

# Tissue, Matrix & Pathobiology Meeting Program



**Oct. 22-25, 2023 | Salt Lake City, UT**

*Joint meeting of*



# PATHOBIOLOGY

## *Mechanisms of Disease* 2024

The Annual Meeting of American Society for Investigative Pathology

In 2024, the ASIP will host a standalone meeting that will leverage our society's unique strengths in the understanding of cellular and molecular mechanisms of disease. The annual meeting includes symposia and workshops communicating cutting-edge scientific sessions, commingled with educational and professional development sessions appealing to trainees and junior faculty.

Reflecting the ASIP membership, there will be a strong emphasis on:

- Liver pathobiology
- Neuropathology
- Gene expression
- Inflammation
- Immunopathology
- Cardiovascular pathobiology
- Mucosal pathobiology
- Endothelial and epithelial cell biology
- Cancer pathobiology
- Fundamental cell biology

We invite you to join us in staying abreast of leading scientific research in deciphering the pathways of health and pathology that will lead to disease diagnosis, prevention, and treatment.



**Kari Nejak-Bowen, MBA, PhD (University of Pittsburgh)**  
2024 Program Committee Chair

**BALTIMORE | APRIL 20-23**

For more information visit [ASIP2024.ASIP.org](https://ASIP2024.ASIP.org)

*Joint meeting of*



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## Thank You

ASMB, HCS, and the ASIP extend a heartfelt thank you to those who helped to make this meeting possible.

### **Joint Meeting Scientific Program Planning Committee**

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Albany Medical College

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Robin Lorenz, MD, PhD  
Genentech, Inc.

Liliana Schaefer, PhD  
Goethe University Frankfurt

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

## Society Officers & Council

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University of New Mexico

## Society Officers & Council

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#### FASEB Science Policy Committee

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University of Pittsburgh

#### Committee for Equal Representation and Opportunity Chair

Cecelia C. Yates, PhD  
University of Pittsburgh

## Awardees

### ASMB

#### Senior Investigator

Hans Peter Bächinger ▪ Shriners Hospital for Children and Oregon Health and Science University

#### Junior Investigator

Evangelia Bellas ▪ Temple University

#### Renato Iozzo Award

Valerie Horsley ▪ Yale University

#### Founders Award

Simon Schwörer ▪ Memorial Sloan Kettering Cancer Center

#### ISMB Distinguished Investigator

Taina Pihlajaniemi ▪ University of Oulu

### ASMB Travel

Neha Dinesh ▪ McGill University

Ryan Friedman ▪ University of Pennsylvania & Children's Hospital of Philadelphia

Ande Marini ▪ University of Pittsburgh

Andrew Miller ▪ University of Virginia

Aratrika Pan ▪ The Ohio State University

Aryssa Simpson ▪ University of North Carolina at Chapel Hill

Ekasit Sonpho ▪ Stowers Institute for Medical Research

Ross Wohlgemuth ▪ University of California Davis

### Iozzo Finalists

Neha Dinesh ▪ McGill University

Shweta Dipali ▪ Northwestern University

Andrew Miller ▪ University of Virginia

Aryssa Simpson ▪ North Carolina State University

Dharma Pally, PhD ▪ University of Illinois Chicago

Amanda Daulagala, PhD ▪ Medical University of South Carolina

### HCS

#### Postdoctoral Trainee

Nathaniel Lartey ▪ University of Michigan

#### Early Career Investigator

Vinicius Ribas ▪ Federal University of Minas Gerais

#### George Gomori Award

Denis Baski ▪ University of Washington

## Awardees

### HCS

Maryam Alanjawi ▪ University of Pittsburgh School of Medicine  
Erika Arias ▪ Northwestern  
Amanda Daulagala ▪ Medical University of South Carolina  
MaKenna DeYoung ▪ University of South Carolina Upstate  
Vivienne Fang ▪ Northwestern University Feinberg School of Medicine  
Maureen Haynes ▪ Northwestern University  
Summer Johnson ▪ University of South Carolina Upstate  
Christina Kingsley ▪ Medical University of South Carolina  
Shuhan Lu ▪ Albany Medical College  
Nina Martino ▪ Albany Medical Center  
Meredith Mayer ▪ Tulane National Primate Research Center  
Theresa Quintana ▪ Kansas State University  
Rachel Stubler ▪ Medical University of South Carolina

### ASIP

#### **Dani and Erik Zander Junior Faculty Scholar Award**

Jessica Fortin DVM, PhD ▪ Purdue University  
Pilar de la Puente, PhD ▪ Sanford Research/USD

#### **Monga-Hans Junior Faculty Scholar Award**

Evan Delgado, PhD ▪ University of Pittsburgh  
Traci Parry, PhD ▪ University of North Carolina Greensboro

#### **George K. Michalopoulos Junior Faculty Scholar Award**

Ian Cartwright, PhD, MS ▪ University of Colorado Anschutz Medical Campus  
Amy Engevik, PhD ▪ Medical University of South Carolina  
Daisy Shu, PhD ▪ Schepens Eye Research Institute of Mass Eye and Ear  
Gang Liu, PhD ▪ Tulane University

#### **2023 Experimental Pathologist-in-Training Award**

Kristen Engevik, PhD ▪ Baylor College of Medicine

#### **2023 Experimental Pathologist-in-Training Merit Award**

Xingsheng Ren, PhD ▪ Northwestern University

#### **2023 Experimental Pathologist-in-Graduate Training Award**

Janiece S. Glover, MS ▪ Medical University of South Carolina  
Brandon Lechrich, BS ▪ University of Pittsburgh

#### **2023 Experimental Pathologist-in-Graduate Training Merit Award**

Taylor Uselman, BS ▪ University of New Mexico Health Science Center

# Awardees

## ASIP

### **2023 Gold-Headed Cane Award**

Peter M. Howley, MD

### **2023 Rous-Whipple Award**

William G. Stetler-Stevenson, MD, PhD

### **2023 Outstanding Investigator Award**

Qin Yan, PhD

### **2023 Cotran Early Career Investigator Award**

Ronen Sumagin, PhD

### **2023 Women in Pathology Early Career Award for Advancement of Women in Experimental Pathology**

Jennifer A. Sanders, PhD

### **2023 Women in Pathology Award for Advancement of Women in Experimental Pathology Award**

Linda M. McManus, PhD

### **2023 Young Scientist Leadership Award**

Roberto Mota Alvidrez, MD

### **2023 Robbins Distinguished Educator Award**

Clifford V. Harding III, MD, PhD

### **GALL Trainee Scholar Award for Excellence in Cardiovascular Research**

Jaime Ibarrola, PhD ▪ Tufts University

Maria Zambrano ▪ Tufts University

### **Gotlieb Undergraduate Student in Pathobiology Scholar Award**

Taysha Jimenez-Rivera ▪ University of Puerto Rico

### **Monga-Hans Trainee Scholar Award for Excellence in Cardiovascular Research**

Erin Sanders ▪ Tufts University

### **Monga-Hans Trainee Scholar Award for Excellence in Liver Pathobiology Research**

Anu Balogun ▪ University of Pittsburgh

Shehnaz Bano, PhD ▪ University of Pittsburgh

### **Monga-Hans Trainee Scholar Award for Excellence in Neoplasia Research**

Abraham Bayer ▪ Tufts University

Francisco Carrillo-Salinas ▪ Tufts University

# Awardees

## ASIP

### **Marion and Lawrence (Larry) Muller Memorial Fund - ASIP Trainee Scholar Award for Excellence in Inflammation Research**

Sarah Dooley ▪ Medical University of South Carolina

Saranyaarajan Varadarajan, PhD ▪ University of Michigan

### **Marion and Lawrence (Larry) Muller Memorial Fund - ASIP Trainee Scholar Award for Excellence in Neurodegenerative Disease Research**

Michele Alves, PhD ▪ Ohio State University

### **A.D. Sobel Trainee Scholar Award**

Zhengping Hu, MD, PhD ▪ Schepens Eye Research Institute

Maryknoll Linscott ▪ Pennsylvania State University College of Medicine

Louisa Tichy ▪ University of North Carolina at Greensboro

### **ASIP Trainee Scholar Award**

Chhavi Goel, PhD ▪ University of Pittsburgh

Alyssa Gutierrez ▪ Medical University of South Carolina

Siddhi Jain, PhD ▪ University of Pittsburgh

Joud Mulla ▪ University of Pittsburgh

Zachary Wilson, PhD ▪ University of Michigan



**Save the Date!**  
**ASMB Basement Membrane Workshop**  
April 10 – 13, 2024  
University of Manchester, UK  
[www.asmb.net](http://www.asmb.net)

**Session Topics Include:**

- Mechanics
- Modelling and engineering
- Cell-matrix interactions
- Disease
- Remodeling, repair and regeneration
- Assembly
- Development




SCAN ME

# Exhibitors & Sponsors


Thank you to our exhibitors and sponsors for making this meeting possible!

**3Helix**  
www.3helix.com   
Booth 1

**The Histochemical Society (HCS)**  THE HISTOCHEMICAL SOCIETY  
www.histochemicalsociety.org  
Booth 4

**10X Genomics**  
www.10xgenomics.com   
Booth 1

**The Marfan Foundation** THE MARFAN FOUNDATION  
https://marfan.org 

**Alport Syndrome Foundation**   
https://alportsyndrome.org

**Nippi Inc.**  
www.nippi-inc.co.jp/english/business\_outline.aspx   
Booth 9

**American Society for Investigative Pathology (ASIP)**   
www.asip.org  
Booth 5


**Optics11 Life**  
www.optics11life.com   
Booth 7

**American Society for Matrix Biology (ASMB)**   
www.asmb.net  
Booth 3

**Poly Scientific R&D Corp.**   
www.polyrnd.com


**Earlier.org**  
https://earlier.org   
Friends for an Earlier Breast Cancer Test!

**Process Records Slide LTD**   
https://ihc-prs.com  
Booth 11

**Echelon Biosciences**   
www.echelon-inc.com  
Booth 8

**StemBioSys, Inc.**   
www.stembiosys.com  
Booth 6

**Elsevier**   
www.elsevier.com

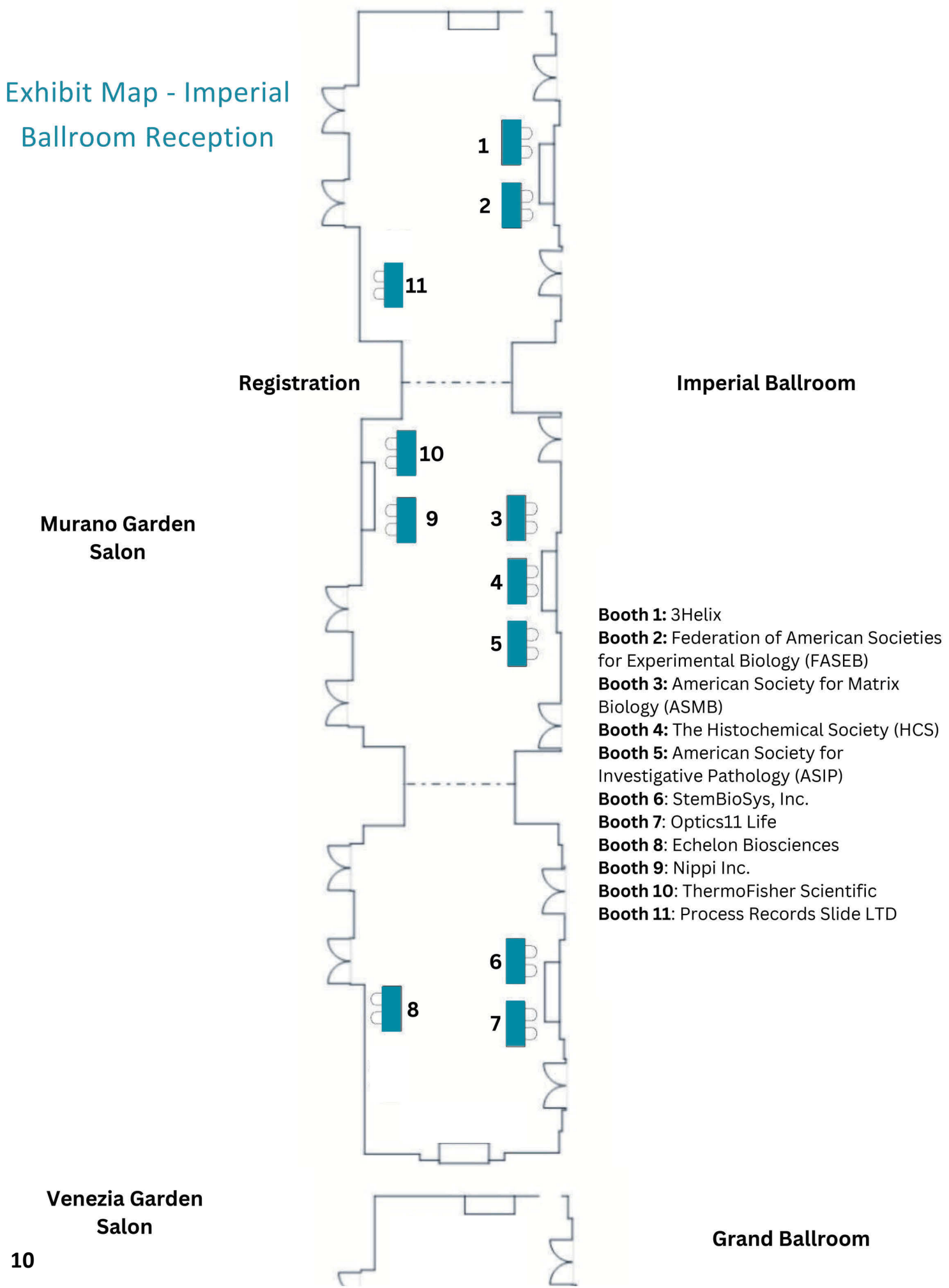
**ThermoFisher Scientific**   
www.thermofisher.com  
Booth 10

**Federation of American Societies for Experimental Biology (FASEB)**   
www.faseb.org  
Booth 2



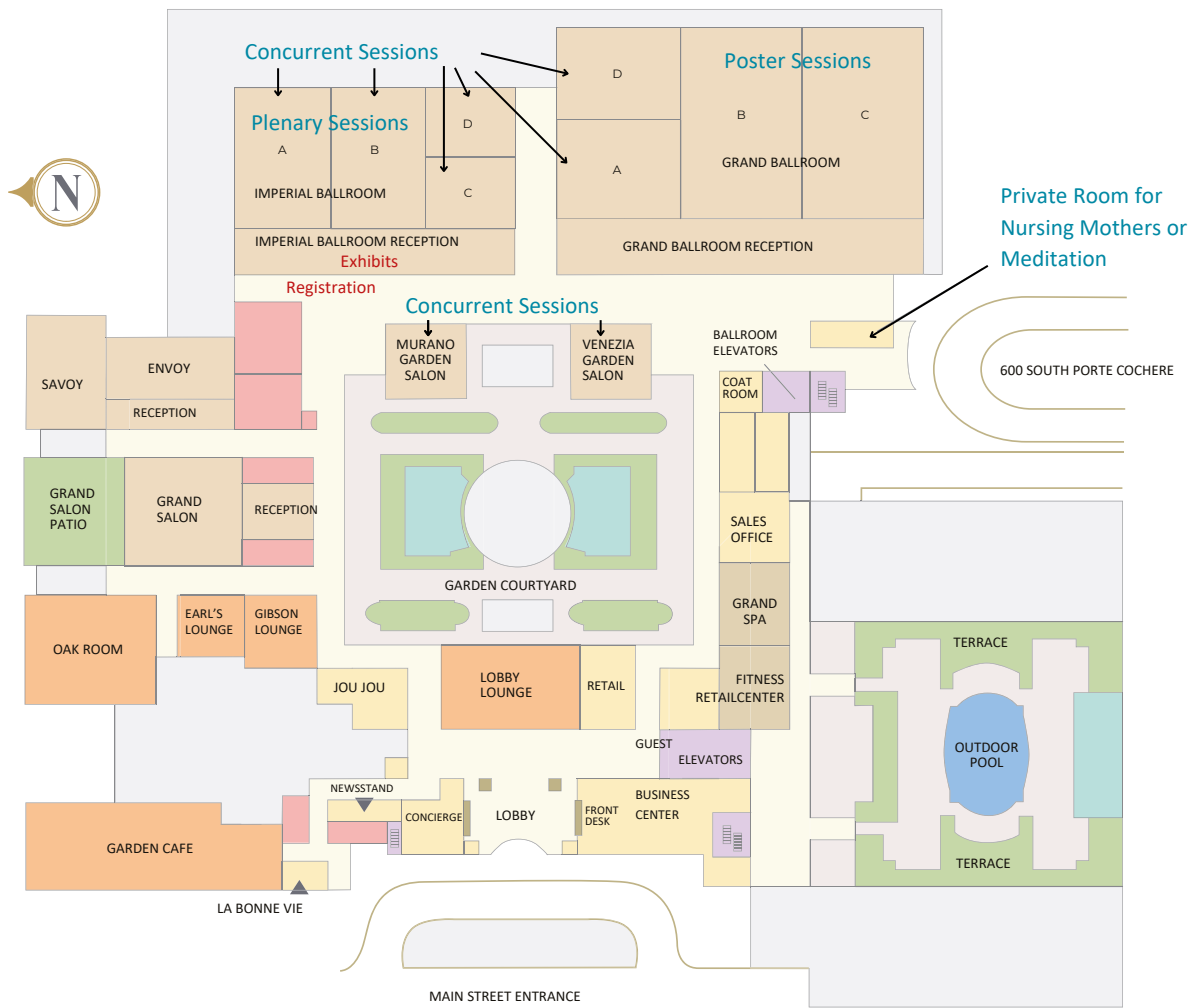
Funding for this conference was made possible (in part) by 1R13AR083265-01 from the National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS) and all co-funding support provided by National Heart, Lung, and Blood Institute (NHLBI). The views expressed in written conference materials 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.

# Exhibit Map - Imperial Ballroom Reception



# Meeting Floor Plan

## The Grand America Hotel, First Floor



## General Information

### Registration Hours

The meeting registration desk is located in the Imperial Ballroom Foyer of The Grand America. Name badges can be picked up at the Joint Meeting Registration Desk. The desk will be staffed during the following hours:

Sunday, October 22	10:00 AM–6:00 PM
Monday, October 23	7:30 AM–5:30 PM
Tuesday, October 24	7:30 AM–5:30 PM
Wednesday, October 25	8:00 AM–12:00 PM

### Registration

Registration fees include the main conference scientific sessions, access to the meeting app, online poster sessions, and the meals included below. Registration fees exclude hotel costs. On-site registration will be accepted through the website only.

### 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 Grand America and The Little America within the meeting block. Complimentary access is also provided by ASMB, HCS, and ASIP in the meeting spaces.

Network: GARed

Password: mayflower

### Business Meetings

All society members are encouraged and invited to attend the Member Business Meetings. 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 society exhibit tables. Non-members are welcome at business meetings to learn more about each community.

HCS: October 22 at 12:15 PM, Murano

ASIP: October 23 at 5:30 PM, Imperial A

ASMB: October 24 at 12:05 PM, Murano

## General Information

### Poster Sessions

All posters are available for preview on the Joint Meeting app for registered meeting participants. In-person poster boards will be set-up in the Grand Ballroom B-C. All posters will be on display throughout the entire meeting. In-person poster presentations will take place in two separate sessions.

Odd number board numbers will formally present on October 23 from 12:00–2:00PM, while even numbers boards will formally present on October 24 from 12:00–2:00PM.

- Poster Session I: Monday, October 23 from 12:00–2:00 PM
- Poster Session II: Tuesday, October 24 from 12:00–2:00 PM

The organizers are not responsible for any materials posted. Push pins will be provided. Set-up and breakdown for poster boards is as follows:

### Poster Set-up

Set-up posters starting Monday, October 23 at 7:30 AM

### Poster Break-down

Remove posters by Wednesday, October 25 at 12:00 PM

### Exhibits

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

Exhibits Schedule:

Sunday, October 22	8:00 AM–5:00 PM
Monday, October 23	8:00 AM–5:00 PM
Tuesday, October 24	8:00 AM–5:00 PM
Wednesday, October 25	8:00 AM–12:00 PM

### 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 Salt Lake City, check out the [Visit Salt Lake](#) website or contact the hotel concierge at (801) 258-6703.

### Special Needs

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

## General Information

### 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.

### Photography and Recording Policy

The 2023 Joint Meeting is committed to honoring the rights of copyright owners and to respectful sharing of scientific research and data. Attendees are expected to adhere to this policy. Icons will be sent to you in a separate email message for you to place on your poster to indicate if you agree or not to have your abstract presentation photographed or recorded

### Health and Safety Guidelines

Travel and the gathering of people in a public place incurs the risk of communicable diseases, including COVID-19. All meeting attendees should take personal responsibility to keep yourselves, other attendees, exhibitors, vendors, and staff safe, prior to and during the 2023 Joint Meeting of the American Society for Matrix Biology (ASMB), The Histochemical Society (HCS), and the American Society for Investigative Pathology (ASIP.)

Mask wearing is optional throughout the meeting but strongly recommended (face masks will be made available onsite upon request at the registration desk.) You are encouraged to practice health and safety habits that make you most comfortable.

Regardless of vaccination status, if you have symptoms of COVID-19, have tested positive, or are sick prior to traveling to the meeting, **please do not attend the meeting**. Email both Kendra LaDuca ([KLaDuca@histochemicalsociety.org](mailto:KLaDuca@histochemicalsociety.org)) and Lisa McFadden ([Lmcfadden@asip.org](mailto:Lmcfadden@asip.org)) to discuss your participation as a presenter/chair/poster presenter so that other arrangements can be made. Refund requests will be reviewed on a case-by-case basis.

In the event the local and state COVID-19 guidelines change, this information will be communicated to all attendees via the meeting app **Whova**. The 2023 Joint Meeting Planning Committee has the right to add health and safety requirements as deemed necessary.

Thank you in advance for your understanding and cooperation!

### Access the latest COVID-19 information:

[Utah Government Information  
& Updates](#)



[Centers for Disease Control  
& Prevention](#)



[World Health  
Organization](#)



# Scientific Program

**SATURDAY, OCTOBER 21, 2023**

Your society leadership is working for you! All three society Councils will be meeting on Saturday. These meetings are for Council members and invited guests only. Please come to the society *business meetings* during the course of the conference to hear all the latest news for each society. Business meeting times are listed in this program.

## ASIP Council Meeting

7:00 AM–5:00 PM

Location: Audubon (Third Floor)

## ASMB Council Meeting

1:00–3:00 PM

Location: Vienna (Third Floor)

## HCS Council Meeting

3:00–6:00 PM

Location: Sussex (Third Floor)

## Council Dinners

Off-Site



# THE HISTOCHEMICAL SOCIETY

The Histochemical Society is an organization of scientists passionate for the development and use of visual techniques providing biochemical and molecular information about the structure and function of cells, tissues, and organs.



## Grants and Awards Program

The Histochemical Society offers a number of awards to its members and colleagues whose research demonstrates a greater understanding and application of histochemical techniques. These awards target researchers throughout their careers. Membership is required for some awards.

Awards and Grants	Undergrad	Graduate	Fellow	Jr. Faculty	Established Investigator
Travel Awards	X	X	X	X	X
<b>Merit awards</b>					
Post-Docoral Trainee Award			X		
Early Career Investigator				X	
Carpenter-Rasch					X
Gomori					X
Lillie Award	X	X	X		
<b>Grants</b>					
Capstone	X				
Cornerstone		X			
Keystone			X		

Visit the HCS website to learn more about these award programs and how to apply

[www.HistochemicalSociety.org](http://www.HistochemicalSociety.org)

# The American Journal of Pathology

**Official journal of the American Society for Investigative Pathology**

*The American Journal of Pathology*, official journal of the American Society for Investigative Pathology, published by Elsevier, Inc., publishes high-quality original research reports, reviews, and commentaries related to the molecular and cellular basis of disease.

The Editor welcomes basic, translational, and clinical investigations that directly address mechanisms of pathogenesis or provide a foundation for future mechanistic inquiries. Examples of such foundational investigations include data mining, identification of biomarkers, molecular pathology, and discovery research. Foundational studies that incorporate deep learning and artificial intelligence are also welcome. High priority is given to studies of human disease and relevant experimental models using molecular, cellular, and organismal approaches.

A subscription to *The American Journal of Pathology* is included with membership to the ASIP, and publication fees are discounted for Regular Members.

[ajp.amjpathol.org](http://ajp.amjpathol.org)



**Editor-in-Chief:**  
**Martha Furie, PhD**



**Session 001: ASIP Neuropathology – Vasculopathies in Cognitive Impairment and Dementia**

8:30–11:00 AM

*Sponsored by the ASIP Neuropathology Scientific Interest Group*

**Co-Chair:** Elaine Bearer, MD, PhD ▪ University of New Mexico

**Co-Chair:** Gary Rosenberg, MD ▪ University of New Mexico

*Location: Grand A*

- Chair - Welcome and Introductions
- 8:30–9:00 AM  
***A Dynamic Duo: The Vicious Cycle of Microvascular Damage and Alzheimer's Disease***  
Elaine Bearer, MD, PhD ▪ University of New Mexico
- 9:00–9:30 AM  
***Vascular Contributions to Aging-Related Dementia***  
Gary Rosenberg, MD ▪ University of New Mexico
- 9:30–10:00 AM  
***What is 'Alzheimer's Disease'? The Neuropathological Heterogeneity of Clinically Defined Alzheimer's Dementia***  
Julie A. Schneider, MD ▪ Rush University
- 10:00–10:30 AM  
***Mild Traumatic Brain Injury Induces Microvascular Injury and Accelerates Alzheimer-like Pathogenesis in Mice***  
Zhen Zhao, PhD ▪ University of Southern California
- 10:30–11:00 AM  
***Neuropathologic Substrates of Vascular Cognitive Impairment: What Are They and How Do They Help Us Understand Pathogenesis?***  
Harry V. Vinters, MD ▪ University of California, Los Angeles
- ***Questions and Answers***

**Session 002: ASIP Liver Pathobiology – Mechanisms of Hepatotoxicity and Liver Injury**

8:30–11:00 AM

*Sponsored by the ASIP Liver Pathobiology Scientific Interest Group*

**Co-Chair:** Wen-Xing Ding, PhD ▪ University of Kansas Medical Center

**Co-Chair:** Lindsey Kennedy, PhD ▪ Indiana University

*Location: Imperial A*

- Chair - Welcome and Introductions
- 8:30–8:55 AM  
***Phosphatidic Acid in Acetaminophen-induced Liver Injury***  
Mitchell R. McGill, PhD ▪ University of Arkansas Medical School
- 8:55–9:20 AM  
***New Insights on Blood Coagulation in Acetaminophen-induced Liver Injury***  
James Luyendyk, PhD ▪ Michigan State University
- 9:20–9:45 AM  
***Lysosomal Biogenesis in Acetaminophen-Induced Liver Injury***  
Wen-Xing Ding, PhD ▪ University of Kansas Medical Center
- 9:45–10:10 AM  
***Macrophages Repair Necrotic Liver Lesions***  
Bin Gao, PhD ▪ National Institutes of Health

- 10:10–10:35 AM  
***Sphingosine-1 Phosphate Signaling in Alcohol-associated Liver Disease***  
Huiping Zhou, PhD ▪ Virginia Commonwealth University
- 10:35–11:00 AM  
***Mast Cell Regulation of Alcoholic Fatty Liver Disease***  
Heather Francis, PhD ▪ Indiana University
- **Questions and Answers**

**Session 003: ASIP Young Scientist Leadership Award Lecture and Meritorious Trainee Award Lectures**

8:30–11:00 AM

Location: Imperial D

**Co-Chair:** Joud Mulla ▪ University of Pittsburgh

**Co-Chair:** ZhengPing Hu, MD, PhD ▪ Schepens Eye Research Institute of Mass. Eye & Ear, Harvard Medical School

**Session Description:** This session will feature short talks from trainee meritorious awardees (Experimental Pathology-in-Training and Merit Awardees, Experimental Pathologist-in-Graduate Training and Merit Awardees) and the ASIP Young Scientist Leadership Award lecture.

