elastin Insufficiency

Michelle Lin¹, Beth A. Kozel², Robert P. Mecham¹, Carmen M. Halabi¹, *1Washington University School of Medicine, 2National Institutes of Health*

B173 Poster Session I

COL4A1 mutations cause neuromuscular disease with tissue-specific mechanistic heterogeneity.

Cassandre Labelle-Dumais, Vera

Schuitema, Genki Hayashi, Kendall Hoff, Wenhui Gong, Dang Q Dao, Peter Oishi, Marta Margeta, Douglas B. Gould, *Univeristy of California, San Francisco*

B174 Poster Session II

Circulating fibrillin-1 fragments in children and young adults with Marfan syndrome

Lynn M. Marshall¹, Eric J Carlson², Kathryn W. Holmes¹, Luciana T. Young^{3,4}, Shaine A. Morris^{5,6}, Jacqueline T. Hecht⁵, Mary J. Roman⁷, Angela T. Yetman⁸, Lynn Y Sakai^{1,2}, *1Oregon Health and Science University, 2Shriners Hospital for Children, 3University of Washington, 4Seattle Children's Hospital, 5University of Texas, 6Texas Children's Hospital Houston, 7Weill Cornell Medical Center, 8University of Nebraska and Children's Hospital & Medical Center*

B175 Poster Session I

A zebrafish platform to study new treatment options for Marfan syndrome

Patrick Sips, Petra Vermassen, Hanna De Saffel, Marjolijn Renard, Andy Willaert, Anne De Paepe, Paul Coucke, Julie De Backer, *Ghent University*

B176 Poster Session II

A new mouse model of chronic proteinuria due to a glomerular basement membrane laminin-521 polymerization defect

Steven Funk¹, Raymond H. Bayer¹, Karen K. McKee², Kazushi Odaka³, Hiroshi Nishimune³, Peter D. Yurchenco², Jeffrey H. Miner¹, *1Washington University, 2Rutgers University, 3University of Kansas Medical Center*

B177 Poster Session I

An atomistic view of collagen degradation in alkaptonuria cartilage by solid-state NMR

Wing Ying Chow¹, Brendan Norman², University of Liverpool, Hartmut Oschkinat¹, James Gallagher², *1Leibniz-Institut für Molekulare Pharmakologie (FMP Berlin), 2University of Liverpool*

LB07 Poster Session I

Somatic Activating Mutations in MAP2K1 Cause Melorheostosis

Heeseog Kang¹, Smita Jha¹, Zuoming Deng¹, Nadja Fratzl-Zelman² Wayne A. Cabral¹, Aleksandra Ivovic¹, Françoise Meylan¹, Eric P. Hanson¹, Eileen Lange¹, James Katz¹, Paul Roschger², Klaus Klaushofer² Edward W. Cowen¹, Richard M. Siegel¹, Timothy Bhattacharyya¹, Joan C. Marini¹, ¹National Institutes of Health (NIH), ²Ludwig Boltzmann Institute of Osteology

ECM in Musculoskeletal Biomechanics and Regeneration

B178 Poster Session II

Osteopontin/integrin $\alpha\beta 3$ Signaling Regulates Membrane Localization of CD44 and Migration of Osteoclasts by ERM-Actin Interaction with CD44

Meenakshi A. Chellaiah, *University of Maryland*

B179 Poster Session I

Pegvorhyaluronidase Alfa-mediated degradation of hyaluronan in skeletal muscle results in changes consistent with metabolic stress

Li Ma, Kevin Kwok, Curtis B. Thompson, Daniel Maneval, Rudolph D. Paladini., *Halozyne Therapeutics Inc.*

B180 Poster Session II

Molecular level detection of mechanical damage in collagen enabled by collagen hybridizing peptides

Yang Li¹, Jared Zitnay¹, Matthew Converse¹, Zhao Qin², Julian Kessler¹, Markus Buehler², Kenneth Monson¹, S. Michael Yu¹, Jeffrey Weiss¹, ¹University of Utah, ²MIT

ECM in Fibrosis

B181 Poster Session I

Therapeutic peptides based on CCN3 treat systemic sclerosis in a mouse model of the disease

Alex Peidl¹, Katherine Quesnel¹, Bruce Riser^{2,3}, and Science, Andrew Leask¹, ¹Western University, ²BLR Bio LLC, ³Rosalind Franklin University of Medicine