- Chair - Welcome and Introductions
- 8:30–8:45 AM  
***Diverse Bacteria Possess Histamine Decarboxylase Genes and are Capable of Generating Histamine***  
Kristen Engevik, PhD ▪ Baylor College of Medicine  
**2023 Experimental Pathologist-in-Training Award Recipient**
- 8:45–9:00 AM  
***Acinetobacter Calcoaceticus Stimulates Inflammation in the Gastrointestinal Tract***  
Janiece Glover, MS, BS ▪ Medical University of South Carolina  
**2023 Experimental Pathologist-in-Graduate Training Award Co-Recipient**
- 9:00–9:15 AM  
***Complete Response of CTNNB1-Mutated Tumors to RNAi-Mediated Beta-Catenin Inhibition in Aggressive Immunocompetent Mouse Models***  
Brandon Lehrich, BS ▪ University of Pittsburgh  
**2023 Experimental Pathologist-in-Graduate Training Award Co-Recipient**
- 9–9:30 AM  
***Inflamed Intestinal Endothelial Cells Establish Self-Regulatory Niches via IL16 Dependent Recruitment of CD4 Expressing Vessel-Associated Macrophages***  
Xing-Sheng Ren, PhD ▪ Northwestern University  
**2023 Experimental Pathologist-in-Training Merit Award Recipient**
- 9:30–10:00 AM  
***Noradrenergic Stimulation Reconfigures Brain States***  
Taylor Uselman, BS ▪ University of New Mexico  
**2023 Experimental Pathologist-in-Graduate Training Merit Award Recipient**
- 10:00–11:00 AM  
***Unique and Novel Role for Smooth Muscle Cell ABCA in Cholesterol Efflux in Atherothrombosis***  
Roberto Mota Alvidrez, MD ▪ University of New Mexico  
**2023 ASIP Young Scientist Leadership Award Recipient**

**Session 004: ASMB Guest Symposium: TERMIS: Engineering the Matrix for Healing**

10:00 AM–12:00 PM

Location: Grand D

**Co-Sponsored by: The Tissue Engineering and Regenerative Medicine International Society, Inc. (TERMIS)**

**Chair:** Ashley Brown, PhD ▪ North Carolina State University and UNC-Chapel Hill

**Session Description:** This guest symposium will focus on new developments in the application of extracellular matrix (ECM) based and ECM inspired technologies for tissue engineering and regenerative medicine. This session will emphasize strategies for engineering the matrix for healing.

- Chair - Welcome and Introductions
- 10:00–10:30 AM  
***Extracellular Matrix and Islets Interactions and Their Role in Pathogenesis, Preservation, and Treatment***  
Cherie Stabler, PhD ▪ University of Florida
- 10:30–11:00 AM  
***A Thy-1 Negative Inflammatory Fibroblast Subpopulation Emerges as a Key Determinant of Fibrotic Outcomes to Biomaterials***  
Daniel Abeyayehu, PhD ▪ University of Virginia
- 11:00–11:30 AM  
***Structural and Mechanical Stability of Hemostatic Blood Clots***  
Valerie Tutwiler, PhD ▪ Rutgers University
- 11:30–11:45 AM  
**ABSTRACT 006 - *Regenerating the Pediatric Tympanic Membrane with a Decellularized Cartilage Matrix in an In Vivo Rat Model***  
Paul M. Gehret ▪ University of Pennsylvania
- 11:45 AM–12:00 PM  
**ABSTRACT 007 - *A Novel Treatment for Scleroderma Fibrosis: The CCN3-Based Peptide BLR-200 Impairs Bleomycin-Induced Skin Fibrosis***  
Andrew Leask, PhD ▪ University of Saskatchewan

**Session 005: ASMB Guest Symposium: Marfan Foundation: Aortic Disease in Marfan Syndrome and Related Conditions**

10:00 AM–12:00 PM

Location: Imperial C

**Co-Chair:** Josephine Grima, PhD ▪ The Marfan Foundation

**Co-Chair:** Lynn Sakai, PhD ▪ Oregon Health & Science University

- 10:00–10:30 AM  
***Targeting Aortic Aneurysm in Marfan Syndrome Mice***  
Silvia Smaldone, PhD ▪ Regeneron
- 10:30–11:00 AM  
***Sex-Specific Pathologies in the Aorta and Fat Tissue of Marfan Mice***  
Dieter P. Reinhardt, PhD ▪ McGill University
- 11:00–11:30 AM  
***Leveraging Molecular Patterns of Resiliency in Females to Understand Drivers of Aneurysm Severity in Marfan Syndrome***  
Sarah Parker, PhD ▪ Cedars-Sinai
- 11:30–11:45 AM  
**ABSTRACT 008 - *Fibulin-4 and Fibulin-5 Serve Distinct, Non-Overlapping Functions in Elastic Fiber Assembly and Cardiovascular Physiology***  
Michelle Lin, PhD ▪ Washington University in St. Louis School of Medicine

- 11:45 AM–12:00 PM  
**ABSTRACT 009 - *O-Glucose Modification of Fibrillin Epidermal Growth Factor Repeats is Essential for Mouse Lung Development***  
Sanjiv Neupane, PhD ▪ Stony Brook University

**Session 006: ASMB Guest Symposium: OARSI: Recent Progress in Osteoarthritis Research**

10:00 AM–12:00 PM

**Co-Sponsored by: *The Osteoarthritis Research Society International (OARSI)***

**Chair:** Frank Beier, PhD ▪ Western Bone and Joint Institute, University of Western Ontario

*Location: Venezia*

- 10:00–10:30 AM  
***Mouse Models to Understand Osteoarthritis Pathophysiology***  
Frank Beier, PhD ▪ University of Western Ontario
- 10:30–11:00 AM  
***The Role of Peripheral Nerves in Osteoarthritis***  
Anne-Marie Malfait, MD, PhD ▪ Rush University
- 11:00–11:30 AM  
***Omic Strategies in Osteoarthritis***  
Mohit Kapoor ▪ NielsenIQ
- 11:30–11:45 AM  
**ABSTRACT 010 - *Type V Collagen is Essential for the Development of Knee Articular Cartilage and Meniscus***  
Bryan Kwok ▪ Drexel University
- 11:45 AM–12:00 PM  
**ABSTRACT 011 - *NG2/CSPG4 Regulates Hypertrophic Differentiation in Mandibular Condylar Cartilage***  
David A. Reed, PhD ▪ University of Illinois, Chicago

**Session 007: HCS Concurrent: Higher Order Multi-Analyte Interrogation of Tissue**

10:00 AM–12:00 PM

**Chair:** Francesca Duncan, PhD ▪ Northwestern University

*Location: Murano*

- 10:00–10:30 AM  
***Multimiomics Analysis of Human Bone Marrow Microenvironment***  
Kai Tan, PhD ▪ University of Pennsylvania
- 10:30–10:50 AM  
**ABSTRACT 012 - *Mapping the Interactome of Matrisome Targets Using Extracellular Proximity Labeling (ePL)***  
David Peeney, PhD ▪ National Cancer Institute, National Institutes of Health
- 10:50–11:10 AM  
**ABSTRACT 013 - *Expanding the Pool of Transplantable Livers Using Molecular Profiling and Histopathological Analysis***  
Ankita Srivastava, PhD ▪ Thomas Jefferson University
- 11:10–11:30 AM  
**ABSTRACT 014 - *Hyaluronic Acid Production and Matrix Stiffening Promote Biliary Epithelial Cell Proliferation in Early Primary Sclerosing Cholangitis***  
Lorand Vancza, MD ▪ Stanford University
- 11:30–11:50 AM  
**ABSTRACT 015 - *A New Journey for Cancer Research -Targeting Glycosylation: Glysite™ Scout Glycan Screening Kits for Comprehensive Detection of Glycan Expression***  
Shuhui Chen, PhD ▪ Vector Labs

**Session 008: HCS Symposium: Viral Persistence - What Did COVID Teach Us About Preparing for the Next Pandemic?**

10:00 AM–12:00 PM

**Co-Chair:** A. Sally Davis, DVM, PhD, DACVP, DACVM ▪ Horner Davis Consulting

**Co-Chair:** Stephen Hewitt, MD, PhD ▪ National Institutes of Health

*Location: Imperial B*

- 10:00–10:30 AM  
***When Immunity Causes Mischief on Ways of Rebalancing Immune Responses to Counteract Viral Immunopathology***  
Barry T. Rouse, DVM, PhD, DSc ▪ University of Tennessee Knoxville
- 10:30–11:00 AM  
***Dengue Immunity and Pathogenesis: Exploring Host-Virus Interaction and Identifying New Research Directions***  
Marcos J. Ramos-Benitez, PhD ▪ Ponce Health Sciences University/Ponce Research Institute
- 11:00–11:30 AM  
***SARS-CoV-2 Infection and Persistence in the Human Body and Brain at Autopsy***  
Sabrina Ranelli, PhD ▪ National Institutes of Health
- 11:30 AM–12:00 PM  
***Panel Discussion, Questions and Answers***

**Session 009: ASIP Trailblazers – Young Investigator Short Talks**

11:00 AM–12:00 PM

***Sponsored by the ASIP Committee for Career Development and the ASIP Women in Pathology***

**Co-Chair:** Andrew Duncan, PhD ▪ University of Pittsburgh

**Co-Chair:** Pilar de la Puente, PhD ▪ Sanford Research

*Location: Grand A*

- Chair - Welcome and Introductions
- 11:00–11:05 AM  
***Pilar Poes: Becoming a Researcher and Building Community***  
Vik Meadows, PhD ▪ Rutgers University
- 11:05–11:10 AM  
***Bringing Together Technology and Brain Health: My Path to Pathology***  
Taylor Uselman ▪ University of New Mexico
- 11:10–11:15 AM  
***Through the Endothelium and Beyond!***  
Nakisha S. Rutledge, PhD ▪ University of Chicago
- 11:15–11:20 AM  
***How Opportunities Shape Our Scientific Career***  
Francisco Carrillo-Salinas, PhD ▪ Tufts University
- 11:20–11:25 AM  
***My Brazilian Magical Formula in Science Career***  
Michele Joana Alves, PhD ▪ The Ohio State University
- 11:25–11:30 AM  
***Surviving and Thriving: From Microbes to Me***  
Janiece Glover, MS, BS ▪ Medical University of South Carolina
- 11:30–11:35 AM  
***Emerging Approaches of IL-6-Driven Endothelial Dysfunction***  
Ramon Bossardi Ramos, PhD ▪ Albany Medical College

- 11:35–11:40 AM  
***From Sydney to Boston: My International Eye Research Career***  
Daisy Shu, PhD ▪ Schepens Eye Research Institute/Harvard Medical School
- 11:40–11:45 AM  
***Thrombi, Threads and Thrills: A Saudi Journey from Liver Lore to U.S. Lab***  
Joud Mulla, BS, MS ▪ University of Pittsburgh
- ***Questions and Answers***

#### **Session 010: ASIP Trainee Highlights Poster Session**

12:00–1:00 PM

Location: Grand A

**Session Description:** This Highlights poster session will feature the 20 posters noted below from trainee members, selected from submitted abstracts. Diversity within the society (geographic, organ system, approach, etc.) will be featured.

- Louisa Tichy, MS ▪ University of North Carolina at Greensboro  
**ABSTRACT 136 - *Tumor Bearing Results in Metabolic Dysfunction and Skeletal Muscle Wasting in Apc(min/+) Mice***
- Rachel Edens, BS ▪ Medical University of South Carolina  
**ABSTRACT 210 - *Commensal Microbes Limit Fusobacterium Nucleatum Colonization of Human Bacterial Bioreactors***
- Giesse Albeche Duarte, BA, MS ▪ Albany Medical College  
**ABSTRACT 146 - *Integrin alpha3beta1 Regulates Mmp9 mRNA Alternative Polyadenylation in Skin Tumors and Wounds***
- Erika Arias ▪ Northwestern University  
**ABSTRACT 253 - *PECAM-1 Blockade Modulates Leukocyte Extravasation into the Subcortex After Ischemic Stroke and Reperfusion***
- Junyan Tao, BS ▪ University of Pittsburgh  
**ABSTRACT 227 - *Co-Activation of Beta-catenin with Nuclear Factor Erythroid 2-Related Factor 2 and MET: Biological and Therapeutic Implications***
- Stephen Richbart, BS ▪ Marshall University  
**ABSTRACT 152 - *The Use of the Three-Dimensional Spherical Invasion Assay to Measure the Invasive Activity of Human Cancer Cells***
- Anya Singh-Varma, BS ▪ University of Pittsburgh School of Medicine  
**ABSTRACT 225 - *Stellate Cell Wnts Regulate Endothelial Cell-Hepatocyte Zonation to Maintain Hepatic Metabolic and Proliferative Homeostasis***
- Amanda Sugrue, BS ▪ Marshall University  
**ABSTRACT 179 - *The Matrigel Duplex Assay: A Sensitive Method to Measure Retinal Angiogenesis***
- Taiwo Ademoye, BS, MS ▪ Purdue University  
**ABSTRACT 242 - *Evaluation of the Alpha-synuclein and Tau Anti-fibrillary Activity of 2-Amino-4-Methoxybenzothiazole Derivatives***
- Esther Arpigny ▪ University of Liège  
**ABSTRACT 137 - *Identification of the Roles of ADAMTS12 Secreted by Stellate Cells during Tumor Progression in Cholangiocarcinoma***
- Asm Sakhawat Hossain, MS Pharm ▪ University of Tsukuba  
**ABSTRACT 176 - *A Novel Mutation in the Hybrid1 Domain of the Fibrillin 1 Gene Causes an Abnormal Skin Phenotype***
- Siddhi Jain, PhD ▪ University of Pittsburgh  
**ABSTRACT 224 - *Pivotal Role of MET in Promoting Liver Regeneration Following Acetaminophen Hepatotoxicity Identified Using Liver-Specific Knock-Out and Pharmacological Inhibition Strategies in Mice***
- Michele Alves, PhD ▪ The Ohio State University  
**ABSTRACT 241 - *Brainstem CircRNAs Regulation in Neonatal Sepsis***

- Chhavi Goel, PhD ▪ University of Pittsburgh  
**ABSTRACT 220 - Targeted Hepatocyte-Specific  $\beta$ -catenin Overexpression Facilitates Improved Biliary Repair During Intrahepatic Cholestasis**
- Vivienne Fang, BS ▪ Northwestern University  
**ABSTRACT 218 - The Role of CCR2+ Myeloid Cell Transmigration in Non-Proliferative Diabetic Retinopathy**
- Joy Winfield ▪ Columbia University  
**ABSTRACT 139 - GP78 Expression Activates Breast Cancer Tumor Growth Through Immunogenetic, Lipogenic, and Endoplasmic Reticulum Stress Relief Pathways**
- Reagan Light ▪ Marshall University  
**ABSTRACT 247 - Use of Structure-Activity Relationship (SAR) Studies to Design Region B Capsaicin Analogs with Robust Anti-Cancer Activity**
- Maryam Alanjawi ▪ University of Pittsburgh  
**ABSTRACT 252 - The Histone Modification H3K4me2 and the DNA Demethylase TET2 Coordinately Regulates Microvascular SMC Recruitment and Coverage During Hindlimb Ischemia-Induced Angiogenesis**
- Justin Merritt, BS ▪ Marshall University  
**ABSTRACT 255 - The Inhibition of the Alpha7-Nicotinic Acetylcholine Receptor Blocks Retinal Angiogenesis: Potential Applications in ARMD and Diabetic Retinopathy**
- Kushal Modi ▪ Marshall University  
**ABSTRACT 248 - Anti-Cancer Activity of Non-Pungent Region C Capsaicin Analogs**

**HCS: Business Meeting and Luncheon (RSVP Required for Luncheon)**

12:15–1:00 PM

Location: Murano

Join the leadership of the Histochemical Society to discuss the business of the past year and the goals for the coming year. Nominations for a council position will be accepted and awardees will be recognized. **ALL are invited to attend. Please RSVP for lunch.**

**Session 011: ASIP Cancer Pathobiology – Cancer Metabolism, Metastasis, and Therapeutic Implications**

1:00–4:00 PM

**Sponsored by the ASIP Cancer Pathobiology Scientific Interest Group**

**Co-Chair:** Qing Zhang, PhD ▪ UT Southwestern Medical Center

**Co-Chair:** Piyali Dasgupta, PhD ▪ Marshall University

Location: Imperial A

- Chair - Welcome and Introductions
- 1:00–1:45 PM  
**Cellular Decisions and the Language that Unites Them**  
Jared Rutter, PhD ▪ University of Utah
- 1:45–2:30 PM  
**Targetable Metabolic Dependencies of Latent Brain Metastatic Cells**  
Srinivas Malladi, PhD ▪ University of Texas Southwest Medical Center

- 2:30–3:15 PM  
**Nutrients' Influences on Cancer** Jing Chen, PhD ▪ University of Chicago
- 3:15–4:00 PM  
**Targeting Iron Metabolism in Cancer** Mei Yee Koh, PhD ▪ University of Utah
- **Questions and Answers**

**Session 012: ASIP and SCVP Cardiovascular Pathobiology – Ramifications of SARS-CoV-2 Infection on the Heart**

1:00–4:00 PM

**Co-Sponsored by the Society for Cardiovascular Pathology (SCVP)**

**Co-Chair:** James Stone, MD, PhD ▪ Massachusetts General Hospital

**Co-Chair:** Jonathon W. Homeister, MD, PhD ▪ University of North Carolina

*Location: Imperial B*

- Chair - Welcome and Introductions
- 1:00–1:35 PM  
**A History of Humans and Coronaviruses: From Obscurity to SARS-CoV-2** Stephen Goldstein, PhD ▪ University of Utah
- 1:35–2:10 PM  
**Modeling Cardiac SARS-CoV-2 Infection Using Induced Pluripotent Stem Cells** Arun Sharma, PhD ▪ Cedars-Sinai Medical Center
- 2:10–2:45 PM  
**SARS-CoV-2 Affects Electrical and Mechanical Function of Human Pluripotent Stem Cell-Derived Cardiomyocytes** Silvia Marchiano, PhD ▪ University of Washington
- 2:45–3:20 PM  
**Differential Cardiomyocyte Dysfunction Induced by Natural and Stabilized SARS-CoV-2 Spike Protein Variants** Roberto Cattaneo, PhD ▪ Mayo Clinic
- 3:20–3:55 PM  
**Targets and Immune Pathogenesis of SARS-CoV-2 in the Cardiovascular System** Kory J. Lavine, MD, PhD ▪ Washington University
- **Questions and Answers**

**Session 013: ASIP Liver Pathobiology – Liver Growth Control: From Maintenance and Regeneration to Disease**

1:00–4:00 PM

**Co-Sponsored by the ASIP Regenerative Medicine and Stem Cells Scientific Interest Group and the ASIP Liver Pathobiology Scientific Interest Group**

**Co-Chair:** Andrew W. Duncan, PhD ▪ University of Pittsburgh

**Co-Chair:** Vik Meadows, PhD ▪ Rutgers University

*Location: Grand D*

- Chair - Welcome and Introductions
- 1:00–1:30 PM  
**Stranger Things: Nuclear Receptors and Liver Biology** Sayeepriyadarshini (Sayee) Anakk, PhD ▪ University of Illinois Urbana-Champaign
- 1:30–2:00 PM  
**Network Modeling of Liver Renewal and Regeneration Dynamics** Raj Vadigepalli, PhD ▪ Thomas Jefferson University

- 2:00–2:30 PM  
***The Role of Beta-Catenin in Cholestatic Liver Disease***  
Kari Nejak-Bowen, MBA, PhD ▪ University of Pittsburgh
- 2:30–3:00 PM  
***Engineering Liver Tissues for Disease Modeling and Regenerative Medicine***  
Regeant Panday, PhD ▪ University of Illinois at Chicago
- 3:00–3:30 PM  
***Fishing for Liver Cancer Therapeutics***  
Kimberley Evason, MD, PhD ▪ University of Utah
- 3:30–4:00 PM  
***Hepatic Ploidy Populations in Compensatory Liver Regeneration***  
Andrew W. Duncan, PhD ▪ University of Pittsburgh
- ***Questions and Answers***

**Session 014: ASMB Concurrent: Matrix Degradation: MMPs, ADAMTS, and Proteases**

1:00–2:30 PM

*Location: Imperial D*

**Chair:** Dirk Hubmacher, PhD ▪ *Icahn School of Medicine at Mount Sinai*

- 1:00–1:30 PM  
***ADAMTS Proteases and ADAMTS-Like Proteins in Skeletal Muscle***  
Dirk Hubmacher, PhD ▪ Icahn School of Medicine at Mount Sinai
- 1:30–1:45 PM  
***ABSTRACT 016 - Collagen Distribution in Mouse Embryo Abdominal Wall***  
Kentaro Ikemura, PhD ▪ Okayama University
- 1:45–2:00 PM  
***ABSTRACT 017 - Conditional Inactivation of ADAMTS6 Improves Aortic Wall Structure in Mouse Models of Marfan Syndrome***  
Deborah E. Seifert ▪ Case Western Reserve University
- 2:00–2:15 PM  
***ABSTRACT 018 - Regulation of TIMPs Through MMP-Dependent Cleavage***  
Sasha Coates-Park ▪ National Institutes of Health
- 2:15–2:30 PM  
***ABSTRACT 019 - Unveiling New Immunomodulatory Actions of the Extracellular Protease ADAMTS1: Involvement of Different Substrates at Different Scenarios***  
Juan Carlos Rodríguez-Manzanaque, PhD ▪ GENYO. Centre for Genomics and Oncological Research: Pfizer/Universidad de Granada/Junta de Andalucía

**Session 015: ASMB Concurrent: Host-Tumor Interactions**

1:00–2:30 PM

*Location: Grand A*

**Chair:** Michael R. Angelo, PhD ▪ Stanford University

- 1:00–1:30 PM  
***A Spatial Framework for Tumor Immune Interactions in Breast Cancer***  
Michael R. Angelo, PhD ▪ Stanford University

- 1:30–1:45 PM  
**ABSTRACT 020 - Modeling the Influence of Stroma in Ovarian Cancer Drug Resistance in a Microvascularized Multiniche Tumor-On-a-Chip**  
Pilar de la Puente, PhD ▪ Sanford Research
- 1:45–2:00 PM  
**ABSTRACT 021 - Early Lung Cancer Progression is Driven by Resident Fibroblast-Produced Extracellular Matrix Protein Tenascin-C**  
Shiela C. Samson, PhD ▪ University of Utah
- 2:00–2:15 PM  
**ABSTRACT 022 - Microbial-Host Co-Metabolite Hippurate Reduces Breast Cancer Growth and Modulates Tumor Fibrosis**  
Adam S. Wilson ▪ Wake Forest University School of Medicine
- 2:15–2:30 PM  
**ABSTRACT 023 - Deciphering the Dual Role of ADAMTS2 on Cancer Progression: From ECM to Immunity**  
Joannes Loïc ▪ University of Liège

**Session 016: ASMB Concurrent: Matrix Resources, Big Data, and Data**

**Integration 1:00–2:30 PM**

*Location: Imperial C*

**Chair:** Valerio Izzi, PhD ▪ University of Oulu

- 1:00–1:30 PM  
**Tool Building for the ECM Community**  
Valerio Izzi, PhD ▪ University of Oulu
- 1:30–1:45 PM  
**ABSTRACT 027 - MatrisomeDB: An ECM Proteomics Tool to Facilitate Biomarker Discovery**  
Nandini Kapoor ▪ University of Illinois, Chicago
- 1:45–2:00 PM  
**ABSTRACT 026 - Multi-Omics Characterization of Matrisome Dynamics During IPF Pathogenesis**  
Sarah Lloyd ▪ AbbVie
- 2:00–2:15 PM  
**ABSTRACT 025 - Mechanical Stiffness Regulates Epigenetic Control of Cardiac Fibroblast Gene Expression**  
Jordan E. Morningstar ▪ Medical University of South Carolina
- 2:15–2:30 PM  
**ABSTRACT 024 - Investigating the Regulatory Impact of Collagen Type XI N-terminus Domain (NTD) Variants on Collagen Self-assembly Kinetics and Insights on the Molecular Interactions**  
Abu Sayeed Chowdhury ▪ Boise State University

**Session 017: HCS Concurrent: Cancer: Imaging Immuno-Oncology**

**1:00–2:30 PM**

*Location: Murano*

**Co-Chair:** Lisa Ann Ridnour, PhD ▪ National Institutes of Health

**Co-Chair** Stephen M. Hewitt, MD, PhD ▪ National Institutes of Health

- 1:00–1:30 PM  
**Adjuvant COX Inhibition Augments Type I Interferons, STING Signaling and Cytolytic T Cell Infiltration in Irradiated Murine 4T1 TNBC Tumors**  
Lisa Ann Ridnour, PhD ▪ National Institutes of Health
- 1:30–2:00 PM  
**Macroscopy FRET FLI Monitors Cancer Antibody Drug-Target Engagement In Vivo**  
Margarida Barroso, PhD ▪ Albany Medical College

- 2:00–2:15 PM  
**ABSTRACT 028 - Immune Checkpoint Protein Expression Patterns in Gastric Cancer: Unraveling the Immunological Landscape**  
Babajide Oluwaseun Ajayi, PhD ▪ Ajayi Crowther University
- 2:15–2:30 PM  
**ABSTRACT 029 - Fluorescence Resonance Energy Transfer Based Molecular Beacon Probe for In Situ Hybridization**  
Narantsog Choijookhuu, PhD ▪ University of Miyazaki

**Session 018: HCS Concurrent: Tissue Clearing and Expansion**

1:00–2:30 PM

**Chair:** Douglas L. Rosene, PhD ▪ Boston University School of Medicine

*Location: Venezia*

- 1:00–1:25 PM  
**ABSTRACT 033 - A New View: Quantifying Cellular Spatial Relationships in CLARITY-Processed Tissue from the Rhesus Monkey Brain**  
Farzad Mortazavi, PhD ▪ Chobanian & Avedisian School of Medicine
- 1:25–1:35 PM  
**ABSTRACT 030 - Rac1 Promotes Kidney Collecting Duct Repair by Mechanically Coupling Cell Morphology to Mitotic Entry**  
Fabian Bock, MD, PhD ▪ Vanderbilt University Medical Center
- 1:35–1:45 PM  
**ABSTRACT 031 - Quantitative Digital Image Analysis of Whole Slide Images to Investigate White Matter Rarefaction in Alzheimers Disease**  
Dana Julian ▪ University of Pittsburgh School of Medicine
- 1:45–1:55 PM  
**ABSTRACT 032 - Non-Invasive Electric Stimulation Suppresses Microglia Activation and Angiogenesis Through the Mediation of Mitochondrial Potential and Ca<sup>2+</sup> Signaling in Microglia and Endothelial Cells**  
Anton Lennikov, MD, PhD ▪ Schepens Eye Research Institute of Massachusetts Eye and Ear/Harvard Medical School
- 1:55–2:20 PM  
**Expansion Microscopy: Development, Application, and Future Directions**  
Jinyoung Kang, PhD ▪ Massachusetts Institute of Technology
- **Questions and Answers**

**Session 019: ASMB Concurrent: Fibronectin and the Developmental Biology of ECM**

2:45–4:15 PM

*Location: Imperial D*

**Chair:** Sophie Astrof, PhD ▪ Rutgers University/NJ Med School Newark

- 2:45–3:15 PM  
**Pleiotropic and Cell Type-Specific Roles of Fibronectin in Cardiovascular Development**  
Sophie Astrof, PhD ▪ Rutgers University/NJ Med School Newark
- 3:15–3:30 PM  
**ABSTRACT 034 - Versican Mediates the Crosstalk Between Keratinocytes and Dermal Papilla Cells in Hair Follicles**  
Xi Chen, PhD ▪ Stony Brook University
- 3:30–3:45 PM  
**ABSTRACT 035 - Development of A Novel Mouse Strain With a Multifunctional and Switchable Tagged Allele of COL4A1**  
Mao Mao, PhD ▪ University of California, San Francisco
- 3:45–4:00 PM  
**ABSTRACT 036 - Subendothelial Fibronectin Disrupts Endothelial Cell Monolayer Integrity**  
Henry Resnikoff ▪ Princeton University

- 4:00–4:15 PM  
**ABSTRACT 037 - Longitudinal Mechanical, Histological and Functional Analysis of Myxomatous Mitral Valve Disease in Marfan Syndrome Mice**  
Brittany A. Gonzalez, PhD ▪ Cincinnati Children's Hospital Medical Center

**Session 020: ASMB Concurrent: Biomaterials**

2:45–4:15 PM

Location: Grand A

**Chair:** Jamal Lewis, PhD ▪ University of California, Davis

- 2:45–3:15 PM  
**Advances in Engineering Particles for Inflammatory Disease Therapy**  
Jamal Lewis, PhD ▪ University of California, Davis
- 3:15–3:30 PM  
**ABSTRACT 038 - Vascular Elastic Lamellae Fabricated In Vitro by a Layer-by-Layer Method**  
Shota Tanifuji, PhD ▪ Tokyo Medical University
- 3:30–3:45 PM  
**ABSTRACT 039 - Magnetic Extracellular Vesicle Delivery System for Matrix Synthesis for Abdominal Aortic Aneurysm Repair**  
Ande X. Marini ▪ University of Pittsburgh
- 3:45–4:00 PM  
**ABSTRACT 040 - A Decellularized Cartilage Matrix Approach to Pediatric Airway Reconstruction**  
Paul M. Gehret, PhD ▪ University of Pennsylvania
- 4:00–4:15 PM  
**ABSTRACT 041 - A Regulatory Role for Macrophages in Fibroblast Circadian Rhythm and Collagen-I Deposition**  
Katherine Lowles ▪ University of Manchester

**Session 021: ASMB Concurrent: Genetics of Matrix Disorders**

2:45–4:15 PM

Location: Imperial C

**Chair:** Fransiska Malfait, MD, PhD ▪ Center for Medical Genetics, University of Ghent

- 2:45–3:15 PM  
**Pain Mechanisms in Heritable Collagen Disorders: Lessons Learned from the Ehlers-Danlos Syndromes**  
Fransiska Malfait, MD, PhD ▪ Center for Medical Genetics, University of Ghent
- 3:15–3:30 PM  
**ABSTRACT 042 - Effects of Fibrillin-1 loss on Osteoarthritis Development**  
Blandine Poulet, PhD ▪ University of Liverpool
- 3:30–3:45 PM  
**ABSTRACT 043 - Using Suppressor Genetics to Identify Therapeutic Targets for Thoracic Aortic Aneurysm in a Mouse Model of Neonatal Marfan Syndrome (nMFS)**  
Silvia Smaldone, PhD ▪ Regeneron Pharmaceutical, Inc.
- 3:45–4:00 PM  
**ABSTRACT 044 - Expanding the Mutational and Phenotypic Spectrum in Elastin-Driven Disease Through a Gene-First Approach**  
Beth Kozel, MD, PhD ▪ National Heart, Lung, and Blood Institute, National Institutes of Health
- 4:00–4:15 PM  
**ABSTRACT 045 - The Role of Fibronectin in Mediating the Progression of TGF- $\beta$ 1-Induced Renal Fibrosis in a 3D Culture Model**  
Kristin Kim ▪ Virginia Commonwealth University

**Session 022: HCS Concurrent: Neuropathology and Neuro-Inflammation**

2:45–4:15 PM

Location: Venezia

**Chair:** Douglas L. Rosene, PhD ▪ Boston University School of Medicine

- 2:45–3:15 PM  
***The Inconvenient Truth About CTE***  
Ann C. McKee, MD ▪ Boston University
- 3:15–3:30 PM  
**ABSTRACT 046 - Brain Endothelial Transcriptome in Response to Endotoxemia**  
Shuhan Lu ▪ Albany Medical College
- 3:30–3:45 PM  
**ABSTRACT 047 - Microglia Transcriptome Suggests Persistent Activation and Impaired Oxidative Phosphorylation in Alzheimers Disease**  
Tracy Fischer, PhD ▪ Tulane National Primate Research Center
- 3:45–4:00 PM  
**ABSTRACT 048 - Reduction in the Expression of Tight Junction Proteins at 4-Weeks Post-SARS-CoV-2 Infection in Non-Human Primates**  
Meredith Mayer ▪ Tulane National Primate Research Center
- 4:00–4:15 PM  
**ABSTRACT 049 - The Effects of a Closed Head Injury on Anxiety-like Behaviors in Male Rats**  
Taysha M. Jiménez-Rivera ▪ University of Puerto Rico

**Session 023: HCS Concurrent: Beyond Mapping: Driving New Discoveries by Harnessing Multi-Modal Data**

2:45– 4:15 PM

Location: Murano

**Co-Chair:** Alexandra Naba, PhD ▪ University of Illinois, Chicago

**Co-Chair:** Francesca Duncan, PhD ▪ Northwestern University

- 2:45–3:15 PM  
***Building a Comprehensive Human Reference Atlas***  
Richard Conroy, PhD ▪ Office of Strategic Coordination, National Institutes of Health
- 3:15–3:45 PM  
***Leveraging Hubmap Data to Build the Human ECM Atlas***  
Alexandra Naba, PhD ▪ University of Illinois, Chicago
- 3:45–4:15 PM  
***The Power of One: New Insights Gained from a Single Cell Reproductive Cell Atlas***  
Sue Hammoud, PhD ▪ University of Michigan

**Session 024: Presidents' Welcome and Meritorious Award Lectures**

4:30–6:00 PM

**Co-Sponsored by the American Society for Matrix Biology, the Histochemical Society, and the American Society for Investigative Pathology**

**Co-Chair:** Jeffrey H. Miner, PhD ▪ Washington University School of Medicine – *ASMB President*

**Co-Chair:** Alejandro P. Adam, PhD ▪ Albany Medical College – *HCS President*

**Co-Chair:** William A. Muller, MD, PhD ▪ Northwestern University – *ASIP President*

**Session Description:** This session will feature meritorious awards lectures from each of the partnering Societies – ASMB, HCS, ASIP Location: Imperial A&B

**ASIP Rous-Whipple Award Lecture**

- 4:30–5:00 PM  
***TIMPs: Emerging Roles in Tissue Homeostasis and Cancer Progression***  
William Stetler-Stevenson, MD, PhD ▪ National Cancer Institute

**HCS George Gomori Awardee**

- 5:00–5:30 PM  
***Back to the Future with George Gomori***  
Denis Baskin, PhD ▪ University of Washington

**ASMB Senior Investigator Awardee**

- 5:30–6:00 PM  
***Mysteries of the Collagen Triple Helix***  
Hans Peter Bachinger ▪ Oregon Health and Science University

**Session 025: Keynote Lecture**

6:00–7:00 PM

Location: Imperial A&B

- ***Disease-Specific Changes in Extracellular Matrix and Targeted Drug Delivery***  
Erkki Ruoslahti, MD, PhD ▪ Sanford Burnham Presbyterian Medical Discovery Institute  
***Albert Lasker Basic Medical Research Awardee***

**Opening Reception – ASMB, HCS, and ASIP**

7:00–9:00 PM

Location: Garden Courtyard

# Research Grant Proposal Deadline: February 1st



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Friends for an  
Earlier Breast Cancer Test®

Call for research grant applications for  
pilot projects that focus on new  
methods to improve detection of early  
breast cancer.

**SUBMISSION DEADLINE:**  
February 1st

earlier.org - Friends for an Earlier Breast Cancer Test® - P.O. Box 10363 - Greensboro, NC 27404  
APPLY TODAY: <https://www.earlier.org/prospective-researchers/>

**Session 026: Education/Career Development Session - We Have to Talk: Navigating Challenging Conversations**

7:00–8:30 AM

**Co-Sponsored by the ASIP Committee for Career Development and the Education Committee**

**Co-Chair:** Taylor Ticer, BS ▪ Medical University of South Carolina

**Co-Chair:** Patricia D'Amore, PhD ▪ Schepens Eye Research Institute of Mass. Eye & Ear, Harvard Medical School

*Location: Grand A*

**Session Description:** The goal of this session is to provide participants with practical advice on how to manage difficult conversations, from both the mentor's and the mentee's perspective. The workshop will be divided into two parts: (i) a didactic lecture, followed by (ii) an audience participation activity. The lecture, titled "Navigating Troubled Waters," will be delivered by several ASIP members who will address the conversation from the mentor's and trainee's perspective and viewpoint. The presentation will cover how to prepare for a difficult conversation, tips for effective communication, and how to conclude the conversation.

The second part of the session will be an interactive group activity which involves ASIP members who will assist in role-play different scenarios, and this will be followed by audience discussion about pros and cons of the conversation. Volunteers from the audience will then be asked to implement what they learned from the didactic portion to act out other scenarios; this will also be followed by audience discussion. By the end of the session, audience members will have gained new tools on navigating difficult conversations with a mentor or mentee in a way that will be productive for both parties involved.

**Session 027: ASIP Mucosal Pathobiology – Cellular and Microbial Cross-Talk on the Mucosal Interfaces**

8:30–10:30 AM

**Sponsored by the ASIP Vascular and Mucosal Pathobiology Scientific Interest Group**

**Co-Chair:** Andrei Ivanov, PhD ▪ Cleveland Clinic Foundation

**Co-Chair:** Asma Nusrat, MD ▪ University of Michigan

*Location: Murano D*

- Chair - Welcome and Introductions
- 8:00–8:35 AM  
***Interplay Between Neutrophils and Mucosal Epithelia During Inflammation and Repair***  
Charles Parkos, MD, PhD ▪ University of Michigan
- 8:35–9:10 AM  
***Enigmatic Role of Gasdermins in Gut Mucosal Immunity***  
Theresa Pizarro, PhD ▪ Case Western Reserve University
- 9:10–9:45 AM  
***Digging Up the Roots of Asthma Endotypes***  
Donald N Cook, PhD ▪ National Institute of Environmental Health Sciences
- 9:45–10:20 AM  
***Mechanisms of Protective and Pathological Hyaluronan Remodeling in Inflammatory Bowel Disease***  
Aaron C. Petrey, PhD ▪ University of Utah
- ***Questions and Answers***

**Session 028: ASMB Plenary: Sex, Age, and ECM**

8:30–10:00 AM

**Chair:** Karen Posey, PhD, ▪ McGovern Medical School

*Location: Imperial A*

- 8:30–9:00 AM  
***Sex-Specific In Vitro Models of Aortic Valve Stenosis***  
Brian Aguado, PhD ▪ University of California San Diego

- 9:00–9:30 AM  
***Sex Differences in Heritable Thoracic Aortic Disease***  
Julie De Backer, MD, PhD ▪ Ghent University Hospital, Belgium
- 9:30–10:00 AM  
***Engineering the Adipose Tissue Matrix***  
Evangelia Bellas, PhD ▪ Temple University  
**ASMB Junior Investigator Awardee**

**Session 029: ASMB and HCS Plenary: Proteoglycans and Inflammation**

8:30–10:00 AM

**Co-Chair:** Liliana Schaefer, MD ▪ Goethe University

**Co-Chair:** Ambra Pozzi, PhD ▪ Vanderbilt University School of Medicine

*Location: Imperial B*

- 8:30–9:00 AM  
***Hyaluronan Matrix as a Treatment Target in Viral Pneumonia***  
Stavros Garantziotis, MD ▪ National Institute of Environmental Health Sciences
- 9:00–9:30 AM  
***Towards the Universality and Targeting of TLR Signaling: Developing Novel Therapeutics***  
Rashmin C. Savani, MB, ChB ▪ University of Florida, Gainesville
- 9:30–10:00 AM  
***Proteoglycan Regulation of Tumor Lymphangiogenesis***  
Renato V. Iozzo, MD, PhD (Honoris causa) ▪ Sidney Kimmel Medical College at Thomas Jefferson University

**Session 030: ASIP Liver Pathobiology**

8:30–10:00 AM

**Co-Chair:** Chhavi Goel, PhD ▪ University of Pittsburgh

**Co-Chair:** Vik Meadows, PhD ▪ Rutgers University

*Location: Imperial D*

- 8:30–8:45 AM  
**ABSTRACT 050 - *Identifying a Metabolomics-Based Serum Signature of Hepatic HNF4alpha Downregulation***  
Udayan Apte, PhD ▪ University of Kansas Medical Center
- 8:45–9:00 AM  
**ABSTRACT 051 - *Overexpression of Atg7 in Mouse Liver Paradoxically Suppresses Autophagy***  
Yuanyuan Li, PhD ▪ Tulane University School of Medicine
- 9:00–9:15 AM  
**ABSTRACT 052 - *Acetaminophen-Induced Acute Liver Injury is Differentially Regulated by Diploid and Polyploid Hepatocytes***  
Sierra Wilson, BA ▪ University of Pittsburgh
- 9:15–9:30 AM  
**ABSTRACT 053 - *Inhibition of Wnt/beta-catenin Signaling as a Novel Therapeutic Strategy for Porphyrria***  
Anu Balogun, MSc ▪ University of Pittsburgh
- 9:30–9:45 AM  
**ABSTRACT 054 - *Dual Loss of  $\beta$ - and  $\gamma$ -Catenins from Cholangiocytes Leads to Acute Cholestasis and Mortality due to Hepatobiliary Injury and Maladaptation as Revealed by Single-Nucleus RNA Sequencing***  
Yekaterina Krutsenko, BSc ▪ University of Pittsburgh
- 9:45–10:00 AM  
**ABSTRACT 055 - *Maternal Obesogenic Diets Alter the Microbiome-Dependent Weaning Reaction and Variably Promote Non-Alcoholic Fatty Liver Disease in Offspring***  
Vung Lian ▪ Washington University School of Medicine


**Session 031: ASIP Blood Vessel Club  The Vasculature in Normal and Pathologic Conditions**

8:30–10:00 AM

**Co-Chair:** Patricia A. D'Amore, PhD ▪ Schepens Eye Research Institute of Mass. Eye & Ear, Harvard Medical School

**Co-Chair:** David Sullivan, PhD ▪ Northwestern University

*Location: Grand D*

**Session Description:** The Blood Vessel Club  is an annual gathering at the ASIP annual meeting. Over the many years that this group has met there have astounding developments and advancements. From the early days when establishing the vascular endothelium in vitro was a major breakthrough in the field to the elegant and sophisticated approaches and models of today, anyone with an interest in the vasculature (and that should be everyone because all tissues are vascularized!) will find home here.

- Chair - Welcome and Introductions
- 8:30–8:50 AM  
***Novel Roles for Platelets in Infection and Inflammation***  
Robert A. Campbell, PhD ▪ University of Utah
- 8:50–9:10 AM  
***Neutrophils Recruitment in Stroke - An Early Opportunity to Regulate Neuroinflammation in the Ischemic Brain***  
David P. Sullivan, PhD ▪ Northwestern University
- 9:10–9:30 AM  
***Charting the Vascular Connectome Under Physiological Conditions and Disease***  
Joseph F. Arboleda-Velasquez, MD, PhD ▪ Mass Eye and Ear, Harvard Medical School
- 9:30–9:50 AM  
***The Ins and Outs of Neutrophil Trafficking in Cancer***  
Tanya N. Mayadas, PhD ▪ Brigham and Women's Hospital, Harvard Medical School
- ***Questions and Answers***

**Session 032: ASIP: STP Guest Society Session - Applications of Molecular Pathology to Early Drug Discovery and Development**

8:30–10:00 AM

**Chair:** David Hutto, DVM, PhD, DACVP ▪ Boehringer Ingelheim

*Location Imperial C*

- Chair - Welcome and Introductions
- 8:30–9:15 AM  
***Application of Molecular Pathology to Investigative Preclinical Safety Assessment***  
Mathieu Marella, PhD ▪ The Janssen Pharmaceutical Companies of Johnson & Johnson
- 9:15–10:00 AM  
***Understanding the Biology of Oncolytic Viruses***  
David Hutto, DVM, PhD, DACVP ▪ Boehringer Ingelheim

**Coffee Break**

10:00–10:30 AM

*Location: Ballroom Reception*

**Session 033: Joint Plenary Session – Fibrosis: Fibrosis Across Organ Systems**

10:30–12:00 PM

***Co-Sponsored by the American Society for Matrix Biology, the Histochemical Society, and the American Society for Investigative Pathology***

**Co-Chair:** Jeffrey H. Miner, PhD ▪ Washington University School of Medicine

**Co-Chair:** Liliana Schaefer, MD ▪ Goethe University Frankfurt

**Co-Chair:** Andrei Ivanov, PhD ▪ Cleveland Clinic Foundation

*Location: Imperial A&B*

- Chair - Welcome and Introductions
- 10:30–11:00 AM  
***Mechanisms of Fibrogenesis in Inflammatory Bowel Disease***  
Florian Rieder, MD ▪ Cleveland Clinic
- 11:00–11:30 AM  
***The Epithelium Takes Center Stage in Fibrosis***  
Melanie Koenigshoff, MD, PhD ▪ University of Pittsburgh
- 11:30 AM–12:00 PM  
***The New Frontier of Antifibrotic Therapies – Rationale and Development***  
Scott L. Friedman, MD ▪ Mount Sinai
- **Questions and Answers**

#### **Lunch and Poster Session**

12:00–2:00 PM

*Location: Grand Ballroom B&C*

#### **Matrix Biology Editorial Board Meeting**

12:00–1:00 PM

*Location: Audubon*

#### **By Invitation Only**

#### **Lunch with the ASMB Publication Committee – Special Issues**

1:00–2:00 PM

*Location: Vienna*

*Join the ASMB Publication Committee to talk about plans for upcoming special issues of Matrix Biology. If you have a topic for a future special issue or if you are interested in becoming a guest editor, bring your lunch and join our conversation! Lunch provided in the main meeting area, the Vienna Room is located on the third floor.*

#### **Session 034: ASIP Outstanding Investigator Award Lecture**

*Location: Imperial A*

- 1:00–2:00 PM  
***Epigenetic Control of Cancer Metastasis and Immune Evasion***  
Qin Yan, PhD ▪ Yale University

#### **Session 035: ASMB Concurrent: Update on Collagen Biology**

2:00– 3:30 PM

**Chair:** Joan Chang, PhD ▪ *University of Manchester*

*Location: Imperial B*

- 2:00–2:30 PM  
***(Circadian) Regulation of Collagen-I Homeostasis? New Paradigms and Considerations***  
Joan Chang, PhD ▪ University of Manchester
- 2:30–2:45 PM  
**ABSTRACT 056 - *The Role of Microvilli in the Organization of Apical Extracellular Matrix***  
Ava Niazi ▪ University of Utah
- 2:45–3:00 PM  
**ABSTRACT 057 - *Fused in Sarcoma: An RNA-DNA binding protein with Pro-Fibrotic Activity***  
Manuel Chiusa, PhD ▪ Vanderbilt University School of Medicine
- 3:00–3:15 PM  
**ABSTRACT 058 - *A Bidirectional Cross-Talk Between the Adherens Junction - Associated RNAi Machinery and the Extracellular Matrix Regulates Colon Epithelial Cell Behavior***  
Amanda Daulagala, PhD ▪ Medical University South Carolina
- 3:15–3:30 PM  
**ABSTRACT 059 - *Collagen Degradative Pathways Ensure Cervical Remodeling During Pregnancy***  
Mariano Colon-Caraballo, PhD ▪ UT Southwestern Medical Center

**Session 036: ASMB Concurrent: Elastic Fibers**

2:00–3:30 PM

**Chair:** Anand Ramamurthi, PhD ▪ Lehigh University

*Location: Imperial D*

- 2:00–2:30 PM  
***Elastic Matrix Regenerative Platforms for In Situ Tissue Repair***  
Anand Ramamurthi, PhD ▪ Lehigh University
- 2:30–2:50 PM  
**ABSTRACT 060 - *Fibulin-1 Supports BM Stretching During Ovulation in C. elegans***  
Adam WJ Soh, PhD ▪ Duke University
- 2:50–3:10 PM  
**ABSTRACT 062 - *Spatio-Temporal Expression of EP4 Regulates Vascular Intimal Hyperplasia Through Fibulin-1***  
Shigekuni Okumura, MD ▪ Tokyo Medical University
- 3:10–3:30 PM  
**ABSTRACT 063 - *MFAP4 Forms Octamers Required for Functional Interactions with Elastogenic Proteins***  
Michael R. Wozny, PhD ▪ McGill University

**Session 037: ASMB Concurrent: Matrix and Receptors in Development**

2:00–3:30 PM

**Chair:** Brian Stramer, PhD ▪ Kings College London

*Location: Imperial C*

- 2:00–2:30 PM  
***Dissecting Basement Membrane Dynamics During Drosophila Development***  
Brian Stramer, PhD ▪ Kings College London
- 2:30–2:45 PM  
**ABSTRACT 064 - *Multiple Cell Types Influence Extracellular Matrix Dynamics During Planarian Regeneration***  
Ekasit K. Sonpho, PhD ▪ Stowers Institute for Medical Research
- 2:45–3:00 PM  
**ABSTRACT 065 - *Delineating the Timeline of SNED1 Fibrillogenesis and Assembly in the Extracellular Matrix***  
Leanna Leverton ▪ University of Illinois at Chicago
- 3:00–3:15 PM  
**ABSTRACT 066 - *Fibronectin-Mediated Physiological and Pathological Mechanisms in Skeletal Development***  
Neha Dinesh, PhD ▪ McGill University, Montreal
- 3:15–3:30 PM  
**ABSTRACT 067 - *Temporally-Restricted Patterns of Endothelial Cell Collagen IV Expression Determined with a Novel Knockin' Col4a1-GFP Mouse Line (HCS Post-Doctoral Trainee Awardee)***  
Nathaniel Lartey, PhD ▪ University of Michigan Medical School

**Session 038: ASIP President's Symposium – Regulation and Consequences of Transendothelial Migration – Part I**

2:00–3:30 PM

**Chair:** William A. Muller, MD, PhD ▪ Northwestern University

*Location: Imperial A*

- Chair - Welcome and Introductions
- 2:00–2:45 PM  
***Transendothelial Migration from the Endothelial Cell Perspective***  
William A. Muller, MD, PhD ▪ Northwestern University
- 2:45–3:30 PM  
***Transendothelial Migration from the Leukocyte Perspective***  
Minsoo Kim, PhD ▪ University of Rochester
- ***Questions and Answers***

**Session 039: HCS and ASIP Concurrent: Lung Fibrosis**

2:00–3:30 PM

**HCS Co-Chair:** Charles W. Frevert, DVM, ScD ▪ University of Washington School of Medicine

**ASIP Co-Chair:** Piyali Dasgupta, PhD ▪ Joan C. Edwards School of Medicine, Marshall University

*Location: Grand D*

- 2:00–2:30 PM  
***Defining the Cell Types that Drive Idiopathic Pulmonary Fibrosis Using Combined Transcriptomics and Proteomics***  
Oliver Eickelberg, MD, FERS, ATSF ▪ University of Pittsburgh
- 2:30–3:00 PM  
***The Functional Role of Pericytes in Lung Injury and Repair***  
Chi Hung, MD ▪ University of Washington School of Medicine
- 3:00–3:30 PM  
***New Insights into the Molecular Mechanisms of IPF - A Translational Approach***  
Malgorzata Wygrecka, PhD ▪ Justus Liebig University

**Session 040: HCS Guest Society Session: The Japan Society of Histochemistry and Cytochemistry Presents Current Trends and Best Paper**

2:00–3:30 PM

**Chair:** Stephen Hewitt, MD, PhD ▪ National Institutes of Health, Editor in Chief of the Journal of Histochemistry & Cytochemistry

*Location: Venezia*

- 2:00–2:30 PM  
***Immunohistochemistry and My Scientific Career***  
Paul K. Nakane, PhD ▪ Retired
- 2:30–3:00 PM  
***Current Topics in Japan Society of Histochemistry and Cytochemistry: Digests From Recent Takamatsu Prize and Young Investigator Award Winners Works***  
Takehiko Koji, MD, PhD ▪ Nagasaki University and Daisuke Tsuruta/Osaka Metropolitan University
- 3:00–3:30 PM  
***Top Cited Articles in Acta Histochemica et Cytochemica, the Official Journal of Japan Society of Histochemistry and Cytochemistry***  
Daisuke Tsuruta, MD, PhD ▪ Osaka Metropolitan University and Takehiko Koji/Nagasaki University

**Coffee Break**

3:30–4:00 PM

*Location: Ballroom Reception*

**Session 041: ASMB Concurrent: Basement Membrane: Structure and Function**

4:00–5:30 PM

**Chair:** M. Peter Marinkovich, MD ▪ Stanford University

*Location: Imperial B*

- 4:00–4:30 PM  
***Gene Therapy for Epidermolysis Bullosa***  
M. Peter Marinkovich, MD ▪ Stanford University
- 4:30–4:45 PM  
***ABSTRACT 068 - Non-Cell-Autonomous Deposition of Ectopic Laminin  $\alpha$ 2 in the Glomerular Basement Membrane in Alport Syndrome***  
Kohei Omachi, PhD ▪ RIKEN Center for Biosystems Dynamics Research (BDR)

- 4:45–5:00 PM  
**ABSTRACT 069 - Antibody Mediated Binding of Amyloid Beta Causes Degradation of Collagen IV in the Basement Membrane of Viable Microvessels Isolated from Brains with Alzheimer's Disease Neuropathology**  
May J. Reed, MD ▪ University of Washington
- 5:00–5:15 PM  
**ABSTRACT 070 - Dual Linker Protein Repair of the Lama2-Null Dystrophic Mouse by AAV Somatic Gene Therapy**  
Peter D. Yurchenco ▪ Rutgers University
- 5:15–5:30 PM  
**ABSTRACT 071 - Cryo-EM Reveals the Molecular Basis of Laminin Polymerization and LN-lamininopathies**  
Arek Kulczyk, PhD ▪ Rutgers University

**Session 042: ASMB Concurrent: New Approaches to Modelling Matrix Changes in Human Development and Disease**

4:00–5:30 PM

**Chair:** Rachel Lennon, BMedSci, BMBS, PhD, FRCPC ▪ University of Manchester

*Location: Imperial D*

- 4:00–4:30 PM  
**Basement Membrane Turnover in Alport Syndrome**  
Rachel Lennon, BMedSci, BMBS, PhD, FRCPC ▪ University of Manchester
- 4:30–4:45 PM  
**ABSTRACT 072 - Pgp-1 Deficiency Results in Intestinal Defects in C. Elegans, Modeling Human Disease**  
MaKenna DeYoung ▪ University of South Carolina Upstate
- 4:45–5:00 PM  
**ABSTRACT 073 - Human 3D Organotypic Co-Culture Model of Pleura**  
Peggy Stock, PhD ▪ University Hospital Leipzig
- 5:00–5:15 PM  
**ABSTRACT 074 - A Comparative Analysis of Pulmonary Arterial Hypertension in Human Subjects and in Experimental Rodent Models**  
Lan Zhao ▪ Stanford University
- 5:15–5:30 PM  
**ABSTRACT 075 - MET and Fibroblast Growth Factor 19 Co-Expression in Hepatocellular Carcinoma: Molecular Biology and Clinical Relevance**  
Brandon M. Lehrich ▪ University of Pittsburgh