B182 Poster Session II

A High Content Imaging Screen For Modulators of Corticosteroid Mediated Extracellular Matrix Deposition

Christopher Wilson, Louis Yang, Chian Yang, Martin Henault, Thomas Vollmer, Megan Jabour, Yuan Wang, Erik Meredith, Heather MacLeod, Ganesh Prasanna, Amy Chen, *Novartis Institutes for Biomedical Research*

B183 Poster Session I

Global alignment of extracellular matrix by keloid fibroblasts

Fiona Kenny, Rachel Bell, Tanya Shaw, Brian Stramer, *King's College London*

B184 Poster Session II

A CRISPR/Cas9 in vitro human induced pluripotent stem cell (hiPSC) model to investigate the role of perlecan in cardiovascular fibrotic disease.

James Smith¹, Kate S. Dowding¹, Jamie L. Thompson¹, Cathy L. R. Merry¹, Megan Lord², Chris Denning¹, John Whitelock^{1,2}, ¹Wolfson Centre for Stem Cells, *Tissue Engineering and Modelling, University of Nottingham, Nottingham, United Kingdom*, ²Graduate School of Biomedical Engineering, *University of New South Wales, Sydney, Australia*

B185 Poster Session I

Idiopathic Pulmonary Fibrosis: Registration of extracellular matrix components comprising the fibroblastic focus

Jeremy Herrera¹, Colleen Forster², Thomas Pengo³, Angeles Monteres⁴,

Joe Swift⁵, Martin Schwartz⁵, Craig A Henke⁶, Peter B Bitterman⁶, *Wellcome Centre for Cell-Matrix Research, University of Manchester*, ²University of Minnesota, *Clinical and Translational Medicine Institute*, ³University of Minnesota Informatics Institute, *University of Minnesota*, ⁴Wythenshawe University Hospital, *Department of Histopathology, Manchester, UK*, ⁵Wellcome Centre for Cell-Matrix Research, *University of Manchester*, ⁶University of Minnesota, *Department of Medicine*

B186 Poster Session II

Elevated glucose alters expression of ECM- and cell adhesion-associated genes in a diabetic nephropathy cell model

Maria E. Vega*, John B. Finlay*, Jean E. Schwarzbauer, *equal contributors, *Princeton University*

B187 Poster Session I

Fibronectin o,o'-Dityrosine Crosslinking Attenuates Adhesion Signaling and Confers Protease Resistance

Morgan Locy¹, Sunad Rangarajan, Sufen Yang, Mark Johnson, Karen Bernard, Ashish Kurundkar, Jaeman Byun², Subramaniam Pennathur², Yong Zhou¹, Victor Thannickal¹, ¹University of Alabama at Birmingham, ²University of Michigan

B188 Poster Session II

Novel Tacrolimus (FK506) Analogue Inhibits FKBP10:Lysyl-Hydroxylase-2 (LH2) Collagen Processing in Idiopathic Pulmonary Fibrosis (IPF) Fibroblasts

Sarah Bui¹, Young-Ok You¹, Steven D Nathan², Geraldine Grant¹, George Mason University, Mikell Paige¹, ¹George Mason University, ²Inova Fairfax Hospital

Proteases and ECM Remodeling

B189 Poster Session I

Identification of a novel collagen-binding domain from Grimontia hollisae collagenase

B191 Poster Session I

A cleavage-resistant mouse knock-in mutant demonstrates that versican proteolysis is indispensable for interdigital web regression

Sumeda Nandadasa, Jacob Knorr, Christopher Koch, Maria Dours-Zimmermann, Karin Tran-Lundmark, Dieter Zimmermann, Sophie Valleix, Suneel S. Apte, *Cleveland Clinic Lerner Research Institute*

LB08 Poster Session II

Role of progesterone and protease ADAMTS 1 on migration and invasion of ovarian tumor cells

Maira de Assis Lima, Suelly Viera da Silva, Vanessa Morais Freitas, *University of Sao Paulo*

Keisuke Tanaka¹, Naoko Teramura¹, Osamu Hayashida¹, Katsumasa Iijima¹, Teru Okitsu², Kazunori Mizuno¹, Nippi Hattori¹, ¹Nippi Research Institute of Biomatrix, ²Institute of Industrial Science, *The University of Tokyo*