**Session 043: ASMB Concurrent: Matricellular Proteins**

4:00–5:30 PM

**Chair:** Davy Vanhoutte, PhD ▪ Cincinnati Children's Hospital Medical Center

*Location: Imperial C*

- 4:00–4:30 PM  
**ABSTRACT 079 - Thrombospondin-1 Regulates Skeletal Muscle Mass in a TGF- $\beta$ -Smad2/3-ATF4-Dependent Manner**  
Davy Vanhoutte, PhD ▪ Cincinnati Children's Hospital Medical Center
- 4:30–4:45 PM  
**ABSTRACT 076 - In Situ Engineering of Stromal Cell-Derived Extracellular Matrix to Restore Functionality of the Aging Bone Marrow Niche**  
Milos Marinkovic, PhD ▪ University of Texas Health Science Center at San Antonio
- 4:45–5:00 PM  
**ABSTRACT 077 - Elucidating the Role of Anti-aging Matrix Fibulin 7 in Skin Inflammatory Disease Psoriasis**  
Erna Raja, PhD ▪ University of Tsukuba, Japan
- 5:00–5:15 PM  
**ABSTRACT 078 - Next-Generation Formulation of Curcumin, Ameliorates Growth Plate Chondrocyte Stress and Increases Limb Growth in a Mouse Model of Pseudoachondroplasia**  
Jacqueline T. Hecht, PhD ▪ McGovern Medical School at UTHealth Houston

- 5:15–5:30 PM  
**ABSTRACT 192 - Nanostring Gene Expression Analysis of Normal and Glaucomatous Trabecular Meshwork Cells With and Without the N700S Thrombospondin-1 Polymorphism**  
 Kate Keller, PhD ▪ Oregon Health & Science University

**Session 044: ASIP President’s Symposium – Regulation and Consequences of Transendothelial Migration – Part II**  
 4:00–5:30 PM

**Chair:** William Muller, MD, PhD ▪ Northwestern University  
*Location: Imperial A*

- Chair - Welcome and Introductions
- 4:00–4:45 PM  
**Neutrophil Based Approaches to Promote Leukocyte Accumulation in Cancer**  
 Tanya N. Mayadas, PhD ▪ Brigham and Women's Hospital, Harvard Medical School
- 4:45–5:30 PM  
**Role of Emigrated Leukocytes in Resolution of Inflammation**  
 Charles N. Serhan, PhD, DSc ▪ Brigham and Women’s Hospital, Harvard Medical School
- **Questions and Answers**

**Session 045: HCS and ASIP Concurrent: Liver Pathobiology - Liver Fibrosis: Mechanisms and Signaling Pathways with JHC Lecture**  
 4:00–5:30 PM

**Co-Chair:** Heather Francis, PhD ▪ Indiana University  
**Co-Chair:** Liliana Schaefer, MD ▪ Goethe University  
*Location: Grand D*

- 4:00–4:35 PM  
**Deciphering Mast Cell-Cholangiocyte Crosstalk: Implications for Liver Fibrosis Pathogenesis and Therapy**  
 Heather Francis, PhD ▪ Indiana Center for Liver Research, Indiana University School of Medicine
- 4:40–5:15 PM  
**JHC Lecture: Liver Fibrosis: Novel Concepts and Therapeutic Approaches**  
 Detlef Schuppan, MD, PhD ▪ Institute of Translational Immunology, University Medical Center of the Johannes Gutenberg University Mainz
- 5:15–5:30 PM  
**ABSTRACT 080 - Dose-Dependent Changes in Hepatic Fibrin(ogen) Deposition Reveals a Pathological Role of Fibrin Polymerization in Acetaminophen-induced Acute Liver Failure**  
 Zimu Wei ▪ Michigan State University

**ASIP Business Meeting and Awards Presentations**  
 5:30–7:00 PM

**Chair:** William Muller, MD, PhD ▪ Northwestern University  
*Location: Imperial A*

**ASIP Society-Wide Reception**  
 7:00–9:00 PM  
*Location: Imperial A*

**ASIP President’s Reception (By Invitation Only)**  
 9:00–11:00 PM  
*Location: Private*

**Session 046: ASMB Organized Career Mentoring Roundtables**

7:00–8:30 AM

Location: Grand A

*Round Table Breakfast – Open to all*

*Join colleagues for lively discussion around various career focused topics. Select a table by topic or by mentor, feel free to change tables halfway through. Mentors and topics will be listed on the meeting app.*

**Session 047: Picking Your Mentors and Minding Your Mentees**

7:00–8:30 AM

**Co-Chair:** Julie Randolph-Habecker, PhD ▪ Pacific Northwest University

**Co-Chair:** Wendy Mars, PhD ▪ University of Pittsburgh

**Co-Chair:** Dan Milner, MD ▪ American Society for Clinical Pathology

**Co-Chair:** Michele Alves, PhD ▪ Ohio State University

Location: Venezia

**Session Description:** The concept of the importance of building a Board of Mentoring Directors for career success will be introduced, including how to identify what constitutes a healthy relationship between the mentor and mentee. Case-based discussions with a panel of mentors and mentees at various stages of their careers will be used to help both mentors and mentees understand what constitutes various mentoring roles and best practices for each.

**SESSION 048: ASIP & The Italian Society of Pathology and Translational Medicine (SIPMeT) Joint Session: Inflammation and the Inflammasome**

8:30–10:00 AM

**Co-Chair:** Massimiliano Corsi Romanelli, MD, PhD ▪ University of Milan

**Co-Chair:** Francesco Curcio, PhD ▪ University of Udine

Location: Murano

- Chair - Welcome and Introductions
- 8:30–9:00 AM  
**Initiation of Inflammation: Roles of the Inflammasome(s)**  
William A. Muller, MD, PhD ▪ Northwestern University
- 9:00–9:30 AM  
**ST-2/IL-33 Pathway and Cardiac Fibrosis: Animal and Human Models**  
Massimiliano M. Corsi Romanelli, MD, PhD ▪ University of Milan
- 9:30–10:00 AM  
**The Power of -Omics in Diagnostics**  
Francesco Curcio, PhD ▪ University of Udine

**Session 049: ASMB and HCS Joint Plenary: Kidney in Health and Disease**

8:30–10:00 AM

Location: Imperial A

**Co-Chair:** Doug Gould, PhD, University of California at San Francisco

**Co-Chair:** Liliana Schaefer, MD, Goethe University

- 8:30–9:00 AM  
**Integrins and the Kidney**  
Roy Zent, MD, PhD ▪ Vanderbilt University Medical Center
- 9:00–9:30 AM  
**Role of Mononuclear Phagocytes in Kidney Inflammation and Fibrosis**  
Christian Kurts, MD ▪ University Clinic of Bonn

- 9:30–10:00 AM  
***Digging Deep: Regulators of Tissue Repair***  
Valerie Horsley, PhD ▪ Yale School of Medicine  
**ASMB 2023 Renato Iozzo Awardee for Outstanding Research in Matrix Biology**

**Session 050: ASIP Gene Expression Workshop: Transcriptional Control in Cancer**

8:30–10:00 AM

***Sponsored by the ASIP Gene Expression Scientific Interest Group***

**Co-Chair:** Qin Yan, PhD ▪ Yale University

**Co-Chair:** Anu R. Balogun ▪ University of Pittsburgh

*Location: Grand D*

- Chair - Welcome and Introductions
- 8:30–9:00 AM  
***The Role of IDR and Phase Separation in Oncogenesis***  
Gang (Greg) Wang, PhD ▪ University of North Carolina
- 9:00–9:30 AM  
***Regulation of TAZ Transcription and Hippo Signaling by Phase Separation***  
Kunxin Luo, PhD ▪ University of California, Berkeley
- 9:30–10:00 AM  
***Illuminating Dark Proteome-Mediated Transcriptional Control in Cancer by Live-Cell Single-Molecule Imaging***  
Sasha Chong, PhD ▪ Caltech
- ***Questions and Answers***

**Session 051: ASIP Tissue Injury and Cancer Biology – Extracellular Vesicles in Disease**

8:30–10:00 AM

**Co-Chair:** Xiao-Ming Yin, MD, PhD ▪ Tulane University

**Co-Chair:** Ronen Sumagin, PhD ▪ Northwestern University

*Location: Imperial C*

- Chair - Welcome and Introductions
- 8:30–8:50 AM  
***Biogenesis and Biology of Tumor Microvesicles***  
Crislyn D’Souza-Schorey ▪ University of Notre Dame
- 8:50–9:10 AM  
***Extracellular Vesicles Regulate Inflammation in Liver Injury***  
Xiao-Ming Yin, MD, PhD ▪ Tulane University
- 9:10–9:30 AM  
***Extracellular Vesicles Facilitate Immune Effector Functions in Gut Inflammation***  
Ronen Sumagin, PhD ▪ Northwestern University
- 9:30–9:50 AM  
***Small Extracellular Vesicles: Insights into Chemotherapy-induced Metastasis***  
Hong-Gang “HG” Wang, PhD ▪ Milton S. Hershey Medical Center
- ***Questions and Answers***

**Session 052: ASIP Mucosal Pathobiology Minisymposium**

8:30–10:00 AM

**Co-Chair:** Taylor Ticer, BS ▪ Medical University of South Carolina

**Co-Chair:** Sarah Dooley ▪ Medical University of South Carolina

*Location: Imperial D*

- 8:30–8:45 AM  
**Abstract 081 - Intestinal Epithelial Recruitment of Neutrophils to Sites of Colonic Mucosal Injury**  
Saranyaraajan Varadarajan, PhD ▪ University of Michigan
- 8:45–9:00 AM  
**Abstract 082 - Thrombospondin-1 Enhances Epithelial Migration During Colonic Wound Repair**  
Zachary Wilson, PhD ▪ University of Michigan
- 9:00–9:15 AM  
**Abstract 083 - Spatially Separated Intraepithelial and Lamina Propria Neutrophils Present Distinct Functional Identities in Inflamed Colonic Mucosa**  
Lenore K. Yalom ▪ Northwestern University
- 9:15–9:30 AM  
**Abstract 084 - Neutrophil-Derived Myeloperoxidase Disrupts Epithelial Tight Junctions by Chlorination of Occludin Tyrosines**  
Ian Cartwright, PhD ▪ University of Colorado Anschutz Medical Campus
- 9:30–9:45 AM  
**Abstract 085 - Rotavirus Infection Elicits Host Responses via P2Y1 Purinergic Signaling**  
Kristen Engevik, PhD ▪ Baylor College of Medicine
- 9:45–10:00 AM  
**Abstract 086 - Coactosin-Like Protein 1 is a Novel Regulator of the Intestinal Epithelial Barrier Integrity and Repair**  
Susana Lechuga Villarauz, PhD ▪ Cleveland Clinic Foundation

#### **Coffee Break**

10:00–10:30 AM

*Location: Imperial Ballroom Reception*

#### **Session 053: ASMB, HCS, ASIP Joint Society Plenary Session – Cellular and Extracellular Mechanisms in Atherosclerosis**

10:30–12:00 PM

**Co-Sponsored by the American Society for Matrix Biology, the Histochemical Society, and the American Society for Investigative Pathology**

**Co-Chair:** Lynn Sakai, PhD ▪ Shriners' Hospital Research Center, and Oregon Health & Science University

**Co-Chair:** Alejandro Pablo Adam, PhD ▪ Albany Medical College

**Co-Chair:** Jonathon W. Homeister, MD, PhD ▪ University of North Carolina

*Location: Imperial A&B*

- Chair - Welcome and Introductions
- 10:30–11:00 AM  
**Epigenetic Control of Smooth Muscle Functions During Vascular Remodeling**  
Delphine Gomez, PhD ▪ University of Pittsburgh
- 11:00–11:30 AM  
**Smooth Muscle Cell-Matrix Adhesion in the Artery Wall**  
George Tellides, MD, PhD ▪ Yale School of Medicine
- 11:30 AM–12:00 PM  
**Flow-Dependent Drivers of Endothelial Vasoprotection in Atherogenesis**  
Guillermo Garcia-Cardena, PhD ▪ Brigham and Women's Hospital, Harvard Medical School
- **Questions and Answers**

#### **Lunch and Poster Session**

12:00–2:00 PM

*Location: Grand Ballroom B&C*

#### **ASMB Business Meeting**

12:05–12:30PM

*Location: Murano*

*All ASMB members are invited to attend this brief meeting. Travel awardees will be recognized, and society business will be reviewed.*

**ASMB: Lunch and Posters with High School Students from SLC**

12:30–2:00 PM

Location: Murano

**Session 054: ASIP Cotran Early Career Investigator Award Lecture**

Location: Grand D

- 1:00–2:00 PM  
**Neutrophil Phenotypic and Functional Plasticity in Gut Inflammation and Colon Cancer**  
Ronen Sumagin, PhD ▪ Northwestern University

**Session 055: ASMB Concurrent: Tissue Injury/Regeneration/Intervention;**

2:00–3:30 PM

**Chair:** Madeleine Oudin, PhD ▪ Tufts University

Location: Imperial B

- 2:00–2:30 PM  
**Roles of the ECM in Cancer Metastasis and Drug Resistance**  
Madeleine Oudin, PhD ▪ Tufts University
- 2:30–2:45 PM  
**ABSTRACT 091 - Treating Vocal Fold Scarring: Leveraging Decorin as a Regulator of Vocal Fold Extracellular Matrix Structure in Development and Repair**  
Ryan M. Friedman ▪ University of Pennsylvania/Children's Hospital of Philadelphia
- 2:45–3:00 PM  
**ABSTRACT 092 - Migrational Decision Making in Response to Multiple Directional Extracellular Matrix Cues**  
Ian Schneider, PhD ▪ Iowa State University
- 3:00–3:15 PM  
**ABSTRACT 093 - Cardiac Fibroblast-MHCII Contributes to Cardiac Pathophysiology in Doxorubicin-Induced Cardiomyopathy**  
Maria Antonia Zambrano ▪ Tufts University
- 3:15–3:30 PM  
**ABSTRACT 094 - Examining the Effects of Nanoscale Patterning of TGF $\beta$  Receptors and Viscoelastic Material Properties on Regulating TGF $\beta$  Signaling**  
Aryssa Simpson, PhD ▪ North Carolina State University/University of North Carolina at Chapel Hill

**Session 056: ASMB Concurrent: Matrix on Diet**

2:00–3:30 PM

**Chair:** David R. Soto Pantoja, PhD, Wake Forest School of Medicine Comprehensive Cancer Center

Location: Imperial C

- 2:00–2:30 PM  
**Influence of Thrombospondin-1/CD47 Signaling on the Crosstalk Between the Gut Microbiome and Metabolism**  
David R. Soto Pantoja, PhD ▪ Wake Forest School of Medicine Comprehensive Cancer Center
- 2:30–2:45 PM  
**ABSTRACT 095 - Evaluating the Therapeutic Potential of Antibiotics and Gut Microbiota Modulation for Intrahepatic Cholestasis Using a Murine Model**  
Shu-hao Hsu, PhD ▪ National Taiwan University College of Medicine
- 2:45–3:00 PM  
**ABSTRACT 096 - Cullin 3-NRF2 Axis Links Reductive Stress to Hepatic Metabolic Inflexibility in Obesity**  
Lijie Gu ▪ University of Oklahoma Health Sciences Center
- 3:00–3:15 PM  
**ABSTRACT 098 - Understanding the Role of EGFR and PPAR $\gamma$  in NAFLD Utilizing Hepatocyte-Specific Deletion in Adult Mice**  
Shehnaz Bano, PhD ▪ University of Pittsburgh
- 3:15–3:30 PM  
**ABSTRACT 101 - Extracellular Matrix Viscoelasticity Promotes Liver Cancer Progression in Ore-Cirrhotic NASH**  
Weiguo Fan, PhD ▪ Stanford University

**Session 057: ASIP Infectious Disease Workshop – Utilizing Alternative Model Systems to Study Infectious Diseases**

2:00–3:30 PM

*Sponsored by the ASIP Infectious Diseases Scientific Interest Group*

**Co-Chair:** Taylor Ticer, BS ▪ Medical University of South Carolina

**Co-Chair:** Melinda (Mindy) Engevik, PhD ▪ Medical University of South Carolina

*Location: Venezia*

- Chair - Welcome and Introductions
- 2:00–2:20 PM  
***Drosophila***  
Rheinallt Jones, PhD ▪ Emory University
- 2:20–2:40 PM  
***C. elegans***  
Jessica H. Hartman, PhD ▪ Medical University of South Carolina
- 2:40–3:00 PM  
***Organoids***  
Melinda (Mindy) Engevik, PhD ▪ Medical University of South Carolina
- 3:00–3:20 PM  
***Galleria***  
Philip Rather, PhD ▪ Emory University
- ***Questions and Answers***

**Session 058: ASIP Breast Cancer Workshop: The Intersection Between Breast Cancer and the Matrix**

2:00–3:30 PM

*Sponsored by the ASIP Breast Cancer Scientific Interest Group*

**Co-Chair:** Bethany Hannafon, PhD ▪ University of Oklahoma Health Sciences Center

**Co-Chair:** Dennis Jones, PhD ▪ Boston University

**Co-Chair:** Maryknoll Linscott ▪ Penn State College of Medicine

*Location: Grand D*

- Chair - Welcome and Introductions
- 2:00–2:30 PM  
***Fibrocytes: A Novel Cell Population Promoting Obesity-induced Breast Tumor Desmoplasia***  
Lisa Arendt, DVM, PhD ▪ University of Wisconsin-Madison
- 2:30–3:00 PM  
***Mechanobiology and Engineered In Vitro 3D Models to Better Understand Breast Cancer Growth and Metastasis***  
Delphine Gourdon, PhD ▪ University of Glasgow, Scotland United Kingdom
- 3:00–3:30 PM  
***Extracellular Matrix Biophysical Properties as Regulators of Cancer***  
Claudia Fischbach-Teschl, PhD ▪ Cornell University
- ***Questions and Answers***

**Session 059: ASIP Speed-Networking with Your Science: Getting to Know Your Neuropathology SIG Compatriots**

2:00–3:30 PM

*Sponsored by the ASIP Neuropathology Scientific Interest Group*

**Co-Chair:** Jessica Fortin, DVM, PhD ▪ Purdue University

**Co-Chair:** Michele Alves, PhD ▪ The Ohio State University

*Location: Grand A*

**Session Description:** Our Neuropathology Scientific Interest Group (SIG) is evolving, and we want you to be a part of this evolution! Please join other ASIP members interested in neuroscience, neuropathology, neurological disorders, and the nervous system in general as we reconnect with old friends and forge new relationships. The goals of this session are to create a forum for social and intellectual exchange and to engage members at all levels with an interest in the mechanisms underlying normal and pathological processes related to neuroscience. The format will model a speed-networking event to maximize interactions and engagement across the group. We hope this lays the foundation for a more vibrant Neuropathology SIG that represents the diversity of work across our Society in this scientific arena!

**Session 060: HCS Concurrent: Interorganelle Communication in Health and Disease**

2:00–3:30 PM

**Chair:** Margarida Barroso, PhD ▪ Albany Medical College

*Location: Imperial D*

- 2:00–2:30 PM  
***Spatial Regulation of Mitophagy***  
Jonathan Friedman, PhD ▪ UT Southwestern
- 2:30–3:00 PM  
***Lysosomal Dynamics in Parkinson's Disease***  
Luis Bonet-Ponce, PhD ▪ Ohio State University
- 3:00–3:15 PM  
***ABSTRACT 099 - SIRT6 Expression is Associated with Breast-to-Brain Metastasis Through Modulation of Fibronectin in the Tumor Microenvironment***  
Yu-Ting Tsai ▪ Wake Forest School of Medicine
- 3:15–3:30 PM  
***ABSTRACT 100 - DMT1-Dependent Endosome-Mitochondria Interactions Regulate Mitochondrial Iron Translocation and Metastatic Outgrowth***  
Margarida M. Barroso, PhD ▪ Albany Medical College

**Session 061: HCS and ASIP Joint Session: Cell-Cell Interactions in Inflammation**

2:00–3:30 PM

**Co-Chair:** Nathaniel Lartey, PhD ▪ University of Michigan

**Co-Chair:** Alejandro Adam, PhD ▪ Albany Medical College

*Location: Murano*

- 2:00–2:30 PM  
***Intercellular Junctions: Modulators of Endoplasmic Reticulum Morphology, Dynamics, and Stress***  
Andrew P. Kowalczyk, PhD ▪ Penn State College of Medicine
- 2:30–3:00 PM  
***Body Sculpting: The Cellular Machines That Construct the Vertebrate Embryos***  
John B. Wallingford, PhD ▪ University of Texas at Austin
- 3:00–3:30 PM  
***Nanoscale Protein Architecture of Cell-Cell Adhesion Complexes***  
Alexa Mattheyses, PhD ▪ University of Alabama at Birmingham

**Session 062: ASMB Concurrent: Immunomatrix and Fibrosis**

2:00–3:30 PM

**Chair:** Jennifer H. Elisseeff, PhD ▪ Johns Hopkins University

*Location: Imperial A*

- 2:00–2:30 PM  
***The Adaptive Immune System and Senescence in Fibrosis Progression***  
Jennifer H. Elisseeff, PhD ▪ Johns Hopkins University

- 2:30–2:45 PM  
**ABSTRACT 087 - Antimicrobial Peptides Reduce Bacterial-Induced Myofibroblast Differentiation Abrogating Subglottic Stenosis in Mice**  
Matthew R. Aronson ▪ University of Pennsylvania
- 2:45–3:00 PM  
**ABSTRACT 088 - A Biomarker of Collagen Type-I Degradation is Associated with Cardiac Fibrosis and Inflammation in Patients with Liver Cirrhosis**  
Emily Martin ▪ Nordic Bioscience and University of Copenhagen
- 3:00–3:15 PM  
**ABSTRACT 089- Lung Mesenchymal Cell Apoptosis and Plasticity Revealed by a BCL2 Overexpression Mouse Model**  
Maria Jose Gacha Garay ▪ MD Anderson Cancer Center - University of Texas Health Houston
- 3:15–3:30 PM  
**ABSTRACT 090 - Fibro-Inflammatory Changes in the Aging Ovarian Matrisome Inform Potential Ovarian Cancer Pathways**  
Shweta S. Dipali ▪ Northwestern University

**Session 067: ASIP Ocular Pathobiology Scientific Interest Group Organizational Meeting**

2:00 PM-3:30 PM

**Sponsored by the ASIP Ocular Pathobiology Scientific Interest Group**

**Chair:** Patricia A. D'Amore, PhD ▪ Schepens Eye Research Institute of Mass. Eye & Ear, Harvard Medical School

**Location:** Vienna (third floor)

**Session Description:** Members of the Ocular Pathobiology SIG will hold an organizational meeting to discuss plans for future events and initiatives that will serve the interests and needs of the members of the SIG.

**Coffee Break**

3:30–4:00 PM

**Location:** Ballroom Reception

**Session 063: ASMB Concurrent: Iozzo Award Session**

**Announcement of the Founders Award: Simon Schwörer**

4:00–5:30 PM

**Chair:** ASMB Award Committee Chair

**Location:** Imperial B

**Session Description:** ASMB Founders' Awardee is recognized. Then, six finalists will present their work in competition for the Iozzo Post-Doc and Trainee Awards

- 4:00–4:15 PM  
**Metabolic Control of Matrix Synthesis**  
Simon Schwörer, PhD ▪ University of Chicago  
**ASMB 2023 Founders' Awardee**
- 4:15–4:25 PM  
**ABSTRACT 066 - Fibronectin-Mediated Physiological and Pathological Mechanisms in Skeletal Development**  
Neha Dinesh ▪ McGill University
- 4:25–4:35 PM  
**ABSTRACT 090 - Fibro-Inflammatory Changes in the Aging Ovarian Matrisome Inform Potential Ovarian Cancer Pathways**  
Shweta Dipali ▪ Northwestern University
- 4:35–4:45 PM  
**ABSTRACT 206 - Transcription Factor HOXA5 is Mechanically Regulated in Pulmonary Fibroblasts via Integrin  $\alpha$ V Signaling**  
Andrew Miller ▪ University of Virginia
- 4:45–4:55 PM  
**ABSTRACT 094 - Examining the Effects of Nanoscale Patterning of TGF $\beta$ <sup>2</sup> Receptors and Viscoelastic Material Properties on Regulating TGF $\beta$  Signaling**  
Aryssa Simpson, PhD ▪ North Carolina State University/University of North Carolina at Chapel Hill

- 5:00–5:15 PM  
**ABSTRACT 144 - *Unraveling the Molecular Basis of SNED1-Mediated Cell Adhesion***  
Dharma Pally, PhD ▪ University of Illinois Chicago
- 5:15–5:30 PM  
**ABSTRACT 058 - *Cross-Talk Between the Extracellular Matrix and the Cell-cell Junction-Associated RNAi Machinery Regulates Colon Cancer Cell Behavior***  
Amanda Daulagala, PhD ▪ Medical University of South Carolina

**Session 064: ASMB Concurrent: Post-Doc Special Interest Session: ECM Mechanosensing and Cell Behavior**

4:00–5:30 PM

**Co-Chair:** Ryan J. Petrie, PhD ▪ Drexel University

**Co-Chair:** Guilherme Nader, PhD ▪ Children’s Hospital of Philadelphia/University of Pennsylvania Perelman School of Medicine

**Location:** Grand A

- 4:00–4:15 PM  
***Matrix Rigidity favors Genetic Instability -- From Single Cell Studies to Big Data***  
Dennis Discher, PhD ▪ University of Pennsylvania
- 4:15–4:30 PM  
***Tumor Cell Response to ECM Targeted Therapy***  
Suzanne Ponik, PhD ▪ University of Wisconsin-Madison
- 4:30–4:45 PM  
***Myosin-Independent Mechanosensing of Cell Spreading: Mechanistic Insights from Biophysical Modeling and Simulations***  
Tamara Bidone, PhD ▪ University of Utah
- 4:45–5:00 PM  
***Compromised Nuclear Envelope Integrity Leads to Tumor Cell Invasion***  
Guilherme Nader, PhD, Children’s Hospital of Philadelphia and University of Pennsylvania Perelman School of Medicine
- 5:00–5:10 PM  
**ABSTRACT 101 - *Decorin Maintains Cartilage Surface Integrity and Chondrocyte Mechanotransduction During Aging***  
Mingyue Fan ▪ Drexel University
- 5:10–5:20 PM  
**ABSTRACT 102 - *Effects of Collagen V on Fibril Morphology and Fibroblast Adhesion and Contractility***  
Sangyoon Joshua Han, PhD ▪ Michigan Technological University
- 5:20–5:30 PM  
**ABSTRACT 103 - *P-Glycoprotein Trafficking is Dependent on Myosin Vb in Intestinal Cells***  
Sarah Aline Dooley ▪ Medical University of South Carolina

**Session 065: ASMB Concurrent: Imaging the Matrix**

4:00–5:30 PM

**Chair:** Sarah Calve, PhD, *University of Colorado, Boulder*

**Location:** Grand D

- 4:00–4:30 PM  
***3D Visualization of the Extracellular Matrix During Musculoskeletal Development***  
Sarah Calve, PhD ▪ University of Colorado, Boulder
- 4:30–4:45 PM  
**ABSTRACT 104 - *Type III Collagen Regulates Matrix Architecture and Mechanoperception During Cutaneous Wound Healing***  
Daniel C. Stewart, PhD ▪ University of Pennsylvania
- 4:45–5:00 PM  
**ABSTRACT 105 - *TGFβ2 Induced Ultrastructure and Morphometric Changes in the Mouse Trabecular Meshwork***  
Timur Mavlyutov, PhD ▪ University of Wisconsin-Madison

- 5:00–5:15 PM  
**ABSTRACT 106 - *The Development of the Extracellular Matrix of the Brain***  
Igal Sterin ▪ University of Utah
- 5:15–5:30 PM  
**ABSTRACT 107 - *Collagen Fibers within Dystrophic Skeletal Muscle Extracellular Matrix Dynamically Re-align and Resist Enzymatic Digestion in a Strain Dependent Fashion***  
Ross Paul Wohlgemuth ▪ University of California, Davis

**Session 066: ASIP Meet-the-Expert – Exploring Scholarly Publishing & Science Communications**

4:00–5:30 PM

**Sponsored by the ASIP Women in Pathology**

**Co-Chair:** Pilar Alcaide, PhD ▪ Tufts University

**Co-Chair:** Traci Parry, PhD ▪ University of North Carolina at Greensboro

**Co-Chair:** Nakisha Rutledge, PhD ▪ University of Chicago

**Co-Chair:** Francisco Carrillo-Salinas, PhD ▪ Tufts University

*Location: Imperial A*

**Session Description:** If you have a flair for writing, editing, reviewing, communicating, and disseminating your science to experts as well as audiences with diverse backgrounds, this session may be for you. Join us for a panel discussion with scientists who chose and built successful careers in scientific publishing and science communications.

Panelists:

- Martha Furie, PhD ▪ Stony Brook University
- Chhavi Chauhan, PhD ▪ American Society for Investigative Pathology
- Liliana Schaefer, MD ▪ Goethe University

**Session 068: ASIP Digital Pathology and Artificial Intelligence Applications in the Biotech Industry**

4:00–5:30 PM

**Sponsored by the ASIP Pathology in Biotech and Industry Scientific Interest Group**

**Co-Chair:** Cary Austin, MD, PhD ▪ Genentech, Inc.

**Co-Chair:** Sripad Ram, PhD ▪ Pfizer, Inc.

*Location: Murano*

- 4:00–4:25 PM  
***From Macro to Micro: 3D Spatiotemporal Analysis of Nanoparticles in Tumor Tissue Using VIOLA Technology***  
Sripad Ram, PhD ▪ Pfizer, Inc.
- 4:25–4:45 PM  
***Digital Pathology and AI Approaches to Biomarker Discovery***  
Suzana S. Couto, DVM, PhD, Dip ACVP ▪ Neomorph
- 4:45–5:05 PM  
***Spatially-Informed, AI-Powered Assessment of the Tumor Immune Microenvironment at Massive Scale and Single Cell Resolution***  
Jenifer Giltnane, MD, PhD ▪ Genentech
- 5:05–5:25 PM  
***Artificial Intelligence-Powered Detection and Characterization of Fibrosis in Liver Histology***  
Lara P Murray, PhD ▪ PathAI

**Session 069: HCS Concurrent with the Immunohistochemistry and Microscopy SIG: Organoids and 3-D models**

4:00–5:30 PM

**Co-Chair:** A. Sally Davis, DVM, PhD, DACVP, DACVM ▪ Horner Davis Consulting

**Co-Chair:** Alexandra Chang-Graham, MD, PhD ▪ Stanford University

*Location: Imperial D*

- 4:00–4:30 PM  
***Patient-Derived Micro-Organospheres Enable Clinical Precision Oncology***  
Xiling Shen ▪ Terasaki Institute & Xilis, Inc.

- 4:30–4:45 PM  
**ABSTRACT 108 - Fibrotic Fibro-Adipogenic Progenitors Impair Myogenesis Through Extracellular Matrix Deposition**  
Taryn Loomis ▪ University of California, Davis
- 4:45–5:00 PM  
**ABSTRACT 109 - LPS and Cytokines-Induced Pro-Inflammatory Insult: Upregulation of Barrier Proteomic Expression in Human Colonoids**  
Muhammad N. Aslam, MBBS ▪ The University of Michigan
- 5:00–5:15 PM  
**ABSTRACT 110 - Loss of Myosin 5b Results in Mislocalization of Intestinal Alkaline Phosphatase and a More Susceptible Epithelium**  
Rachel Stubler ▪ Medical University of South Carolina
- 5:15–5:30 PM  
**ABSTRACT 111 - Biofabricated Microcapsules Facilitate Formation of Matrigel-free 3D Tumor Model Alternatives**  
Arun Asif, PhD ▪ Albany Medical College

**Session 070: HCS Concurrent: Cardiac Fibrosis**

4:00–5:30 PM

**Chair:** Taben M. Hale, PhD ▪ University of Arizona

*Location: Imperial C*

- 4:00–4:30 PM  
**Extracellular Matrix Regulation in the Hypertensive Heart: Does Sex Matter?**  
Taben M. Hale, PhD ▪ University of Arizona, College of Medicine – Phoenix
- 4:30–5:00 PM  
**Chromatin Signaling in Cardiac Fibrosis**  
Timothy A. McKinsey, PhD ▪ University of Colorado Anschutz Medical Campus
- 5:00–5:15 PM  
**ABSTRACT 112 - Novel Role of Endothelial Cell Stimulator of Interferon Genes (STING) in Systolic Dysfunction and Adverse Cardiac Remodeling Induced by Cardiac Pressure Overload**  
Erin Sanders ▪ Tufts University
- 5:15–5:30 PM  
**ABSTRACT 113 - Regulating Senescence Via PADI Inhibition in Cardiac Myofibroblasts, May Help the Fibrosis in Dilated Cardiomyopathy**  
Alia Sadiq, PhD ▪ Cedars-Sinai Medical Center

**Session 071: ASIP Gold-Headed Cane Award Lecture**

5:30–6:30 PM

*Location: Imperial A&B*

- **HPV and Cancer**  
Peter M. Howley, MD ▪ Dana-Farber/Harvard Cancer Center, Harvard Medical School

**ASIP Scientific Interest Group Networking and Social Event**

6:30–9:00 PM

*Location: Grand A&D, and Grand Reception*

**ASMB Social – Off Site at Bewilder Brewing Co.**

7:00–9:00 PM

Pre-registration is required.

*Location: 445 S. 400 W. SLC, UT 84047 (walking distance from the hotel)*

<https://bewilderbrewing.com/>

**Session 072: Education/Career Development Session - Elevate Your Communication Skills: A Masterclass in Verbal and Visual Communication**

7:00–8:30 AM

**Co-Sponsored by the ASIP Committee for Career Development**

**Co-Chair:** Daisy Shu, PhD ▪ Schepens Eye Research Institute, Harvard Medical School

**Co-Chair:** Traci Parry, PhD ▪ University of North Carolina at Greensboro

*Location: Murano*

**Session Description:** Effective communication is critical for a successful career in scientific research. This session features experts in visual and verbal communication that will help create thought-provoking and engaging presentations that clearly highlight the most important points of your talk. Our vocal coach will provide tips on how to harness the best tone and pitch of your voice and our graphic designer will reveal how to assemble clear and concise visual aids with an emphasis of effective slide design. In this session you will learn tips on improving audience engagement to maximize your message through powerful tools from leading experts in vocal and visual communication.

**Valerie Kittel, Trained Communications and Public Speaking Coach**

Valerie is a theatre-trained communicator and public speaking coach based in Salt Lake City, Utah. Drawing from 35+ years professional experience in theatre she combines presentation delivery techniques, psychology, and the latest communication research to help professionals develop a strong and influential speaking style.

**Session 073: ASMB Plenary: Infection and ECM**

8:30–10:00 AM

**Chair:** Enid R. Neptune, MD ▪ John Hopkins Medicine

*Location: Imperial A*

- 8:30–9:00 AM  
***Crosslinking Mechanisms in Hyaluronan Matrices and Their Roles in Health and Disease***  
Anthony Day, BA, MA, DPhil ▪ University of Manchester
- 9:00–9:30 AM  
***Hot-Spots for Biofilm Infections: The Role of Host ECM Proteins and Their Conformation***  
Rikke Louise Meyer ▪ Aarhus University
- 9:30–10:00 AM  
***Transmembrane and Multiplexin Collagens in Development and Pathobiology***  
Taina Pihlajaniemi, MD, PhD ▪ University of Oulu  
**International Society for Matrix Biology 2023 Distinguished Investigator Awardee**

**Session 074: ASIP Organoids Models of Disease**

8:30–10:00 AM

**Co-Chair:** Ronen Sumagin, PhD ▪ Northwestern University

**Co-Chair:** Melinda (Mindy) Engevik, PhD ▪ Medical University of South Carolina

*Location: Grand D*

- Chair - Welcome and Introductions
- 8:30–8:50 AM  
***Organoid Modeling of Epithelial Force Sensing***  
Arthur Beyder, MD, PhD ▪ Mayo Clinic
- 8:50–9:10 AM  
***Using 3D Organoids to Define Functional Roles for Cell Populations in Esophageal Homeostasis and Cancer***  
Kelly A. Whelan, PhD ▪ Temple University

- 9:10–9:30 AM  
**Using Liver Organoids to Better Understand Cellular Trafficking and Liver Biology**  
Amy Engevik, PhD ▪ Medical University of South Carolina
- 9:30–9:50 AM  
**Dissecting Host Immune Responses to Enteric Microbes Using Human Enteroid-Immune Cell Co-Cultures**  
Nicholas Zachos, PhD ▪ Vanderbilt University
- **Questions and Answers**

#### Session 075: ASIP Cancer Pathobiology Minisymposium

8:30–10:00 AM

**Co-Chair:** Louisa Tichy ▪ University of North Carolina at Greensboro

**Co-Chair:** Joy Winfield ▪ Columbia University

*Location: Imperial D*

- 8:30–8:45 AM  
**ABSTRACT 114 - Rapid Region-Based Detection AI Accurately Localizes Oral Squamous Cell Carcinoma Tumors**  
Benjamin Martin, BSc ▪ University of Toronto
- 8:45–9:00 AM  
**ABSTRACT 115 - Promoting Immune Cell Activation and Recruitment via the Interferon Response Factor-2 (IRF2) Reduces Disease Burden in  $\beta$ -catenin-Mutated HCC Models**  
Evan Delgado, PhD ▪ University of Pittsburgh
- 9:00–9:15 AM  
**ABSTRACT 116 - NF- $\kappa$ B Activation in HCCs with CTNNB1 Mutations Reduces Immune Escape and Inhibits Disease Pathogenesis**  
Panari Patel ▪ University of Pittsburgh
- 9:15–9:30 AM  
**ABSTRACT 117 - Nuclear Factor Erythroid 2-related Factor 2 and MET Co-activation Induces Hepatocellular Carcinoma in Mice**  
Brandon M. Lechrich ▪ University of Pittsburgh
- 9:30–9:45 AM  
**ABSTRACT 118 - Distinct Cooperating Oncogenes and Reproductive History Promote the Progression of Specific Ras-mutant Premalignant Clones in Multistage Murine Breast Cancer Models**  
Maryknoll Linscott ▪ Penn State College of Medicine
- 9:45–10:00 AM  
**ABSTRACT 119 - Lenvatinib Monotherapy in a Novel Acral Melanoma Patient Derived Xenograft (PDX) Cohort**  
Eric Smith, MD, PhD ▪ Huntsman Cancer Institute

#### Session 076: ASIP Pathobiology of Inflammation Minisymposium

8:30–10:00 AM

**Co-Chair:** Francisco Carrillo-Salinas, PhD ▪ Tufts University

**Co-Chair:** Erika Arias ▪ Northwestern University

*Location: Murano*

- 8:30–8:45 AM  
**ABSTRACT 120 - The Effect of Noncanonical Inflammasome Caspase-11 on Tissue Factor Release in Trauma-Induced Coagulopathy and Organ Damage**  
Joud Mulla, MS ▪ University of Pittsburgh
- 8:45–9:00 AM  
**ABSTRACT 218 - The Role of CCR2+ Myeloid Cell Transmigration in Non-proliferative Diabetic Retinopathy**  
Vivienne Fang, BS ▪ Northwestern University
- 9:00–9:15 AM  
**ABSTRACT 122 - Identifying Mechanisms Regulating Transendothelial Migration of Neutrophils in the Lungs During Acute Airspace Disease**  
Maureen Haynes, BS ▪ Northwestern University

- 9:15–9:30 AM  
**ABSTRACT 123 - HES1 Loss and Counteracting ATOH1 Up-regulation Promotes Intestinal Stem Cell Regeneration of Ulcerative Colitis**  
Bingqing Zou, MD, PhD ▪ Methodist Hospital Research Institute
- 9:30–9:45 AM  
**ABSTRACT 124 - Deletion of MyD88 in T-Cells Improves Anti-Tumor Immunity in Melanoma**  
Abraham Bayer, BS ▪ Tufts University Graduate School of Biomedical Sciences
- 9:45–10:00 AM  
**ABSTRACT 125 - Spatial Transcriptomics Identifies Epithelial Cell Control of Neutrophil Chemotaxis in the Human Female Genital Mucosa**  
Francisco Carrillo-Salinas, PhD ▪ Tufts University

**Session 077: HCS Plenary: Sphingolipids in Health and Disease**

8:30–10:00 AM

**Chair:** Josef Pfeilschifter, Goethe University

*Location: Imperial B*

- 8:30–9:00 AM  
**The Multiple Faces of S1P in Renal Fibrosis**  
Andrea Huwiler, PhD ▪ University of Bern, Switzerland
- 9:00–9:30 AM  
**Bioactive Lipids Modulation of Development, Homeostasis and Pathology**  
Timothy Hla, PhD ▪ Harvard Medical School, Boston
- 9:30–10:00 AM  
**Sphingosine-1-Phosphate Signaling in Neuron-astrocyte Interactions**  
Sandeep Singh, PhD ▪ Virginia Commonwealth University School of Medicine, Richmond, VA

**Coffee Break**

10:00–10:30 AM

*Location: Imperial Ballroom Reception*

**Session 078: ASMB, HCS, and ASIP Joint Plenary Session – Cancer Progression and Metastasis**

10:30 AM–12:00 PM

**Co-Sponsored by the American Society for Matrix Biology, the Histochemical Society, and the American Society for Investigative Pathology**

**Co-Chair:** Bethany Hannafon, PhD ▪ University of Oklahoma Health Sciences Center

**Co-Chair:** Rolf Brekken, PhD ▪ UT Southwestern Medical Center

**Co-Chair:** Stephen Hewitt, MD, PhD ▪ National Institutes of Health

*Location: Imperial A&B*

- Chair – Welcome and Introductions
- 10:30–11:00 AM  
**Influence of Extracellular Matrix Tumor Microenvironment on Drug Response and Resistance**  
Taru Muranen, PhD ▪ Harvard Medical School, Beth Israel Deaconess Medical Center, Dana Farber/Harvard Cancer Center
- 11:00–11:30 AM  
**Mechanical, Architectural, and Biochemical Interactions in Tumor Microenvironment that Drive Cancer Progression**  
Paolo Provenzano, PhD ▪ University of Minnesota
- 11:30 AM–12:00 PM  
**The Role of DDR1 and Fibrillar Collagens in Pancreatic Cancer Progression**  
Howard Crawford, PhD ▪ Henry Ford Cancer Center
- **Questions and Answers**

**MEETING ADJOURNMENT 12:00 PM**

## Poster Sessions

### Basement Membranes – Poster Session

#### Poster 1 - Abstract 071

##### **Cryo-EM Reveals the Molecular Basis of Laminin Polymerization and LN-lamininopathies**

Arkadiusz W. Kulczyk<sup>1\*</sup>, Karen K. McKee<sup>2</sup>, Ximo Zhang<sup>3</sup>, Iwona Bizukojc<sup>3,4</sup>, Ying Q. Yu<sup>3</sup>, and Peter D. Yurchenco<sup>2</sup>

<sup>1</sup>*Institute for Quantitative Biomedicine, Department of Biochemistry and Microbiology, Rutgers University, Piscataway, NJ;* <sup>2</sup>*Department of Pathology and Laboratory Medicine, Rutgers University - Robert Wood Johnson Medical School, Piscataway, NJ;* <sup>3</sup>*Waters Corporation, Milford, MA;* <sup>4</sup>*Cryo-EMcorp, Bridgewater, NJ*

#### Poster 2 - Abstract 126

##### **Laminin $\alpha$ 5\_CD239\_Spectrin Is a Compensatory Linkage between Basement Membrane and Cytoskeleton in Skeletal Muscle Fibers**

Yamato Kikkawa<sup>1</sup>, Masumi Matsunuma<sup>1</sup>, Ryuji Kan<sup>1</sup>, Yuji Yamada<sup>1</sup>, Keisuke Hamada<sup>1</sup>, Motoyoshi Nomizu<sup>1</sup>, Yoichi Negishi<sup>2</sup>, Shushi Nagamori<sup>3</sup>, Tatsushi Toda<sup>4</sup>, Minoru Tanaka<sup>5</sup>, Motoi Kanagawa<sup>6</sup>

<sup>1</sup>*Department of Clinical Biochemistry, Tokyo University of Pharmacy and Life Sciences, Tokyo, Japan;* <sup>2</sup>*Department of Drug Delivery and Molecular Biopharmaceutics, Tokyo University of Pharmacy and Life Sciences, Tokyo, Japan;* <sup>3</sup>*Department of Laboratory Medicine, The Jikei University School of Medicine, Tokyo, Japan;* <sup>4</sup>*Department of Neurology, Graduate School of Medicine, The University of Tokyo, Tokyo, Japan;* <sup>5</sup>*Department of Regenerative Medicine, Research Institute, National Center for Global Health and Medicine, Tokyo, Japan;* <sup>6</sup>*Department of Cell Biology and Molecular Medicine, Ehime University Graduate School of Medicine, Toon, Ehime, Japan*

#### Poster 3 - Abstract 127

##### **Factors Involved in the Biosynthesis of Type IV Collagen ( $\alpha$ 1 $\alpha$ 1 $\alpha$ 2) in CHO cells**

Kazunori Mizuno and Tomonori Ueno  
*Nippi Research Institute of Biomatrix, Ibaraki, Japan*

#### Poster 4 - Abstract 128

##### **Strategy for Making Functional Collagen Fragments: A Window into Collagen Biology and Therapy**

Sergei P. Boudko<sup>1,2,3</sup>, Elizabeth H. Konopka<sup>4</sup>, Woojin Kim<sup>4</sup>, Yuki Taga<sup>5</sup>, Kazunori Mizuno<sup>5</sup>, Timothy A.

Springer<sup>6</sup>, Billy G. Hudson<sup>1,2,3,7-10</sup>, Terence I. Moy<sup>4</sup>, and Fu-Yang Lin<sup>4</sup>

<sup>1</sup>*Department of Medicine, Division of Nephrology and Hypertension, Vanderbilt University Medical Center, Nashville, TN;* <sup>2</sup>*Center for Matrix Biology, Vanderbilt University Medical Center, Nashville, TN;* <sup>3</sup>*Department of Biochemistry, Vanderbilt University, Nashville, TN;* <sup>4</sup>*Morphic Therapeutics, Inc., Waltham, MA;* <sup>5</sup>*Nippi Research Institute of Biomatrix, Toride, Ibaraki, Japan;* <sup>6</sup>*Department of Biological Chemistry and Molecular Pharmacology, Program in Cellular and Molecular Medicine, Boston Children's Hospital, Harvard Medical School, Boston, MA;* <sup>7</sup>*Department of Pathology, Microbiology, and Immunology, Vanderbilt University Medical Center, Nashville, TN;* <sup>8</sup>*Department of Cell and Developmental Biology, Vanderbilt University Medical Center, Nashville, TN;* <sup>9</sup>*Vanderbilt-Ingram Cancer Center, Vanderbilt University Medical Center, Nashville, TN;* <sup>10</sup>*Vanderbilt Institute of Chemical Biology, Vanderbilt University, Nashville, TN*

#### Poster 5 - Abstract 129

##### **Compression Regulates Molecular Permeability of the Glomerular Basement Membrane**

Nicholas Ferrell and Dan Wang,  
*Department of Internal Medicine, Division of Nephrology, Ohio State University Wexner Medical Center, Columbus, OH*

#### Poster 6 - Abstract 130

##### **Using Zebrafish as a Novel Model for COL4A1-associated Cerebral Small Vessel Disease**

Daisy Flatman, Siobhan Crilly, Richard Naylor, Emmanuel Pinteaux, Stuart Allan, Rachel Lennon, and Paul Kasher  
*Division of Neuroscience, University of Manchester, Manchester, United Kingdom*

#### Poster 7 - Abstract 131

##### **Determining the Collagen IV Biosynthetic Interactome and the Differential Roles of Collagen Modifying Enzymes**

Yoshihiro Ishikawa<sup>1</sup>, Seán Gorman<sup>1</sup>, Carlie Abdala<sup>1</sup>, Yuki Taga<sup>2</sup>, Mohamed Rafi<sup>3</sup>, Kazunori Mizuno<sup>2</sup>, Cassandre Labelle-Dumais<sup>1</sup>, Roberto M. Vanacore<sup>3</sup>, and Douglas B. Gould<sup>1,4</sup>

<sup>1</sup>*Department of Ophthalmology, University of California San Francisco, School of Medicine, CA;* <sup>2</sup>*Nippi Research Institute of Biomatrix, Ibaraki, Japan;* <sup>3</sup>*Division of Nephrology and Hypertension, Vanderbilt University Medical Center, Nashville, TN;* <sup>4</sup>*Department Anatomy, Cardiovascular Research*

*Institute, Bakar Aging Research Institute, and Institute for Human Genetics, University of California, San Francisco, CA*

**Poster 8 - Abstract 132**

**The Laminin  $\beta$ 2 Chain Regulates the Selective Routing of Retinal Ganglion Cell Axons**

Reyna I. Martínez-De Luna<sup>1</sup>, Madeline Turo<sup>1</sup>, and Adam Robinson<sup>1</sup>

<sup>1</sup>Department of Ophthalmology & Visual Sciences, Upstate Medical University, Syracuse, NY;

<sup>2</sup>Pennsylvania College of Optometry - Salus University

**Poster 9 - Abstract 133**

**Proteomics Analysis of the Pkd1nl/nl Mouse at P28 Identifies Novel Insights into Matrix Pathology Associated with ADPKD**

Richard W. Naylor<sup>1</sup>, Ambra Pozzi<sup>2</sup>, and Rachel Lennon<sup>1</sup>

<sup>1</sup>University of Manchester, Manchester, United Kingdom; <sup>2</sup>Vanderbilt University, Nashville, TN

**Cancer Pathobiology – Poster Session**

**Poster 10 - Abstract 015**

**A New Journey for Cancer Research – Targeting Glycosylation: Glysite™ Scout Glycan Screening Kits for Comprehensive Detection of Glycan Expression**

Shuhui Chen, August Estabrook, and Erika Leonard  
*Vector Labs, Newark, CA*

**Poster 11 - Abstract 020**

**Modeling the Influence of Stroma in Ovarian Cancer Drug Resistance in a Microvascularized Multiniche Tumor-On-a-Chip**

Simona Plesselova<sup>1</sup>, and Pilar de la Puente<sup>1,2</sup>

<sup>1</sup>Cancer Biology and Immunotherapies Group, Sanford Research, Sioux Falls, SD; <sup>2</sup>Department of Obstetrics and Gynecology, University of South Dakota Sanford School of Medicine, Sioux Falls, SD

**Poster 12 - Abstract 029**

**Fluorescence Resonance Energy Transfer Based Molecular Beacon Probe for *in situ* Hybridization**

Narantsog Choijookhuu<sup>1</sup>, Yasuaki Shibata<sup>2</sup>, Takumi Ishizuka<sup>1</sup>, Yan Xu<sup>3</sup>, Takehiko Koji<sup>2</sup>, and Yoshitaka Hishikawa<sup>1</sup>

<sup>1</sup>Department of Anatomy, Histochemistry and Cell Biology, Faculty of Medicine, University of Miyazaki, Kiyotake, Miyazaki, Japan; <sup>2</sup>Department of Histology and Cell Biology, Nagasaki University Graduate School of Biomedical Sciences, Nagasaki, Japan; <sup>3</sup>Division of

*Chemistry, Department of Medical Sciences, Faculty of Medicine, University of Miyazaki, Kiyotake, Miyazaki, Japan*

**Poster 13 - Abstract 134**

**PEGylated Functional Upstream Domain (PEG-FUD): An Anti-cancer Therapy for Breast Cancer**

Metti K. Gari<sup>1</sup>, Hye Jin Lee<sup>2</sup>, David R. Inman<sup>1</sup>, Brian M. Burkel<sup>1</sup>, Glen S. Kwon<sup>2</sup>, and Suzanne M. Ponik<sup>1</sup>

<sup>1</sup>Department of Cell and Regenerative Biology, University of Wisconsin - Madison, Madison, WI;

<sup>2</sup>Pharmaceutical Sciences Division, School of Pharmacy, University of Wisconsin - Madison, Madison, WI

**Poster 14 - Abstract 135**

**Effects of Biological Sex on Tumor-Mediated Muscle Dysfunction and Wasting**

Traci L. Parry, Louisa Tichy, Jason T. Brantley, Zachary Swan, and George Blackburn

*Department of Kinesiology, University of North Carolina Greensboro, Greensboro, NC*

**Poster 15 - Abstract 136**

**Tumor Bearing Results in Metabolic Dysfunction and Skeletal Muscle Wasting in Apc(min/+) Mice**

Louisa Tichy and Traci L. Parry

*Department of Kinesiology, The University of North Carolina at Greensboro, Greensboro, NC*

**Poster 16 - Abstract 137**

**Identification of the Roles of ADAMTS12 Secreted by Stellate Cells during Tumor Progression in Cholangiocarcinoma**

Esther Arpigny<sup>1</sup>, Fátima Manzano Núñez<sup>2</sup>, Vincent Legagneux<sup>3</sup>, Nathalie Thérêt<sup>3</sup>, Frédéric Lemaigre<sup>2</sup>, and Alain Colige<sup>1</sup>

<sup>1</sup>Laboratory of Connective Tissues Biology, GIGA-Cancer, University of Liège, Liège, Belgium; <sup>2</sup>Liver and Pancreas Differentiation Unit, de Duve Institute, Université Catholique de Louvain, Brussels, Belgium; <sup>3</sup>INSERM, EHESP, Irset (Institut de Recherche en santé, Environnement et Travail), University of Rennes, France

**Poster 17 - Abstract 138**

**Dissecting the Role of miR-146a in Metabolic Dysfunction-Associated Steatohepatitis and Hepatocellular Carcinoma**

Chad VanSant-Webb, Morgan Nelson, Rich Smith, Ryan O'Connell, and Kimberley Evason

*Department of Pathology, Huntsman Cancer Institute, University of Utah, Salt Lake City, UT*

**Poster 18 - Abstract 139**

**Gp78 Expression Activates Breast Cancer Tumor Growth Through Immunogenetic, Lipogenetic, and Endoplasmic Reticulum Stress Relief Pathways**

Joy R. Winfield, Myles Ellis, and Kevin L. Gardner  
*Department of Pathology and Cell Biology, Columbia University, New York, NY*

**Poster 19 - Abstract 140**

**P120 Expression Mitigates Kaiso Expression-Associated Survival Risk in Breast Cancer Patients of African Ancestry**

Joy R. Winfield, Myles Ellis, and Kevin L. Gardner  
*Department of Pathology and Cell Biology, Columbia University, New York, NY*

**Poster 20 - Abstract 141**

**Inhibiting Melanoma-Associated Axonogenesis Using Semaphorin-3F**

Amara Nnawuchi, Annika Kamath, Abdulrahman Nakshabandi, Yao Gao, and Diane R. Bielenberg  
*Vascular Biology Program, Boston Children's Hospital, Boston, MA*