B190 Poster Session II

Vascular dimorphism via regulated extracellular matrix dynamics ensures rapid and selective umbilical artery occlusion at birth

Sumeda Nandadasa, Vai Pathak, Caroline M Kraft, Anna O'Donnell, Clare Hughes, Bruce Caterson, Karin Tran Lundmark, Martina Veigl, David Sedwick, Miriam S. Domowicz, Nancy B. Schwartz, Elliot Philipson and Suneel S Apte *Cleveland Clinic Lerner Research Institute*



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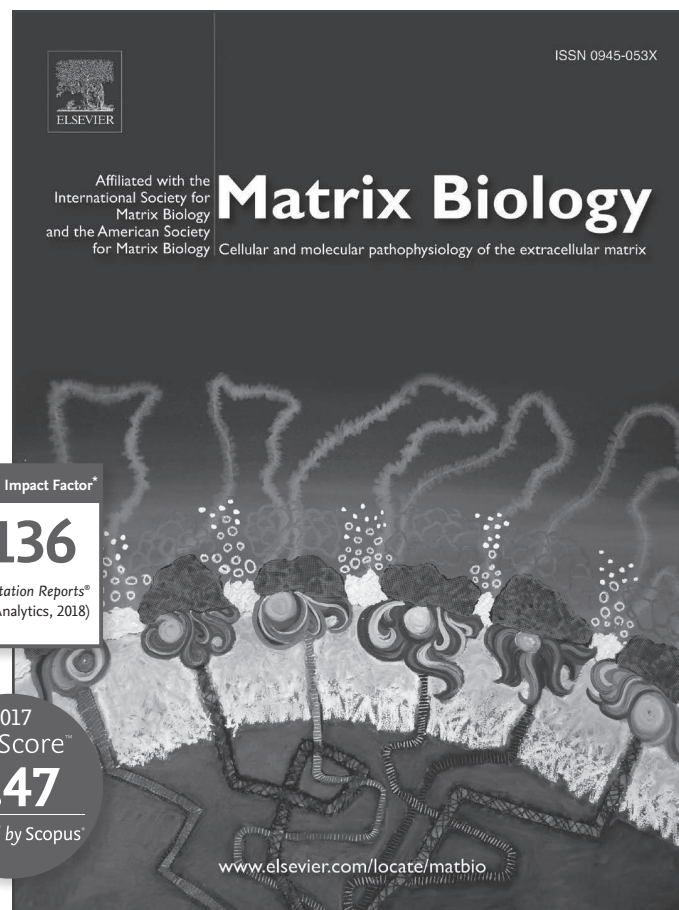
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Dr. Alexandra Naba, Rupert Timpl awardee

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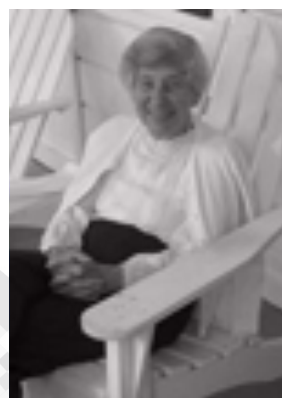
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J. Frederick Woessner, Jr.
1928-2017
University of Miami, Florida



Patricia Keely
1963-2017
University of Wisconsin -Madison



Liselotte (Lisa) Isabella Fessler
1924-2016
University of California Los Angeles



Editor-in-Chief:
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Agenda at a Glance

ECM Microenvironments in Disease, Aging, and Regeneration

For more information, visit www.asmb.net

Sunday, October 14th

10:00am–12:00pm

Guest Symposium I

Tissue Engineering Regenerative Medicine International Society (TERMIS)