**Poster 21 - Abstract 142**

**Exploring the Role of Obesity-Induced Extracellular Matrix Remodeling in the Progression of Breast Cancer**

Malika A. Sekhri, Stevi Johnson-Murguia, Queen M. Pierre, Michael Kinter, Rebecca L. Scalzo, Bethany N. Hannafon, and Elizabeth A. Wellberg  
*Department of Pathology, University of Oklahoma Health Science Center, Oklahoma City, OK*

**Poster 22 - Abstract 143**

**Novel Multianalyte Biomarker Panel for Early Detection of Ovarian Cancer Leveraging the Matrisome**

Amrita Bhagia<sup>1,2</sup>, Megan Jorgensen<sup>1,2</sup>, Maria Bell<sup>3</sup>, and Pilar de la Puente<sup>1,3,4</sup>  
<sup>1</sup>*Cancer Biology and Immunotherapies, Sanford Research, Sioux Falls, SD*; <sup>2</sup>*MD PhD Program, University of South Dakota Sanford School of Medicine, Sioux Falls, SD*; <sup>3</sup>*Department of Obstetrics and Gynecology, University of South Dakota Sanford School of Medicine, Sioux Falls, SD*; <sup>4</sup>*Department of Surgery, University of South Dakota Sanford School of Medicine, Sioux Falls, SD*

**Poster 23 - Abstract 144**

**Unraveling the Molecular Basis of SNED1-Mediated Cell Adhesion**

Dharma Pally<sup>1</sup>, Nandini Kapoor<sup>1</sup>, and Alexandra Naba<sup>1,2</sup>

<sup>1</sup>*Department of Physiology and Biophysics, University of Illinois Chicago, Chicago, IL*; <sup>2</sup>*University of Illinois Cancer Center, Chicago, IL*

**Poster 24 - Abstract 145**

**TIMP2 as an Anti-tumor Homeostatic Regulator in a Lewis Lung Carcinoma Mouse Model**

Yueqin Liu, David Peeney, Sarvesh Kumar, Sandra M. Jensen, Alex Kuznetsov, Dillion Richardson, Sadeechya Gurung, Carolyn Lazaroff, Sasha Coates-Park, Joshua Rich, and William Stetler-Stevenson  
*Laboratory of Pathology, National Cancer Institute, National Institutes of Health, Bethesda, MD*

**Poster 25 - Abstract 146**

**Integrin  $\alpha 3\beta 1$  Regulates *Mmp9* mRNA Alternative Polyadenylation in Skin Tumors and Wounds**

Giesse Albeche Duarte<sup>1</sup>, Whitney Longmate<sup>2</sup>, Wu, Lei Wu<sup>2</sup>, and C. Michael DiPersio<sup>1,2</sup>  
<sup>1</sup>*Department of Molecular and Cellular Physiology, Albany Medical College, Albany, NY*; <sup>2</sup>*Department of Surgery, Albany Medical College, Albany, NY*

**Poster 26 - Abstract 147**

**$\beta$ -catenin Negatively Influences B Cell Recruitment to the  $\beta$ -catenin-mutated Hepatocellular Carcinoma Microenvironment Correlating to Patient Outcomes**

Brandon M. Lehrich<sup>1</sup>, Junyan Tao<sup>1</sup>, Evan R. Delgado<sup>1</sup>, Aatur D. Singhi<sup>1,2</sup>, Silvia Liu<sup>1,2</sup>, and Satdarshan P. Monga<sup>1,2,3</sup>  
<sup>1</sup>*Department of Pathology, University of Pittsburgh, School of Medicine and University of Pittsburgh Medical Center, Pittsburgh, PA*; <sup>2</sup>*Pittsburgh Liver Research Center, University of Pittsburgh, School of Medicine and University of Pittsburgh Medical Center, Pittsburgh, PA*; <sup>3</sup>*Department of Medicine, University of Pittsburgh, School of Medicine and University of Pittsburgh Medical Center, Pittsburgh, PA*

**Poster 27 - Abstract 148**

**Evidence that Tumor/Fibroblast Crosstalk Potentiates ESR1 Mutant BC Cell Malignancy**

Luca Gelsomino<sup>1,2</sup>, Amanda Caruso<sup>1</sup>, Rocco Malivindi<sup>1</sup>, Adele Elisabetta Leonetti<sup>1</sup>, Emine Tasan<sup>1</sup>, Giuseppina Daniela Naimo<sup>1</sup>, Ines Barone<sup>1,2</sup>, Cinzia Giordano<sup>1,2</sup>, Daniela Bonofiglio<sup>1,2</sup>, Loredana Mauro<sup>1</sup>, Guowei Gu<sup>3</sup>, Suzanne A.W. Fuqua<sup>3</sup>, Stefania Catalano<sup>1,2</sup>, and Sebastiano Andò<sup>1,2</sup>  
<sup>1</sup>*Department of Pharmacy and Health and Nutritional Sciences, University of Calabria, Rende, Italy*; <sup>2</sup>*Centro*

Sanitario, University of Calabria, Via P. Bucci, Rende, Italy; <sup>3</sup>Lester & Sue Smith Breast Center, Baylor College of Medicine, Houston, TX

**Poster 28 - Abstract 149**

**ARF6 Dictates the Size and Quantity of Small and Intermediate-Large Extracellular Vesicles in Melanoma**

Emre Dal<sup>1,3</sup>, Yinshen Wee<sup>2,3</sup>, Emily C. Wilson<sup>2,3</sup>, Coulson P. Rich<sup>2,3</sup>, Aaron Rogers<sup>2,3</sup>, Joshua Tay<sup>2,3</sup>, Sheri L. Holmen<sup>3,4</sup>, Roger K. Wolff<sup>2,3</sup>, Allie H. Grossmann<sup>2,3</sup>.

<sup>1</sup>Department of Oncological Sciences, University of Utah, Salt Lake City, UT; <sup>2</sup>Department of Pathology, University of Utah, Salt Lake City, UT; <sup>3</sup>Huntsman Cancer Institute, Salt Lake City, UT; <sup>4</sup>Department of Surgery, University of Utah, Salt Lake City, UT

**Poster 29 - Abstract 150**

**The Small GTPase ADP-Ribosylation Factor 6 (ARF6) Alters the Intratumoral Metabolic Landscape**

Joshua K.H. Tay\*<sup>1,2</sup>, Kyle Dunlap\*<sup>3</sup>, Emily C. Wilson<sup>1,2</sup>, Coulson P. Rich<sup>1,2</sup>, Aaron Rogers<sup>1,2</sup>, Junhua Wang<sup>1,2</sup>, Sheri Holmen<sup>2,4</sup>, Roger K. Wolff<sup>1,2</sup>, Gregory S. Ducker<sup>3</sup>, Allie H. Grossmann<sup>1,2</sup>

<sup>1</sup>Department of Pathology, University of Utah, Salt Lake City, UT; <sup>2</sup>Huntsman Cancer Institute, Salt Lake City, UT; <sup>3</sup>Department of Biochemistry, University of Utah, Salt Lake City, UT; <sup>4</sup>Department of Surgery, University of Utah, Salt Lake City, UT

**Poster 30 - Abstract 151**

**Developing Animal Models to Study the Impacts of Bone Microenvironment on Cancer Bone Metastasis**

Yang Yang<sup>1,2</sup>, Chao Zhang<sup>1</sup>, Xiaoxiao Hao<sup>1</sup>, Pramod S. Gowda<sup>1</sup>, and Timothy N. Trotter<sup>1</sup>  
<sup>1</sup>Department of Pathology, University of Alabama at Birmingham, Birmingham, AL; <sup>2</sup>O'Neal Comprehensive Cancer Center, University of Alabama at Birmingham, Birmingham, AL

**Poster 31 - Abstract 152**

**The Use of the Three-Dimensional Spherical Invasion Assay to Measure the Invasive Activity of Human Cancer Cells**

Stephen D. Richbart, Emily G. Moles, Kathleen C. Brown, Adeoluwa A. Adeluola, and Piyali Dasgupta  
Department of Biomedical Sciences, Joan C. Edwards School of Medicine, Marshall University, Huntington, WV

**Poster 32 - Abstract 153**

**Overall Survival and Epithelial-Mesenchymal Transition (EMT) Genes Enrichment Analysis in Renal Papillary Carcinoma**

Waleed Ali<sup>1</sup> and André Kajdacsy-Balla<sup>2</sup>  
<sup>1</sup>Albert Einstein College of Medicine, The Bronx, NY; <sup>2</sup>University of Illinois at Chicago, Chicago, IL

**Poster 33 - Abstract 263**

**Impact of Intraductal Ablation of Mammary Epithelium by 70% Ethanol in MNU Rat Models for Breast Cancer Prevention**

Elizabeth G. Phelps<sup>1</sup>, Erin Zaluzec<sup>1,3</sup>, Mohamed Ashry<sup>1,2</sup>, Elizabeth Kenyon<sup>1,2</sup>, Katarzyna Kempinska<sup>1,2</sup>, Legend Kenny<sup>7</sup>, Katherine Powell<sup>1,2</sup>, Jeremy M.L. Hix<sup>2,5</sup>, Christiane Mallett<sup>2,5</sup>, Matti Kiupel<sup>6</sup>, Erik Shapiro<sup>2,7</sup>, and Lorenzo F. Sempere<sup>1,2</sup>

<sup>1</sup>Precision Health Program, Michigan State University, East Lansing, MI; <sup>2</sup>Department of Radiology, Michigan State University, East Lansing, MI; <sup>3</sup>Department of Pharmacology and Toxicology, Michigan State University, East Lansing, MI; <sup>4</sup>College of Osteopathic Medicine, East Lansing, MI; <sup>5</sup>IQ Advanced Molecular Imaging Facility, Michigan State University, East Lansing, MI; <sup>6</sup>Veterinary Diagnostic Laboratory, College of Veterinary Medicine, East Lansing, MI; <sup>7</sup>Department of Biomedical Engineering, Michigan State University, East Lansing, MI

**Cardiovascular Biology – Poster Session**

**Poster 34 - Abstract 039**

**Magnetic Extracellular Vesicle Delivery System for Matrix Synthesis for Abdominal Aortic Aneurysm Repair**

Ande X. Marini, Golnaz N. Tomaraei, Justin S. Weinbaum, Mostafa Bedewy, and David A. Vorp  
Department of Bioengineering, University of Pittsburgh, Pittsburgh, PA

**Poster 35 - Abstract 093**

**Cardiac Fibroblast-MHCII Contributes to Cardiac Pathophysiology in Doxorubicin-Induced Cardiomyopathy**

Maria Antonia Zambrano, Abraham L. Bayer, Kuljeet Kaur, and Pilar Alcaide  
Department of Immunology, Tufts University School of Medicine, Boston, MA

**Poster 36 - Abstract 112**

**Novel Role of Endothelial Cell Stimulator of Interferon Genes (STING) in Systolic Dysfunction and**

### **Adverse Cardiac Remodeling Induced by Cardiac Pressure Overload**

Erin Sanders<sup>1,2</sup>, Noah Wagner<sup>1,3</sup>, Abraham L. Bayer<sup>1,3</sup>, Sasha Smolgovsky<sup>1,3</sup>, Brandon Theall<sup>1,3</sup>, Mark Aronovitz<sup>1,4</sup>, Kuljeet Kaur<sup>1,3</sup>, Pilar Alcaide<sup>1,3</sup>

<sup>1</sup>Tufts Graduate School of Biomedical Sciences, Tufts University, Boston, MA; <sup>2</sup>Department of Genetics, Molecular, and Cellular Biology, Tufts University School of Medicine, Boston, MA; <sup>3</sup>Department of Immunology, Tufts University School of Medicine, Boston, MA; <sup>4</sup>Molecular Cardiology Research Institute, Tufts Medical Center, Tufts University School of Medicine, Boston, MA

### **Poster 37 - Abstract 154**

#### **Duration of SARS-CoV-2 mRNA Vaccine Persistence in Recently Vaccinated Patients and Factors Associated with Involvement of the Myocardium**

Aram J. Krauson, Faye Victoria C. Casimero, Zakir Siddiquee, and James R. Stone  
*Department of Pathology, Massachusetts General Hospital, Boston, MA*

### **Poster 38 - Abstract 155**

#### **Myocardial CD34<sup>+</sup> Stromal Cells/Telocytes and CD68<sup>+</sup> Macrophages Reveal a Dynamic Pattern of Interactions During Development of Post-Myocardial Infarction Scar**

Daniel Schneider and Eduard I. Dedkov  
*Department of Biomedical Sciences, Cooper Medical School of Rowan University, Camden, NJ*

### **Cardiovascular Biology and the Extracellular Matrix – Poster Session**

### **Poster 39 - Abstract 156**

#### **Collagen Fibril Structure, Surface Charge and Vascular Calcification**

Aratrika Pan, Naseem Story, Stevan Glisic, Michael Go, and Gunjan Agarwal  
*Department of Mechanical and Aerospace Engineering, The Ohio State University College of Engineering, Columbus, OH*

### **Poster 40 - Abstract 157**

#### **Type XXVIII Collagen Formation as a Prognostic Marker of Mortality Risk in Patients with Atherosclerosis**

Elisavet Angeli<sup>1</sup>, Annelie Shami<sup>2</sup>, Chrysostomi Gialeli<sup>2</sup>, Morten Kardal<sup>1</sup>, Andreas Edsfeldt<sup>3</sup>, Federica Genovese<sup>1</sup>, and Isabel Gonçalves<sup>3</sup>

<sup>1</sup>Nordic Bioscience A/S, Herlev, Denmark; <sup>2</sup>Clinical Sciences Malmö, Lund University, Sweden; <sup>3</sup>Clinical Sciences Malmö, Lund University and Cardiology, Skåne University Hospital, Sweden

### **Poster 41 - Abstract 158**

#### **Long-Read Transcriptomics Reveals Tissue- and Age-Specific Differences in Elastin Isoform Expression**

Likitha Nimmagadda<sup>1</sup>, Kit Man Tsang<sup>1</sup>, Natalia Kim<sup>1</sup>, Neelam Redekar<sup>2</sup>, Russell H. Knutsen<sup>1</sup>, Teresa R. Luperchio<sup>1</sup>, and Beth A. Kozel<sup>1</sup>

<sup>1</sup>Laboratory of Vascular and Matrix Genetics, National Heart, Lung, and Blood Institute, National Institutes of Health, Bethesda, MD; <sup>2</sup>Integrated Data Sciences Section, Research Technologies Branch, National Institute of Allergy and Infectious Diseases, NIH, Bethesda, MD

### **Poster 42 - Abstract 159**

#### **Fibulin-4 and LTBP-4 Interact with Syndecans to Regulate Elastogenesis**

Hana Hakami<sup>1</sup>, Neha Dinesh<sup>1</sup>, Valentin Nelea<sup>1,2</sup>, Natalie Lamarche Vane<sup>1</sup>, Sylvie Ricard Blum<sup>3</sup>, and Dieter P. Reinhardt<sup>1,2</sup>

<sup>1</sup>Faculty of Medicine and Health Sciences, Department of Anatomy and Cell Biology, McGill University, Montreal, Canada; <sup>2</sup>Faculty of Faculty of Dental Medicine and Oral Health Sciences, McGill University, Montreal, Canada; <sup>3</sup>Université de Lyon 1, Institute of Molecular and Supramolecular Chemistry and Biochemistry, Villeurbanne, France

### **Poster 43 - Abstract 160**

#### **Inhibition of the Histone Methyltransferase EZH2 with GSK126 Induces Vascular Stiffness in Mouse Aorta and Human Aortic Smooth Muscle Cells**

Jaime Ibarrola<sup>1</sup>, Rachel Xiang<sup>1</sup>, Qing Lu<sup>1</sup>, Zhe Sun<sup>2</sup>, Michael A Hill<sup>2</sup>, and Iris Z. Jaffe<sup>1</sup>

<sup>1</sup>Molecular Cardiology Research Institute, Tufts Medical Center, Boston, MA; <sup>2</sup>Dalton Cardiovascular Research Center, Department of Medical Pharmacology and Physiology, University of Missouri, Columbia, MO

### **Poster 44 - Abstract 161**

#### **Investigating the Impact of Near Complete Estrogen Deprivation on Cardiac Remodeling in Preclinical Models**

Joshua D. Abrams, Valerie Payne, Adam Wilson, Alexandra Thomas, and Katherine L. Cook  
*Department of Surgery, Wake Forest University School of Medicine, Winston-Salem, NC*

## Collagens – Poster Session

### Poster 45 - Abstract 016

#### Collagen Distribution in Mouse Embryo Abdominal Wall

Kentaro Ikemura, Gabriel Opoku, Ren Takashita, Saeko Hirabayashi, Farhana Hasib, Nodoka Iguchi, Ikumi Sato, Eri Katsuyama, Shogo Watanabe, and Satoshi Hirohata  
*Department of Medical Technology, Graduate School of Health Science, Okayama University, Okayama, Japan*

### Poster 46 - Abstract 024

#### Investigating the Regulatory Impact of Collagen Type XI N-terminus Domain (NTD) Variants on Collagen Self-assembly Kinetics and Insights on the Molecular Interactions

Abu Sayeed Chowdhury, Stephanie Tuft, and Julia T. Oxford  
*Biomolecular Sciences, Boise State University, Boise, ID*

### Poster 47 - Abstract 056

#### The Role of Microvilli in the Organization of Apical Extracellular Matrix

Ava Niazi, Ju Ang Kim, Joosang Park, Dong-Kyu Kim, Di Lu, and Sungjin Park  
*Department of Neurobiology, University of Utah, Salt Lake City, UT*

### Poster 48 - Abstract 058

#### A Bidirectional Cross-talk Between the Adherens Junction-associated RNAi Machinery and the Extracellular Matrix Regulates Colon Epithelial Cell Behavior

Amanda Daulagala<sup>1</sup>, Metin Cetin<sup>2</sup>, Douglas W. Jimenez<sup>1</sup>, Mary Catherine Bridges<sup>1</sup>, Joyce Nair-Menon<sup>1</sup>, Amy Bradshaw<sup>3</sup>, Jeffrey Jones<sup>4</sup>, Ozgur Sahin<sup>2</sup>, and Antonis Kourtidis<sup>1</sup>  
<sup>1</sup>*Department of Regenerative Medicine and Cell Biology, Medical University South Carolina, Charleston, SC;* <sup>2</sup>*Department of Biochemistry and Molecular Biology, Medical University South Carolina, Charleston, SC;* <sup>3</sup>*Division of Cardiology, College of Medicine, Medical University South Carolina, Charleston, SC;* <sup>4</sup>*Department of Surgery, College of Medicine, Medical University South Carolina, Charleston, SC*

### Poster 49 - Abstract 067

#### Temporally-Restricted Patterns of Endothelial Cell Collagen IV Expression Determined With a Novel Knockin Col4a1-GFP Mouse Line

Nathaniel L. Lartey, Martijn van der Ent, Roxann Alonzo, and Philip D. King,  
*Department of Microbiology and Immunology, University of Michigan, Ann Arbor, MI*

### Poster 50 - Abstract 162

#### Molecular Magnetic Resonance Imaging of Prostate Cancer with a Collagen-specific Probe

Avan Kader<sup>1,2,3</sup>, Jan O. Kaufmann<sup>1,2,3</sup>, Dilyana B. Mangarova<sup>1,3</sup>, Jana Moeckel<sup>1</sup>, Lisa C. Adams<sup>1</sup>, Julia Brangsch<sup>1,3</sup>, Jennifer Lilly Heyl<sup>1</sup>, Jing Zhao<sup>1</sup>, Christine Verlemann<sup>4</sup>, Uwe Karst<sup>4</sup>, Federico Colletini<sup>1,5</sup>, Timo A. Auer<sup>1,5</sup>, Bernd Hamm<sup>1</sup>, and Marcus R. Makowski<sup>1,3,6</sup>  
<sup>1</sup>*Charité – Universitätsmedizin Berlin, corporate member of Freie Universität Berlin, Humboldt-Universität zu Berlin, and Berlin Institute of Health, Berlin, Germany;* <sup>2</sup>*Department of Biology, Chemistry and Pharmacy, Institute of Biology, Freie Universität Berlin, Berlin, Germany;* <sup>3</sup>*Technical University of Munich, Department of Diagnostic and Interventional Radiology, Munich, Germany;* <sup>4</sup>*Institute of Inorganic and Analytical Chemistry, University of Münster, Münster, Germany;* <sup>5</sup>*Berlin Institute of Health, Berlin, Germany;* <sup>6</sup>*King's College London, School of Biomedical Engineering and Imaging Sciences, United Kingdom, St Thomas' Hospital Westminster Bridge Road, London, United Kingdom*

### Poster 51 - Abstract 163

#### Collagen Optical Characteristics Vary Between Low Stage and Muscle-invasive Bladder Cancers

Soheila Borhani<sup>1</sup>, Virgilia Macias<sup>2</sup>, Waleed Ali<sup>3</sup>, Michael Abern<sup>4</sup>, Daniel Moreira<sup>1</sup>, Andre Kajdacsy-Balla<sup>1</sup>  
<sup>1</sup>*School of Biomedical Informatics, University of Texas Health Science Center, Houston, TX;* <sup>2</sup>*Department of Pathology, University of Illinois at Chicago, Chicago, IL;* <sup>3</sup>*Albert Einstein College of Medicine, Bronx, NY;* <sup>4</sup>*Department of Urology, Duke University, Durham, NC*

### Poster 52 - Abstract 164

#### Long-term Exposure to Organic Dust Promotes Inflammation, Oxidative Stress and Collagen Deposition in the Airways

Jenora Waterman, Simone Smith, Rohit Ranabhat, and Kristen Foust  
*Department of Biology, North Carolina Agricultural and Technical State University, Greensboro, NC*

**Poster 53 - Abstract 165**

**Insights into the Genetic and Molecular Mechanisms of Hypermobile Ehlers Danlos Syndrome**

Cortney Gensemer<sup>1</sup>, Taylor Petrucci, Tyler Beck, Lilong Guo, Jordan Morningstar, Rachel Biggs<sup>1</sup>, Victoria Daylor, Kristina Stayer, Erika Bistran, Joe Delaney, Daniel P. Judge, Peng Chen, Hai Yao, Jan Guz, Alexander Awgulewitsch, Rupak Mukherjee, Robert Price, Mark Lavallee, Sunil Patel, Takiy Berrandou, Susan A. Slaughaupt, David Milan, Nabila Bouatia-Naji, and Russell A. Norris

*Department of Regenerative Medicine and Cell Biology, Medical University of South Carolina, Charleston, SC*

**Poster 54 - Abstract 166**

**Impairment in Processing of Collagen I in a Novel Murine Model of Dermatosporax Ehlrs Danlos Syndrome**

Madalyn Osterhaus, Taylor Petrucci, Cortney Gensemer, Erika Bistran, Jillian Schnaudigel, Katy Byerly, Jordan Morningstar, Molly Griggs, Gyda Beeson, Victoria Daylor, Lilong Guo, Fu-Lei Tang, and Russell Norris

*Department of Regenerative Medicine and Cell Biology, Medical University of South Carolina, Charleston, SC*

**Poster 55 - Abstract 167**

**Interactions Between ECM Proteins Reveal Insights into the Mechanism Behind Hypermobile Ehlers-Danlos Syndrome**

Taylor Petrucci, Lilong Guo, Cortney Gensemer, Jordan E. Morningstar, Kathryn Byerly, Erika Bistran, Emily Fleck, Tyler Beck, Victoria Daylor, Russell Norris

*Department of Regenerative Medicine and Cell Biology, Medical University of South Carolina, Charleston, SC*

**Poster 56 - Abstract 168**

**Evaluation of Fibrosis Phenotypes with Novel Digital Pathology Methods in the NOD/ShiLtj Mouse Model of Sjögren's Disease Following Treatment with Nintedanib**

Jennifer M. Morrissey<sup>1,2</sup>, Li Chen<sup>3</sup>, Nathan Aist<sup>3</sup>, Deirdre A. Nelson<sup>1</sup>, Mathieu Petitjean<sup>3</sup>, and Melinda Larsen<sup>1,2</sup>

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**Poster 57 - Abstract 169**

**Dissecting Collagen Type I Regulation by the RNA-Binding Protein Larp6**

Eric L. Baggs<sup>1</sup>, Steve Broyles<sup>1</sup>, Cayla Meredith<sup>1</sup>, Clariza Arteaga<sup>1</sup>, Karen A. Lewis<sup>2</sup>, and Lisa R. Warner<sup>1</sup>

*<sup>1</sup>Department of Chemistry and Biochemistry, Boise State University, Boise, ID; <sup>2</sup>Department of Chemistry and Biochemistry, Texas State University, San Marcos, TX*

**Poster 58 - Abstract 170**

**MUSC Ehlers Danlos Syndrome Biorepository: A Gateway to Understanding Genetic Connective Tissue Diseases**

Russell Norris, Fu-Lei Tang, Jan Guz, Kristi Helke, Alexander Awgulewitsch, Taylor Petrucci, Lilong Guo, and Cortney Gensemer

*Department of Regenerative Medicine and Cell Biology, Medical University of South Carolina, Charleston, SC*

**Poster 59 - Abstract 171**

**LaRP-6 Post Transcriptional Regulation of Fibrosis**

Clariza Arteaga, Steve Broyles, Lisa Rose Warner, and Eric L. Baggs

*Biomolecular Program, Boise State University, Boise, ID*

**Poster 60 - Abstract 172**

**Comparison of Vitreous Collagen Fiber Network between Humans, Marmosets, Pigs, and Rabbits**

Eileen S. Hwang and Denise J. Morgan

*Department of Ophthalmology and Visual Sciences, University of Utah, Salt Lake City, UT*

**Poster 61 - Abstract 173**

**Effect of the Ratio of Type I to Type III Collagen on Cell Behavior in Three-dimensional Culture**

Kazumasa Fujita, Yuki Kumazawa, Yusuke Murasawa, and Kazunori Mizuno

*Research Institute of Biomatrix, Nippi Inc., Ibaraki, Japan*

**Extracellular Matrix Biology – Poster Session**

**Poster 62 - Abstract 026**

**Multi-omics Characterization of Matrisome Dynamics During IPF Pathogenesis**

Sarah Lloyd<sup>1</sup>, Xue Wang<sup>2</sup>, Liang Jin<sup>2</sup>, Fei Wang<sup>2</sup>, Kenneth Ruterbories<sup>1</sup>, Cassandre Coles<sup>1</sup>, Lisa Hazelwood<sup>1</sup>, Qin Ji<sup>1</sup>, Yu Tian<sup>2</sup>, and Yupeng He<sup>1</sup>

<sup>1</sup>AbbVie Inc., North Chicago, IL; <sup>2</sup>AbbVie Bioresearch Center, Worcester, MA

**Poster 63 - Abstract 027**

**MatrisomeDB: An ECM Proteomics Tool to Facilitate Biomarker Discovery**

Nandini Kapoor<sup>1</sup>, James Considine<sup>1</sup>, Clarissa Gomez<sup>1</sup>, Xinhao Shao<sup>1</sup>, Yu Gao<sup>2,3</sup>, and Alexandra Naba<sup>1,3</sup>

<sup>1</sup>Department of Physiology and Biophysics, University of Illinois Chicago, Chicago, IL; <sup>2</sup>Department of Pharmaceutical Science, University of Illinois Chicago, Chicago, IL; <sup>3</sup>University of Illinois Cancer Center, Chicago, IL

**Poster 64 - Abstract 034**

**Verican Mediates the Crosstalk between Keratinocytes and Dermal Papilla Cells in Hair Follicles**

Xi Chen and Jiang Chen

Departments of Dermatology, Stony Brook University, Stony Brook, NY

**Poster 65 - Abstract 063**

**MFAP4 Forms Octamers Required for Functional Interactions with Elastogenic Proteins**

Michael R. Wozny<sup>1,\*</sup>, Valentin Nelea<sup>1,2,\*</sup>, Mike Strauss<sup>1,#</sup>, and Dieter P. Reinhardt<sup>1,2,#</sup>

<sup>1</sup>Faculty of Medicine and Health Sciences, McGill University, Montreal, QC, Canada; <sup>2</sup>Faculty of Dentistry and Oral Health Sciences, McGill University, Montreal, QC, Canada

**Poster 66 - Abstract 064**

**Multiple Cell Types Influence Extracellular Matrix Dynamics During Planarian Regeneration**

Ekasit K. Sonpho<sup>1</sup>, Carlos Guerrero-Hernández<sup>1</sup>, Charles A. S. Banks<sup>1</sup>, Eric J. Ross<sup>1,2</sup>, Carolyn Brewster<sup>1</sup>, Sean McKinney<sup>1</sup>, Frederick G. Mann Jr.<sup>1,2</sup>, Stephanie Nowotarski<sup>1</sup>, Mol Mir<sup>1</sup>, Melainia McClain<sup>1</sup>, Laurence Florens<sup>1</sup>, and Alejandro Sánchez Alvarado<sup>1,2</sup>

<sup>1</sup>Stowers Institute for Medical Research, Kansas City, MO; <sup>2</sup>Howard Hughes Medical Institute, Kansas City, MO

**Poster 67 - Abstract 065**

**Delineating the Timeline of SNED1 Fibrillogenesis and Assembly in the Extracellular Matrix**

Leanna Leverton<sup>1</sup>, Dharma Pally<sup>1</sup>, and Alexandra Naba<sup>1,2</sup>

<sup>1</sup>Department of Physiology and Biophysics, University of Illinois at Chicago, Chicago, IL; <sup>2</sup>University of Illinois Cancer Center, Chicago, IL

**Poster 68 - Abstract 066**

**Fibronectin-mediated Physiological and Pathological Mechanisms in Skeletal Development**

Neha Dinesh<sup>1</sup>, Justine Rousseau<sup>2</sup>, Philippe Campeau<sup>#2</sup>, and Dieter P. Reinhardt<sup>1,3</sup>

<sup>1</sup>Faculty of Medicine and Health Sciences, McGill University, Montreal, QC, Canada; <sup>2</sup>CHU Sainte-Justine Research Center, Montreal, QC, Canada; <sup>3</sup>Faculty of Dental Medicine and Oral Health Sciences, McGill University, Montreal, QC, Canada.

**Poster 69 - Abstract 091**

**Treating Vocal Fold Scarring: Leveraging Decorin as a Regulator of Vocal Fold Extracellular Matrix Structure in Development and Repair**

Ryan M. Friedman<sup>1,2</sup>, Elizabeth A. Brown<sup>1,2</sup>, Arielle S. Brueninger<sup>1</sup>, Matthew R. Aronson<sup>1,2</sup>, Karen B. Zur<sup>2</sup>, and Riccardo Gottardi<sup>1,2,3</sup>

<sup>1</sup>Department of Bioengineering, School of Engineering and Applied Sciences, University of Pennsylvania, Philadelphia, PA; <sup>2</sup>Department of Surgery, Division of Otolaryngology, Children's Hospital of Philadelphia, Philadelphia, PA; <sup>3</sup>Department of Pediatrics, Division of Pulmonary Medicine, University of Pennsylvania, Philadelphia, PA

**Poster 70 - Abstract 092**

**Migrational Decision Making in Response to Multiple Directional Extracellular Matrix Cues**

Ian Schneider, Azarnoosh Foroozandehfar, Fred Namanda, Mary Thatcher, and Savanna Busch  
Department of Chemical and Biological Engineering, Iowa State University, Ames, IA

**Poster 71 - Abstract 102**

**Effects of Collagen V on Fibril Morphology and Fibroblast Adhesion and Contractility**

Shaina P. Royer and Sangyoon J. Han  
Department of Biomedical Engineering, Michigan Technological University, Houghton, MI

**Poster 73 - Abstract 106**

**The Development of the Extracellular Matrix of the Brain**

Igal Sterin, Ava Niazi, Jennifer Kim, Joosang Park, and Sungjin Park  
Department of Neurobiology, University of Utah School of Medicine, Salt Lake City, UT

**Poster 74 - Abstract 174**

**Piezo Initiates Transient Production of Collagen IV to Repair Damaged Basement Membranes**

Aubrie M. Stricker and Andrea Page-McGraw

*Department of Cell and Developmental Biology,  
Vanderbilt University School of Medicine, Nashville,  
TN*

**Poster 75 - Abstract 175**

**Heterogeneous Tendon Composition Dictates Location-dependent Material Properties**

Hannah M. Larson, Olivia J. Ward, and Sarah Calve  
*Department of Mechanical Engineering, College of  
Engineering and Applied Science, University of  
Colorado Boulder, Boulder, CO*

**Poster 76 - Abstract 176**

**A Novel Mutation in the Hybrid1 Domain of the Fibrillin 1 Gene Causes an Abnormal Skin Phenotype**

ASM Sakhawat Hossain<sup>1</sup>, Maria Thea Rane Dela Cruz<sup>2</sup>, Koichiro Uto<sup>4</sup>, Eri Motoyama<sup>3</sup>, Sumio Ohtsuki<sup>4</sup>, Keiichi Asano<sup>3</sup>, Kenichi Kimura<sup>3</sup>, Sachiko Kanki<sup>5</sup>, Erna Raja<sup>3</sup>, and Hiromi Yanagisawa<sup>3</sup>

<sup>1</sup>Graduate School of Comprehensive Human Sciences, Tsukuba Advanced Research Alliance (TARA), University of Tsukuba, Japan; <sup>2</sup>School of Integrative and Global Major, Tsukuba Advanced Research Alliance (TARA), University of Tsukuba, Japan; <sup>3</sup>Life Science Center for Survival Dynamics, Tsukuba Advanced Research Alliance (TARA), University of Tsukuba, Japan; <sup>4</sup>National Institute for Material Science, Tsukuba, Japan, Department of Pharmaceutical Microbiology, Kumamoto University, Japan; <sup>5</sup>Osaka Medical and Pharmaceutical University, Osaka, Japan

**Poster 77 - Abstract 177**

**The Selective Removal of Gram-negative Bacterial Communities Prevents Subglottic Stenosis in a Mouse Model**

Matthew R. Aronson<sup>1</sup>, Ryan M. Friedman<sup>1</sup>, Amrita Mehta<sup>1</sup>, Kendra S. McDavid<sup>2</sup>, Ryan C. Borek<sup>2</sup>, Connor N. Devine<sup>2</sup>, Terri Giordano<sup>2</sup>, Ian N. Jacobs<sup>2</sup>, and Riccardo Gottardi<sup>2</sup>

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**Poster 78 - Abstract 178**

**A Novel Role for the PI3 Kinase Delta Isoform in Normal Hepatocyte Proliferation**

Wendy M. Mars, Nicole J. Martucci, John Stoops, William Bowen, Anne Orr, Mary-Claire Cotner, Bharat Bhushan, and George K. Michalopoulos  
*Department of Pathology, University of Pittsburgh Medical School, Pittsburgh, PA*

**Poster 79 - Abstract 179**

**The Matrigel Duplex Assay: A Sensitive Method to Measure Retinal Angiogenesis**

Amanda Sugrue, Kathleen C. Brown, Aaron M. Dom, Jamie K. Lau, and Piyali Dasgupta  
*Department of Biomedical Sciences, Joan C. Edwards School of Medicine, Marshall University, Huntington, WV*

**Poster 80 - Abstract 180**

**Calreticulin Electrospun into Biomimetic Extracellular Matrix Nanofibers Functionally Synergize for Cellular Responses that Enable Tissue Regeneration**

Sarita Mishra<sup>1</sup>, Mary E. Stack<sup>2</sup>, Haoyu Wang<sup>2</sup>, Matangi Parimala Chelvi Ratnamani<sup>2</sup>, Hongjum Wang<sup>2</sup>, and Leslie I. Gold<sup>1</sup>

<sup>1</sup>Departments of Medicine and Pathology, Division of Precision Medicine, New York University School of Medicine, New York, NY; <sup>2</sup>Department of Biomedical Engineering and Innovation Health, Stevens Institute of Technology, Hoboken, NJ

**Poster 81 - Abstract 181**

**Anisotropic Force Transmission within Aligned Collagen Networks**

Ian Schneider, Gopal Niraula, Azarnoosh Foroozandehfar, and Fred Namanda  
*Chemical and Biological Engineering, Iowa State University, Ames, IA*

**Poster 82 - Abstract 182**

**Quantification of C-pp Processing and Collagen Secretion by Visualized Type I Procollagen I $\alpha$ 1**

Koji Moriya and Toshiaki Tanaka  
*Department of Life Science and Technology, Tokyo Institute of Technology, Yokohama, Japan*

**Poster 83 - Abstract 183**

**Collagen XVIII Long Form Might be a New Type of Membrane Bound Collagen**

Tomonori Ueno and Kazunori Mizuno  
*Nippi Research Institute of Biomatrix, Ibaraki, Japan*

**Poster 84 - Abstract 184**

**Development of Human Decellularized Extracellular Matrix Hydrogel Biomaterial for Applications in Tissue Engineering for Investigating Pulmonary Fibrosis**

Aubrianna Saxton,<sup>1</sup> Ashley Chang,<sup>1</sup> Jon Valdoz,<sup>1</sup> Jhon Sia,<sup>1</sup> Collin Cribbs,<sup>1</sup> Nick Franks,<sup>1</sup> Seth Garfield,<sup>1</sup> Dawson Downs,<sup>1</sup> Hailey Hepworth,<sup>1</sup> Kyle Nielson,<sup>1</sup> A.

Sampath Narayan,<sup>2</sup> Mary B. Scholand,<sup>3</sup> Ganesh Raghu,<sup>4</sup> and Pam Van Ry<sup>1</sup>

<sup>1</sup>Chemistry and Biochemistry Department, Brigham Young University, Provo, UT; <sup>2</sup>Center for Interstitial Lung Disease, University of Washington, Seattle, WA; <sup>3</sup>University of Utah, Pulmonary Fibrosis Center, Salt Lake City, UT; <sup>4</sup>University of Washington, Seattle, WA

#### Poster 85 - Abstract 185

##### Novel Organotypic Lung Triculture Method Paving the Way to Personalized Medicine

Pam M. Van Ry<sup>1</sup>, Jonard C. Valdoz<sup>1</sup>, Connor Knight<sup>1</sup>, P. Daniel Poulson<sup>1</sup>, Seth R. Garfield<sup>1</sup>, Benjamin C. Johnson<sup>1</sup>, Brandon M. Hemeyer<sup>1</sup>, Miranda T. Sudo<sup>1</sup>, Jordan A. Saunooke<sup>1</sup>, Braden C. Kartchner<sup>1</sup>, Aubrianna Saxton<sup>1</sup>, Ashley Chang,<sup>1</sup> Mary L. Vallecillo-Zuniga<sup>1</sup>, Matheus Santos<sup>1</sup>, Brandon Chamberlain<sup>1</sup>, Haeun Gim,<sup>1</sup> Mary B. Scholand<sup>5</sup>, Kenneth A. Christensen<sup>1</sup>, Greg P. Nordin<sup>2</sup>, A. Sampath Narayanan<sup>4</sup>, Anindya Roy<sup>6</sup>, Lance J. Stewart<sup>6</sup>, David Baker<sup>6,7</sup>, and Ganesh Raghu<sup>3</sup>

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#### Poster 86 - Abstract 186

##### Elucidating Ovarian Cancer Extracellular Matrix Spatiotemporal Dynamics Linked to Platinum Chemoresistance

Kristin Calar<sup>1</sup>, and Pilar de la Puente<sup>1,2</sup>

<sup>1</sup>Cancer Biology and Immunotherapies Group, Sanford Research, Sioux Falls, SD; <sup>2</sup>Department of Obstetrics and Gynecology, University of South Dakota Sanford School of Medicine, Sioux Falls, SD

#### Poster 87 - Abstract 187

##### A Novel Reagent for Probing Fibronectin Matrix Assembly

Henry Resnikoff, Emily Saulino, Aaron Hamlin, and Jean Schwarzbauer  
Department of Molecular Biology, Princeton University, Princeton, NJ

#### Poster 88 - Abstract 188

##### Versican Distribution and Its Cleavage in Adamts1 Knockout Mouse Embryos

Gabriel Opoku<sup>1</sup>, Kentaro Ikemura<sup>1</sup>, Omer Faruk Hatipoglu<sup>2</sup>, Ren Takashita<sup>1</sup>, Saeko Hirabayashi<sup>1</sup>, Farhana Hasib<sup>1</sup>, Iguchi Nodoka<sup>1</sup>, Ikumi Sato<sup>1</sup>, Eri katsuyama<sup>1</sup>, and Satoshi Hirohata<sup>1</sup>

<sup>1</sup>Department of Medical Technology, Graduate School of Health Sciences, Okayama University, Okayama, Japan; <sup>2</sup>Department of Pharmacology, Faculty of Medicine, Kindai University, Osaka, Japan

#### Poster 89 - Abstract 189

##### Fibulin-5 is Essential for Elastogenesis and Preserved Vascular Function in the Mesentery

Michelle Lin<sup>1</sup>, Robyn A. Roth<sup>1</sup>, Hiromi Yanagisawa<sup>2</sup>, and Carmen M. Halabi<sup>1</sup>

<sup>1</sup>Department of Pediatrics, Division of Nephrology, Washington University School of Medicine, Saint Louis, MO; <sup>2</sup>Life Science Center for Survival Dynamics, Tsukuba Advanced Research Alliance, University of Tsukuba, Ibaraki, Japan

#### Poster 90 - Abstract 190

##### LOXL1 Deficiency Reduces TGFβ1-induced Fibrosis in Trabecular Meshwork Cells/Tissues

Maria Fernanda Suarez<sup>1</sup>, Heather M. Schmitt<sup>1,2</sup>, Megan Kuhn<sup>1</sup>, Kristyn Hake<sup>1</sup>, Tara Weisz<sup>1</sup>, Edward Flynn III<sup>1</sup>, Katy C. Liu<sup>1</sup>, Michael A. Hauser<sup>1</sup>, and W. Daniel Stamer<sup>1</sup>

<sup>1</sup>Department of Ophthalmology, Duke University School of Medicine, Durham, NC; <sup>2</sup>Perfuse Therapeutics Inc., Durham, NC

#### Poster 91 - Abstract 191

##### The *Tripteryium wilfordii* Derivative Celastrol, a YAP Inhibitor, has Anti-fibrotic Effects in Systemic Sclerosis by Suppressing Activation of Reticular Fibroblasts

Pratyusha Chitturi<sup>1</sup>, Xu Shi-wen<sup>2</sup>, Bahja Ahmed Abdi<sup>2</sup>, Sarthak Sinha<sup>3</sup>, Jeff Biernaskie<sup>3</sup>, Richard J. Stratton<sup>2</sup>, and Andrew Leask<sup>1</sup>

<sup>1</sup>College of Dentistry, University of Saskatchewan, Saskatoon, SK, Canada; <sup>2</sup>UCL Division of Medicine, London, UK; <sup>3</sup>Faculty of Veterinary Medicine, University of Calgary, Calgary, AB, Canada

#### Poster 93 - Abstract 193

##### Leukemia Inhibitory Factor (LIF): A Matrisome-Associated Secreted Factor Inducing Tumorigenesis and Chemoresistance in High Grade Serous Ovarian Cancer

Megan Jorgensen<sup>1,2</sup>, Kristin Calar<sup>1</sup>, Maria Bell<sup>3</sup>, and Pilar de la Puente<sup>1,3,4#</sup>

<sup>1</sup>*Cancer Biology and Immunotherapies Group, Sanford Research, Sioux Falls, SD;* <sup>2</sup>*MD/PhD Program, University of South Dakota Sanford School of Medicine, Sioux Falls, SD;* <sup>3</sup>*Department of Obstetrics/Gynecology, University of South Dakota Sanford School of Medicine, Sioux Falls, SD;* <sup>4</sup>*Department of Surgery, University of South Dakota Sanford School of Medicine, Sioux Falls, SD*

**Poster 94 - Abstract 194**

**Role of Integrin Alpha 4 and Alpha 9 in the Development of Elevated IOP and Trabecular Meshwork Damage**

Tania Sharmin and Colleen M. McDowell  
*Department of Ophthalmology and Visual Sciences, University of Wisconsin - Madison, Madison, WI*

**Poster 95 - Abstract 195**

**Chromosomal Translocation Converts a Laminin Gene, LAMC2, Into an Oncogene in Ovarian Carcinoma**

Naohiko Koshikawa, Ryo Kaneko, and Nobuaki Funahashi  
*School of Life Science and Technology, Tokyo Institute of Technology, Yokohama, Japan*

**Poster 96 - Abstract 196**

**A Novel Interaction of CD47 with Filamin A Identified Using Single Vesicle Imaging and Mass Spectrometry Analyses of Extracellular Vesicles released from T Lymphoblast and Prostate Carcinoma Cells**

Sukhbir Kaur<sup>1</sup>, Lisa M. Jenkins<sup>2</sup>, and David D. Roberts<sup>1</sup>  
<sup>1</sup>*Laboratory of Pathology, Center for Cancer Research, National Cancer Institute, National Institutes of Health, Bethesda, MD;* <sup>2</sup>*Laboratory of Cell Biology, Center for Cancer Research, National Cancer Institute, National Institutes of Health, Bethesda, MD*

**Poster 97 - Abstract 197**

**Toll-Like Receptor 4 Dependent Optic Nerve Head Damage**

Collen M. McDowell and Emma K. Geiduschek  
*Department of Ophthalmology and Visual Sciences, University of Wisconsin - Madison, Madison, WI*

**Poster 98 - Abstract 198**

**Regulation of Macrophage Gene Expression by Matrix Components**

Ivy S. McDermott, Ksenija Bernau, Angie Oler, Parker Esswein, Carson Gehl, Kelsey Holbert, Bianca

Tomasini-Johansson, Paul Campagnola, Glen Kwon, and Nathan Sandbo

*Department of Medicine, University of Wisconsin-Madison, Madison, WI*

**Poster 99 - Abstract 199**

**Shock Drives a STAT3 and JunB-mediated Coordinated Transcriptional and DNA Methylation Response in the Endothelium**

Ramon Bossardi Ramos<sup>1</sup>, Nina Martino<sup>1</sup>, Shuhan Lu<sup>2</sup>, Iria Di John Portela<sup>1</sup>, Peter A. Vincent<sup>1</sup>, and Alejandro P. Adam<sup>1</sup>

<sup>1</sup>*Department of Molecular and Cellular Physiology, Albany Medical College, Albany, NY;* <sup>2</sup>*Department of Molecular and Cellular Physiology, Albany Medical Center, Albany, NY*

**Poster 100 - Abstract 200**

**Matrix Proteoglycans Regulate CD4<sup>+</sup> T cell Functions in Secondary Lymphoid Organs**

George Maiti and Shukti Chakravarti  
*Department of Ophthalmology, NYU Grossman School of Medicine, New York, NY*

**Poster 101 - Abstract 201**

**Identification of ADAMTS9 and ADAMTS20 Basement Membrane Substrates using N-Terminomics**

Sumit Bhutada and Suneel S. Apte  
*Department of Biomedical Engineering, Cleveland Clinic – Lerner Research Institute, Cleveland, OH*

**Poster 102 - Abstract 202**

**Expansion of Extracellular Proximity Labeling Technique to Novel Matrisome Targets and Culture Conditions**

Joshua Rich, Sasha Coates-Park, Sadeechya Gurung, Yueqin Liu, Anshika Govil, Sukhbir Kaur, David Roberts, William Stetler-Stevenson, and David Peeney

*Extracellular Matrix Pathology Section, Laboratory of Pathology, National Cancer Institute, National Institutes of Health, Bethesda, Maryland*

**Poster 103 - Abstract 203**

**The Matrisome Project: A One-Stop Shop for ECM-Omic Research**

Ikram Isa<sup>1</sup>, James Considine<sup>1</sup>, Adriana Duraki<sup>1</sup>, Alexandra Naba<sup>1,2</sup>

<sup>1</sup>*Department of Physiology and Biophysics, University of Illinois Chicago, Chicago, IL;* <sup>2</sup>*University of Illinois Cancer Center, Chicago, IL*

## Fibroblasts – Poster Session

### Poster 104 - Abstract 041

#### **A Regulatory Role for Macrophages in Fibroblast Circadian Rhythm and Collagen-I Deposition**

Katherine Lowles, Marie Cutiongco, Qing Jun Meng, Tracy Hussell, Karl Kadler, and Joan Chang  
*Division of Molecular and Cellular Function, University of Manchester, Manchester, UK*

### Poster 105 - Abstract 204

#### **Human Upper-Airway Fibroblasts from Patients with Subglottic Stenosis Retain Transcriptional Memory of Fibrotic Niche**

Daniel D. Ghaderi<sup>1</sup>, Matthew R. Aronson<sup>1</sup>, Ryan M. Friedman<sup>1</sup>, Ryan C. Borek<sup>2</sup>, Connor M. Devine<sup>2</sup>, Terri Giordano<sup>2</sup>, Ian N. Jacobs<sup>2</sup>, and Riccardo Gottardi<sup>2</sup>  
<sup>1</sup>*Department of Bioengineering, University of Pennsylvania, Philadelphia, PA;* <sup>2</sup>*Division of Otolaryngology, Department of Surgery, Children's Hospital of Philadelphia, PA*

### Poster 106 - Abstract 205

#### **Doxorubicin-Induced Modulation of TGF- $\beta$ Signaling Cascade in Mouse Fibroblasts: Insights into Cardiotoxicity Mechanisms**

Conner Patricelli<sup>1</sup>, Parker Lehmann<sup>2</sup>, Shin Pu<sup>1</sup>, and Julia Thom Oxford<sup>1</sup>  
<sup>1</sup>*Biomolecular Sciences, Boise State University, Boise, ID;* <sup>2</sup>*Idaho College of Osteopathic Medicine, Meridian, ID*

### Poster 107 - Abstract 206

#### **Transcription Factor HOXA5 is Mechanically Regulated in Pulmonary Fibroblasts via Integrin $\alpha$ V Signaling**

Andrew E. Miller<sup>1</sup>, Ping Hu<sup>1</sup>, Grace C. Bingham<sup>1</sup>, Deneen M. Wellik<sup>2</sup>, Mete Civelek<sup>1</sup>, Thomas H. Barker<sup>1</sup>  
<sup>1</sup>*Biomedical Engineering, University of Virginia, Charlottesville, VA;* <sup>2</sup>*Department of Cell and Regenerative Biology, University of Wisconsin-Madison, Madison, WI*

### Poster 108 - Abstract 207

#### **Fibroblast Mechanobiology Governs the Progression of Vocal Fold Scarring via the MRTF/SRF Axis**

Ryan M. Friedman<sup>1,2</sup>, Matthew R. Aronson<sup>1,2</sup>, Karen B. Zur<sup>2</sup>, and Riccardo Gottardi<sup>1,2,3</sup>

<sup>1</sup>*Department of Bioengineering, School of Engineering and Applied Sciences, University of Pennsylvania, Philadelphia, PA;* <sup>2</sup>*Department of Surgery, Division of Otolaryngology, Children's Hospital of Philadelphia, Philadelphia, PA;* <sup>3</sup>*Department of Pediatrics, Division*

*of Pulmonary Medicine, University of Pennsylvania, Philadelphia, PA*

### Poster 109 - Abstract 208

#### **Reprogramming Ovarian Cancer-Associated Fibroblasts Using Tumor Conditioned Media**

Hailey Axemaker<sup>1</sup>, and Pilar de la Puente<sup>1,2</sup>  
<sup>1</sup>*Cancer Biology and Immunotherapies Group, Sanford Research, Sioux Falls, SD;* <sup>2</sup>*Department of Obstetrics and Gynecology, University of South Dakota Sanford School of Medicine, Sioux Falls, SD*

### Poster 110 - Abstract 209

#### **Fibroblasts Repair Blood-brain Barrier Damage and Hemorrhagic Brain Injury Via TIMP2**

Lingling Xu and Yao Yao  
*Department of Molecular Pharmacology and Physiology, University of South Florida, Tampa, FL*

## Infectious Diseases – Poster Session

### Poster 111 - Abstract 210

#### **Commensal Microbes Limit *Fusobacterium nucleatum* Colonization of Human Bacterial Bioreactors**

Rachel M. Edens, Hyland Gonzalez, Amy Engevik, and Mindy Engevik  
*Department of Regenerative Medicine and Cell Biology, Medical University of South Carolina, Charleston, SC*

### Poster 112 - Abstract 211

#### **Interleukin 6 Induces an Antiviral Response Independent of Interferons Through Mitochondrial DNA Release and Direct STAT1 Activation**

Nina C. Martino, Ramon Bossardi Ramos, Mei Xing Zuo, Shuhan Lu, Iria Di John Portela, and Alejandro P. Adam  
*Department of Molecular and Cellular Physiology, Albany Medical Center, Albany, NY*

### Poster 113 - Abstract 212

#### ***Clostridioides difficile* Enzymatically Degrades the Outer Wall of *Candida* Species to Support its Growth**

Alyssa S. Gutierrez<sup>1</sup>, Taylor D. Ticer<sup>2</sup>, Adelaide Horvath<sup>1</sup>, Janiece S. Glover<sup>1</sup>, and Melinda A. Engevik<sup>1,2</sup>  
<sup>1</sup>*Department of Regenerative Medicine and Cell Biology, Medical University of South Carolina, Charleston, SC;* <sup>2</sup>*Department of Microbiology and Immunology, Medical University of South Carolina, Charleston, SC*

**Poster 114 - Abstract 213**

**Pathogenicity of *Acinetobacter calcoaceticus***

Kaitlan A. Sullivan<sup>1</sup>, Janiece S. Glover<sup>2</sup>, Mindy A. Engevik<sup>2</sup>, and Jessica H. Hartman<sup>1</sup>

<sup>1</sup>Department of Biochemistry, Medical University of South Carolina, Charleston, SC; <sup>2</sup>Department of Regenerative Medicine and Cell Biology, Medical University of South Carolina, Charleston, SC

**Poster 115 - Abstract 214**

**Blood Group Positive Microbes Stimulate the Development of Anti-blood Group Antibody Formation**

Shang-Chuen Wu, Connie Arthur, and Sean Stowell  
Department of Pathology, Brigham and Women's Hospital, Harvard Medical School, Boston, MA

**Poster 116 - Abstract 215**

**Integrating Genomics, Transcriptomics and Virulence to Study *Streptococcus dysgalactiae* subspecies *equisimilis* (SDSE) Strains Causing Severe Infections in Humans**

Jesus M. Eraso<sup>1</sup>, Randall J. Olsen<sup>1</sup>, S. Wesley Long<sup>1</sup>, Stephen B. Beres<sup>1</sup>, Ryan Gadd<sup>1</sup>, Sarrah Boukthir<sup>2</sup>, Ahmad Faili<sup>2</sup>, Samer Kayal<sup>2</sup>, and James M. Musser<sup>1</sup>

<sup>1</sup>Laboratory of Molecular and Translational Human Infectious Disease Research, Center for Infectious Diseases, Department of Pathology and Genomic Medicine, Houston Methodist Research Institute and Houston Methodist Hospital, Houston, TX; <sup>2</sup>CHU de Rennes, Service de Bactériologie-Hygiène Hospitalière, Rennes, France

**Poster 117 - Abstract 216**

**Population Genomic Analysis of 499 *Streptococcus dysgalactiae* subsp. *equisimilis* Clinical Isolates Collected in French Brittany, 2010-2018**

Stephen B. Beres<sup>1</sup>, Randall J. Olsen<sup>1</sup>, S. Wesley Long<sup>1</sup>, Jesus Eraso<sup>1</sup>, Sarrah Boukthir<sup>2</sup>, Ahmad Faili<sup>3</sup>, Samer Kayal<sup>3</sup>, and James M. Musser<sup>1</sup>

<sup>1</sup>Department of Pathology and Genomic Medicine, Houston Methodist Hospital and Research Institute, Houston, TX; <sup>2</sup>Bacteriology and Hygiene Department, Teaching Hospital of Rennes, Rennes, France; <sup>3</sup>Université de Rennes, Rennes, France

**Poster 118 - Abstract 217**

**Regulation of the Adherens Junction-Associated RNAi Machinery by Oral Pathogens**

Christina Kingsley, Joyce Nair-Menon, Amanda Daulagala, Melinda Engevik, and Antonis Kourtidis  
Department of Regenerative Medicine and Cell Biology, Medical University of South Carolina, Charleston, SC

**Inflammation – Poster Session**

**Poster 119 - Abstract Abstract 121**

**Loss of Glutamine Synthetase Results in Hyperprogressive  $\beta$ -catenin-mutated Hepatocellular Carcinomas Driven by Enhanced Myeloid Cell Induced Immunosuppression**

Evan R. Delgado, Panari Patel, Junyan Tao, Silvia Liu, Brandon M. Lehrich, Minakshi Poddar, Sucha Singh, Judith Bamporiki, Aaron W. Bell, and Satdarshan (Paul) Monga

Department of Pathology, Division of Experimental Pathology, Pittsburgh Liver Research Center, University of Pittsburgh School of Medicine, Pittsburgh, PA

**Poster 120 - Abstract 219**

**Intestinal Protein Sorting Nexin 27 Preserves Epithelial Barrier and Inhibits Inflammation**

Shreya Deb<sup>1</sup>, Yongguo Zhang<sup>1</sup>, Yinglin Xia<sup>1,2</sup>, and Jun Sun<sup>1,2,3,4</sup>

<sup>1</sup>Division of Gastroenterology and Hepatology, Department of Medicine, University of Illinois Chicago, Chicago, IL; <sup>2</sup>Jesse Brown VA Medical Center, Chicago, IL; <sup>3</sup>UIC Cancer Center, University of Illinois Chicago, Chicago, IL; <sup>4</sup>Department of Microbiology and Immunology, University of Illinois Chicago, Chicago, IL

**Liver Pathobiology – Poster Session**

**Poster 121 - Abstract 013**

**Expanding the Pool of Transplantable Livers Using Molecular Profiling and Histopathological Analysis**

Ankita Srivastava, Alexandra Manchel, John Waters, Manju Ambelil, Jan B. Hoek, and Rajanikanth Vadigepalli

Daniel Baugh Institute for Functional Genomics and Computational Biology, Department of Pathology and Genomic Medicine, Thomas Jefferson University, Philadelphia, PA

**Poster 122 - Abstract 220**

**Targeted Hepatocyte-Specific  $\beta$ -catenin Overexpression Facilitates Improved Biliary Repair During Intrahepatic Cholestasis**

Chhavi Goel, Qin Li, Pamela Cornuet, and Kari Nejak-Bowen

Department of Pathology, Division of Experimental Pathology, Pittsburgh Liver Research Center, University of Pittsburgh School of Medicine, Pittsburgh, PA

**Poster 123 - Abstract 221**

**TET1 Antagonizes Ferroptosis in Alcohol Associated Liver Disease**

Sonali Notani<sup>1</sup>, Muhammad Nisar Azhar<sup>1</sup>, Hongze Chen<sup>1</sup>, Eve Elkins<sup>1</sup>, Shaolei Lu<sup>2</sup>, and Chiung-Kuei Huang<sup>1</sup>

<sup>1</sup>Department of Medicine, Pathology and Laboratory Medicine, Tulane University School of Medicine, New Orleans, LA; <sup>2</sup>Department of Pathology Laboratory Medicine, Alpert Medical School of Brown University, Providence, RI

**Poster 124 - Abstract 222**

**Determination of the MicroRNA Profile of the EVs in the Context of Autophagy Deficiency**

Gang Liu, Ailar Arastah, and Xiao-Ming Yin  
Department of Pathology and Laboratory Medicine, Tulane University School of Medicine, New Orleans, LA

**Poster 125 - Abstract 223**

**Inhibition of  $\beta$ -catenin Attenuates Lithocholic Acid-Induced Hepatotoxicity**

Chhavi Goel<sup>1</sup>, Rong Zhang<sup>1</sup>, Silvia Liu<sup>1</sup>, Pamela Cornuet<sup>1</sup>, Xiaochao Ma<sup>2</sup>, and Kari Nejak-Bowen<sup>1,3</sup>

<sup>1</sup>Department of Pathology, University of Pittsburgh School of Medicine, Pittsburgh, PA; <sup>2</sup>Department of Pharmaceutical Sciences, University of Pittsburgh School of Medicine, Pittsburgh, PA; <sup>3</sup>Pittsburgh Liver Research Center, University of Pittsburgh School of Medicine, Pittsburgh, PA

**Poster 126 - Abstract 224**

**Pivotal Role of MET in Promoting Liver Regeneration Following Acetaminophen Hepatotoxicity Identified Using Liver-Specific Knock-Out and Pharmacological Inhibition Strategies in Mice**

Siddhi Jain, Ranjan Mukherjee, Matthew Avery Copeland, John Stoops, Wendy M. Mars and Bharat Bhushan

Department of Pathology, University of Pittsburgh School of Medicine, Pittsburgh Liver Research Center, University of Pittsburgh Medical Center, University of Pittsburgh, Pittsburgh, PA

**Poster 127 - Abstract 225**

**Stellate Cell Wnts Regulate Endothelial Cell-Hepatocyte Zonation to Maintain Hepatic Metabolic and Proliferative Homeostasis**

Anya Singh-Varma, Shikai Hu, Leon Min, Brandon M. Lehrich, Anisha Jain, Minakshi Poddar, Ian Sipula, Fiona M Bello, Amber M Vandevender, Sucha Singh,

Aaron W. Bell, Michael Jurczak, Shuchang Liu, and Satdarshan Paul Monga

Department of Pathology, Division of Experimental Pathology, Pittsburgh Liver Research Center, University of Pittsburgh School of Medicine, Pittsburgh, PA

**Poster 128 - Abstract 226**

**PPAR $\alpha$ -SMPD3 Axis Regulates Hepatic Lipid Accumulation and Inflammation in NAFLD/NASH**

Tomoki Yagai  
Department of Molecular Medicine and Metabolism, Research Institute of Environmental Medicine, Nagoya University, Nagoya, Japan

**Poster 129 - Abstract 227**

**Co-activation of  $\beta$ -catenin with Nuclear Factor Erythroid 2-related Factor 2 and MET: Biological and Therapeutic Implications**

Junyan Tao<sup>1</sup>, Brandon M. Lehrich<sup>1</sup>, Silvia Liu<sup>1</sup>, Evan Delgado<sup>1</sup>, Minakshi Poddar<sup>1</sup>, Sucha Singh<sup>1</sup>, Tulin Dadali-Abel<sup>2</sup>, Wendy Broom<sup>2</sup>, Aaron Bell<sup>1</sup>, and Satdarshan P. Monga<sup>1</sup>

<sup>1</sup>Department of Pathology, Division of Experimental Pathology, Pittsburgh Liver Research Center, University of Pittsburgh School of Medicine, Pittsburgh, PA; <sup>2</sup>Alnylam Pharmaceuticals, Cambridge, MA

**Poster 130 - Abstract 228**

**Lipid Dysregulation in Beta-catenin-driven Hepatocellular Carcinoma**

Aavrati Saxena, Junko Kuramoto, Chad Van-Sant Webb, Richard Smith, Alexis Fulbright, Kimberley J. Evason, and Gregory S. Ducker

Department of Oncological Sciences, Huntsman Cancer Institute, University of Utah, Salt Lake City, UT

**Poster 131 - Abstract 229**

**Maternal Obesogenic Diet Exposure Increases Post-natal Hepatocyte Proliferation and Shifts Liver Regeneration in Offspring Following Partial Hepatectomy**

Naresh Naik Ramavath, Jiansheng Huang, David Rudnick, and Michael D. Thompson

Department of Pediatrics, Washington University School of Medicine, St. Louis, MO

## Mechanisms of Fibrosis – Poster Session

### Poster 132 - Abstract 045

#### The Role of Fibronectin in Mediating the Progression of TGF- $\beta$ 1-Induced Renal Fibrosis in a 3D Culture Model

Kristin Kim and Christopher Lemmon  
*Department of Biomedical Engineering, Virginia Commonwealth University, Richmond, VA*

### Poster 133 - Abstract 089

#### Lung Mesenchymal Cell Apoptosis and Plasticity Revealed by a BCL2 Overexpression Mouse Model

Maria Jose Gacha-Garay<sup>1,2</sup> and Jichao Chen<sup>2</sup>  
<sup>1</sup>*MD Anderson Cancer Center-University of Texas Health Houston, Graduate School of Biomedical Sciences, Houston, TX;* <sup>2</sup>*Department of Pulmonary Medicine, MD Anderson Cancer Center, Houston, TX*

### Poster 134 - Abstract 230

#### Role of DEK in Chronic Liver Disease Development

Nickol Wahby, Niani Bailey, Clifford Nkomo, Adriana Lopez, and Bilon Khambu  
*Department of Pathology and Laboratory Medicine, Tulane University School of Medicine, New Orleans, LA*

### Poster 135 - Abstract 231

#### The Potential of Long Noncoding RNAs to Regulate Conjunctival Fibrosis

Stephanie Frahs Tuft, Carissa Hale, Abu Sayeed Chowdhury, and Julia Oxford  
*Biomolecular Research Center, Boise State University, Boise, ID*

### Poster 136 - Abstract 232

#### Hydrogel-mediated Delivery of Thy-1 to Alleviate Fibrosis

Mathew Kibet and Daniel Abebayehu  
*Department of Biomedical Engineering, University of Virginia, Charlottesville, VA*

### Poster 137 - Abstract 233

#### Exercise in Chronic Kidney Disease Patients Does Not Significantly Alter Fibrosis in Quadriceps Muscle

Sarah E. Brashear<sup>1</sup>, Armin Ahmadi<sup>1</sup>, Vishal Rao<sup>1</sup>, Gwenaelle Begue<sup>2</sup>, Tae Youn Kim<sup>1</sup>, Jorge Gamboa<sup>3</sup>, Baback Roshanravan<sup>1</sup>, and Lucas Smith<sup>2</sup>  
<sup>1</sup>*Department of Neurobiology, Physiology, and Behavior, University of California - Davis, Davis, CA;* <sup>2</sup>*Department of Kinesiology, California State University - Sacramento, Sacramento, CA;*

<sup>3</sup>*Department of Medicine, Vanderbilt University Medical Center, Nashville, TN*

### Poster 138 - Abstract 234

#### Osteopontin and CCR2 Are Involved in the Inflammatory Cells in Non-alcoholic Steatohepatitis Model Rats

Ikumi Sato<sup>1</sup>, Ryosuke Ando<sup>2</sup>, Rikuto Someya<sup>3</sup>, Kurumi Matsuki<sup>3</sup>, Kentaro Ikemura<sup>2</sup>, Gabriel Opoku<sup>2</sup>, Ren Takashita<sup>2</sup>, Saeko Hirabayashi<sup>2</sup>, Farhana Hasib<sup>2</sup>, Nodoka Iguchi<sup>2</sup>, Eri Katsuyama<sup>1</sup>, Shusei Yamamoto<sup>1</sup>, Shogo Watanabe<sup>1</sup>, Satoshi Hirohata<sup>1</sup>  
<sup>1</sup>*Faculty of Health Sciences, Okayama University, Japan;* <sup>2</sup>*Department of Medical Technology, Graduate School of Health Sciences, Okayama University, Japan;* <sup>3</sup>*Department of Medical Technology, Faculty of Health Sciences, Okayama University, Japan*

### Poster 139 - Abstract 235

#### Trypanosoma cruzi Induces the Expression of Host piwi-interacting RNAs Targeting TGFB1 to Facilitate Cellular Infection

Kayla J. Rayford, Ayorinde Cooley, Inmar Osi, Anthony Strode, Destiny Ball, Siddharth Pratap, and Pius N. Nde  
*Department of Microbiology, Immunology and Physiology Meharry Medical College, Nashville, TN*

### Poster 140 - Abstract 236

#### Higher Urine LG3 Levels are Associated with Risk of Cardiovascular Events and Chronic Kidney Disease Progression in Individuals with Type 2 Diabetes and Microalbuminuria

Clara F.G. Laursen<sup>1</sup>, Alexandra Louise Møller<sup>1</sup>, Daniel G.K. Rasmussen<sup>1</sup>, Federica Genovese<sup>1</sup>, Henrik Reinhard<sup>2</sup>, Bernt Johan von Scholten<sup>2,3</sup>, Morten A. Karsdal<sup>1</sup>, Tine W. Hansen<sup>2</sup>, and Peter Rossing<sup>2,4</sup>  
<sup>1</sup>*Nordic Bioscience, Denmark;* <sup>2</sup>*Steno Diabetes Center Copenhagen, Denmark;* <sup>3</sup>*Novo Nordisk A/S, Søborg, Denmark;* <sup>4</sup>*Department of Clinical Medicine, University of Copenhagen, Denmark*

### Poster 141 - Abstract 237

#### Determining the Role of the Extracellular Matrix in the Pathogenesis of Polycystic Kidney Disease

Richard W. Naylor and Rachel Lennon  
*Division of Cell Matrix Biology and Regenerative Medicine, University of Manchester, Manchester, UK*

### Poster 142 - Abstract 238

#### Loss of Neuropilin-1 in Vascular Smooth Muscle Results in Hypertension

Gabriel Luis B. Ocampo<sup>1</sup>, Yao Gao<sup>1</sup>, Dakshnapriya Balasubramanian<sup>1</sup>, Vivian Cristofaro<sup>2</sup>, Karen S. Moulton<sup>3</sup>, Alexander Bigger-Allen<sup>4</sup>, Beibei Wang<sup>1</sup>, Hong Chen<sup>1</sup>, Rosalyn M. Adam<sup>4</sup>, Maryrose P. Sullivan<sup>2</sup>, and Diane R. Bielenberg<sup>1</sup>

<sup>1</sup>Vascular Biology Program, Boston Children's Hospital, Boston, MA; <sup>2</sup>VA Boston Healthcare System, Boston, MA; <sup>3</sup>Department of Medicine, University of Colorado Anschutz Medical Campus, Aurora, CO; <sup>4</sup>Urological Diseases Research Center, Boston Children's Hospital, Boston, MA

## Neuropathology – Poster Session

### Poster 143 - Abstract 031

#### Quantitative Digital Image Analysis of Whole Slide Images to Investigate White Matter Rarefaction in Alzheimer's Disease

Dana R. Julian<sup>1</sup>, Jr Jiun Liou<sup>2</sup>, Karl Herrup<sup>3</sup>, Thomas Pearce<sup>1</sup>, Howard Aizenstein<sup>4</sup>, and Julia K. Kofler<sup>1</sup>

<sup>1</sup>Department of Pathology, University of Pittsburgh School of Medicine, Pittsburgh, PA; <sup>2</sup>Department of Bioengineering, University of Pittsburgh, Pittsburgh, PA; <sup>3</sup>Department of Neurobiology, University of Pittsburgh School of Medicine, Pittsburgh, PA; <sup>4</sup>Department of Psychiatry, University of Pittsburgh School of Medicine, Pittsburgh, PA

### Poster 144 - Abstract 239

#### Placing Tumor Cells in the Organ-Specific Context: 3D in Vitro Models of Glioblastoma on Acellular Brain Matrices

Mahsa Vaezzadeh<sup>1</sup>, Umut Rende<sup>2</sup>, Mina Ghanimi Fard<sup>1</sup>, Annemarie Nadort<sup>1</sup>, Aleksandra Igrunkova<sup>1</sup>, Sameera Iqbal<sup>1</sup>, Vivienne Lee<sup>1</sup>, Lindsay Parker<sup>1</sup>, Benjamin Heng<sup>1</sup>, Anna Guller<sup>1</sup>

<sup>1</sup>Macquarie Medical School, Macquarie University, Macquarie Park, Australia; <sup>2</sup>University of New South Wales

### Poster 145 - Abstract 240

#### Role of ICI-182,780 in Antagonize Angiotensin II-Stimulatory Effects in Glioblastoma Stemness

Giuseppina Daniela Naimo, Adele Elisabetta Leonetti, Salvatore Panza, Luca Gelsomino, Paola Ruffo, Rocco Malivindi, Loredana Mauro, and Sebastiano Andò  
Department of Pharmacy, Health and Nutritional Sciences, University of Calabria, Cosenza, Italy

### Poster 146 - Abstract 241

#### Brainstem CircRNAs Regulation in Neonatal Sepsis

Michele J. Alves, Anika Ayyalaraju, Juliet Torres, and José Javier Otero

Department of Pathology, The Ohio State University, College of Medicine, Columbus, OH

### Poster 147 - Abstract 242

#### Evaluation of the Alpha-synuclein and Tau Antifibrillary Activity of 2-Amino-4-methoxybenzothiazole Derivatives

Taiwo Ademoye<sup>1</sup>, Ahmed A. Elbatrawy<sup>1</sup>, Eduardo Ramirez<sup>1</sup>, Ashique Zami<sup>2</sup>, Raluca Ostafe<sup>2</sup>, and Jessica S. Fortin<sup>1</sup>

<sup>1</sup>Basic Medical Sciences, College of Veterinary Medicine, Purdue University, West Lafayette, IN; <sup>2</sup>Institute of Inflammation, Immunology, and Infectious Disease, Purdue University, West Lafayette, IN

### Poster 148 - Abstract 243

#### A Symmetric Molecule with Anti-oligomer, Anti-seeding, and Disaggregation Activities

Jessica S. Fortin<sup>1</sup>, Eduardo Ramirez<sup>1</sup>, Susantha K. Ganegamage<sup>1</sup>, Henika S. Patel<sup>2</sup>, Adedayo Ogunware<sup>3</sup>, German Plascencia-Villa<sup>3</sup>, Heba Alhakhala<sup>4</sup>, Arati Tripathi<sup>4</sup>, Naseem H. Alfadhil<sup>1</sup>, Ulf Dettmer<sup>4</sup>, Cristian Lasagna-Reeves<sup>2</sup>, and George Perry<sup>3</sup>

<sup>1</sup>Department of Basic Medical Sciences, Purdue University, West Lafayette, IN; <sup>2</sup>Stark Neurosciences Research Institute, Indiana University School of Medicine, Indianapolis, IN; <sup>3</sup>Department of Neuroscience, Developmental and Regenerative Biology, University of Texas at San Antonio, San Antonio, TX; <sup>4</sup>Ann Romney Center for Neurologic Diseases, Brigham and Women's Hospital and Harvard Medical School, Boston, MA

### Poster 149 - Abstract 244

#### Exploring the Impact of Signal Peptide Region on Amylin Misfolding as Potential Target for Alzheimer's Disease Treatment

Natalie G. Horgan and Jessica S. Fortin  
Basic Medical Sciences, College of Veterinary Medicine, Purdue University, West Lafayette IN

### Poster 150 - Abstract 245

#### Examination of Autophagy, Vascular Integrity, and Cognitive Decline

Elaine L. Bearer, Mohsen Ranjbar, Karen S. SantaCruz, and Gary A. Rosenberg  
Department of Pathology, University of New Mexico Health Sciences Center, Center for Memory and Aging, University of New Mexico Health Sciences Center, Albuquerque, NM

## Nutrition and Disease – Poster Session

### Poster 151 - Abstract 246

#### Intermittent Fasting Improves Colonic Immune Response in TNBS-induced Colitis Experimental Model

Abdelouafi Benmouloud

*University of M'hamed Bougara Boumerdes (UMBB), Houari Boumediene University of Sciences and Technology (LRZA, FSB, USTHB), University of Algiers, Benkhedda, Algiers*

### Poster 152 - Abstract 247

#### Use of Structure-Activity Relationship (SAR) Studies to Design Region B Capsaicin Analogs with Robust Anti-cancer Activity

Reagan Light<sup>1</sup>, Rama S. Gadapalli<sup>2</sup>, John M Rimoldi<sup>2</sup>, Jamie R. Friedman<sup>3</sup>, Stephen D. Richbart<sup>1</sup>, Justin C Merritt<sup>1</sup>, Sarah L Miles<sup>1</sup> and Piyali Dasgupta<sup>1</sup>

<sup>1</sup>Department of Biomedical Sciences, Joan C. Edwards School of Medicine, Marshall University, Huntington, WV; <sup>2</sup>Department of Biomolecular Sciences, The University of Mississippi, University MS; <sup>3</sup>BioAgilytix Labs, Durham, NC

### Poster 153 - Abstract 248

#### Anti-cancer Activity of Non-Pungent Region C Capsaicin Analogs

Kushal J. Modi<sup>1</sup>, Rama S. Gadapalli<sup>2</sup>, Austin T. Akers<sup>1</sup>, Nicholas A. Nolan<sup>1</sup>, Kathleen C. Brown<sup>1</sup>, Kate W. Colclough<sup>1</sup>, Sarah L. Miles<sup>1</sup>, John M. Rimoldi<sup>2</sup>, Mariusz Madej<sup>3</sup>, and Piyali Dasgupta<sup>1</sup>.

<sup>1</sup>Department of Biomedical Sciences, Joan C. Edwards School of Medicine, Marshall University, Huntington, WV; <sup>2</sup>Department of Biomolecular Sciences, The University of Mississippi, University, MS; <sup>3</sup>Crown Bioscience, San Diego, CA

## Tissue-based Analysis – Poster Session

### Poster 154 - Abstract 249

#### Insights into the Distribution of P-glycoproteins in Adult *Toxocara canis* using RNASCOPE

Theresa A. Quintana and Jeba Rose Jesudoss Chelladurai

*Department of Diagnostic Medicine/Pathobiology, Kansas State University College of Veterinary Medicine, Manhattan, KS*

### Poster 155 - Abstract 250

#### Clearing the Way: Non-toxic Clearing and Labelling with Fluorescent REAfinity Antibodies for the Enhanced 3D Visualization of Tissues and Organs

Kevin Bigott, Johanna Werheid, Daniel Barleben, Kira Gerhold, Lea Bornneman, Florian Kuster, Diogo Bessa-Neto, Simon Merz, Dmytro Yushchenko, Jonathan Fauerbach, Lutz Haalck, Gernolt Elbel, Christian Dose, Andreas Bosio, Melanie Jungblut, Dominik Eckardt, Lena Nolte, and Kyle Kern  
*Miltenyi Biotec Inc, San Diego, CA*

## Vascular Biology – Poster Session

### Poster 156 - Abstract 251

#### Glypican 1 and Intracellular Calcium Levels in Lung Endothelial Cells

Joaquin Lopez Rosales, Joao Luis Carvalho-de-Souza, Andreia Zago Chignalia

*Department of Anesthesiology, The University of Arizona, College of Medicine-Tucson, Tucson, AZ*

### Poster 157 - Abstract 252

#### The Histone Modification H3K4me2 and the DNA Demethylase TET2 Coordinately Regulates Microvascular SMC Recruitment and Coverage During Hindlimb Ischemia-induced Angiogenesis

Maryam Alanjawi<sup>1</sup>, Mingjun Liu<sup>1</sup>, Cristina Espinosa-Diez<sup>1,2</sup>, Jianxin Wei<sup>1</sup>, Shuai Yuan<sup>1,3</sup>, Panagiotis Koutakis<sup>4</sup>, Luke Brewster<sup>5</sup>, Adam Straub<sup>1,3</sup>, and Delphine Gomez<sup>1,2</sup>

<sup>1</sup>Pittsburgh Heart Lung and Blood Vascular Medicine Institute, University of Pittsburgh, Pittsburgh, PA; <sup>2</sup>Department of Medicine, Division of Cardiology, University of Pittsburgh, Pittsburgh, PA; <sup>3</sup>Department of Pharmacology and Chemical Biology, University of Pittsburgh, Pittsburgh, PA; <sup>4</sup>Department of Biology, Baylor University, Houston, TX; <sup>5</sup>Division of Vascular Surgery, Emory University School of Medicine, Atlanta, GA

### Poster 158 - Abstract 253

#### PECAM-1 Blockade Modulates Leukocyte Extravasation into the Subcortex after Ischemic Stroke and Reperfusion

Erika Arias<sup>1</sup>, Neil A. Nadkarni<sup>3</sup>, Maureen E. Haynes<sup>1</sup>, Ayush Batra<sup>2</sup>, William A. Muller<sup>1</sup>, and David P. Sullivan<sup>1</sup>

<sup>1</sup>Department of Pathology, Northwestern University, Chicago, IL; <sup>2</sup>Department of Neurology, Northwestern University, Chicago, IL; <sup>3</sup>Department of Neurology, Stony Brook University, Stony Brook, NY

**Poster 159 - Abstract 254**

**Characterizing the Relationship Between Hypoxia, Inflammatory Cell Infiltrate, and Angiogenesis in a Murine Model of Type II Diabetic Wound Healing**

Michael R. Grynyshyn and Douglas W. Hamilton  
*Department of Anatomy and Cell Biology, University of Western Ontario, London, Ontario, Canada*

**Poster 160 - Abstract 255**

**The Inhibition of the Alpha7-nicotinic Acetylcholine Receptor Blocks Retinal Angiogenesis: Potential Applications in ARMD and Diabetic Retinopathy**

Justin C. Merritt<sup>1</sup>, Aaron M. Dom<sup>1</sup>, Adam W. Buckley<sup>1</sup>, Kathleen C. Brown<sup>1</sup>, Richard D. Egleton<sup>1</sup>, Aileen J. Marcelo<sup>1</sup>, Nancy A. Proper<sup>1</sup>, Donald E. Weller<sup>2</sup>, Yashoni H. Shah<sup>3</sup>, and Piyali Dasgupta<sup>1</sup>

<sup>1</sup>*Department of Biomedical Sciences, Joan C. Edwards School of Medicine, Marshall University, Huntington, WV*; <sup>2</sup>*Department of Biology, University of Charleston, Charleston, WV*; <sup>3</sup>*Department of Biology, West Virginia University, Morgantown, WV*

**Poster 161 - Abstract 256**

**Endocrine Disrupting Chemical Bisphenol A Exposure Induced Testicular Toxicity in Gerbils: Histopathological Evaluation**

Abdelouafi Benmouloud<sup>1,2,3</sup>, Lilia Kacimi<sup>2,3</sup>, Nawel Aknoun-Sail<sup>2,3</sup>, Yamina Zatra<sup>2,3,4</sup>, Salima Charallah<sup>2,3</sup>, and Mounira Khaldoun<sup>2,3</sup>

<sup>1</sup>*University M'hamed Bougara Boumerdes (UMBB), Boumerdes, Algeria*; <sup>2</sup>*Houari Boumediene University of Sciences and Technology (LRZA, FSB, USTHB), Algiers, Algeria*; <sup>3</sup>*University of Algiers 1 Benyoucef Benkhedda, Algiers, Algeria*; <sup>4</sup>*Saad Dahlab university of Blida I, Blida, Algeria*

**Poster 162 - Abstract 257**

**Dimethyl Fumarate Inhibits VEGF-Driven Angiogenesis of Human Retinal Endothelial Cells**

Daisy Y. Shu, Mong Linh Vuong, Alena C. Appiah, Pei Qin Ng, Menglu Yang, Zhengping Hu, Suman Chaudhary, Margarete M. Karg, Anton