LOCATION: Summerlin D

Guest Symposium II

The Histochemical Society

LOCATION: Summerlin E

Guest Symposium III

Alport Syndrome Foundation

LOCATION: Summerlin F

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

1:00–2:30pm Concurrent Sessions

Concurrent 1: Matricellular Proteins

LOCATION: Summerlin D

Concurrent 2: Proteoglycans

LOCATION: Summerlin E

Concurrent 3: Collagens

LOCATION: Summerlin F

2:30–2:45pm Break

2:45–4:15pm Concurrent Sessions

SIS 1: Trainee Led Session: Extracellular Vesicles– The Next SMALL Thing

LOCATION: Summerlin D

Concurrent 4: Elastic Fiber Proteins

LOCATION: Summerlin E

Concurrent 5: Matrix in Morphogenesis

LOCATION: Summerlin F

4:15–4:30pm Break

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

LOCATION: Summerlin E–F

6:00–7:00pm **Opening Reception**

LOCATION: Veranda

7:00–7:15pm **Founders Award Talk**

LOCATION: Summerlin E–F

7:15–8:00pm **Keynote Lecture**

LOCATION: Summerlin E–F

Monday, October 15th

7:15–8:30am **Career Mentoring Breakfast**

(Pre-registration Required)

LOCATION: Veranda C

7:30–8:30am **Breakfast**

LOCATION: Veranda

8:30–10:00am **Plenary I: Novel Approaches and Technologies to Investigate the Extracellular Matrix**

LOCATION: Summerlin E–F

10:00–10:30am **Coffee Break**

LOCATION: Veranda

10:30–12:00pm **Plenary II: ECM in Disease, Aging and Regeneration**

LOCATION: Summerlin E–F

12:00–12:30pm **ASMB Business Meeting**

LOCATION: Summerlin E–F

12:30–2:30pm **Poster Session I**

LOCATION: Summerlin A–B–C

Odd Number Boards Present

2:30–4:00pm **Concurrent Sessions**

Concurrent 6: Structure & Assembly of ECM

LOCATION: Summerlin D

Concurrent 7: ECM of Inflammation, Infection and Immunity

LOCATION: Summerlin E

Concurrent 8: Mechanosensing

LOCATION: Summerlin F

4:00–4:30pm **Coffee Break**

LOCATION: Veranda

4:30–6:00pm **Concurrent Sessions**

Concurrent 9: Tumor Microenvironment

LOCATION: Summerlin D

Concurrent 10: ECM of Aging

LOCATION: Summerlin E

Concurrent 11: Cardiovascular ECM

LOCATION: Summerlin D

Tuesday, October 16th

7:15–8:30am **Women Mentoring Women**

Breakfast (Pre-registration Required)

LOCATION: Veranda C

7:30–8:30am **Breakfast**

LOCATION: Veranda

8:30–9:30am **Plenary III: Signaling From the Matrix**

LOCATION: Summerlin E–F

9:30–10:15am **ISMB Distinguished Investigator Award Presentation**

LOCATION: Summerlin E–F

10:15–10:30am **Coffee Break**

LOCATION: Veranda

10:30–12:00pm **Plenary IV: Genetic Disorders Affecting Connective Tissue**

LOCATION: Summerlin E–F

12:00–2:00pm **Poster Session II**

LOCATION: Summerlin A–B–C

Even Number Boards Present

2:00–3:30pm **Concurrent Sessions**

Guest Symposium IV: Matrix Biology Ireland

LOCATION: Summerlin F

Concurrent 12: Skin BM, Wound Healing and Disease

LOCATION: Summerlin E

SIS 2: Trainee Led Session: Emerging Non-Canonical Intracellular Roles of Extracellular Matrix Proteins

LOCATION: Summerlin F

3:30–4:00pm **Coffee Break**

LOCATION: Veranda

4:00–5:30pm **Concurrent Sessions**

Concurrent 13: Growth Factors and ECM

LOCATION: Summerlin D

Concurrent 14: Heritable Disorders of Connective Tissue

LOCATION: Summerlin E

Concurrent 15: ECM in Musculoskeletal Biomechanics and Regeneration

LOCATION: Summerlin F

7:00–11:00pm **Banquet–Crimson**

(Advanced ticket purchase required.)

Wednesday, October 17th

8:00–9:00am **Breakfast**

LOCATION: Veranda

9:00–10:30am **Plenary V: Therapeutic Strategies for ECM Diseases**

LOCATION: Summerlin E–F

10:30–11:00am **Coffee Break**

LOCATION: Veranda

11:00am –12:30pm **Concurrent Sessions**

Concurrent 16: ECM in Fibrosis

LOCATION: Summerlin D

Concurrent 17: Proteases and ECM Remodeling

LOCATION: Summerlin E

SIS 3: Trainee Led Session: The Development and Use of 3D Systems to Investigate Biological Function

LOCATION: Summerlin F

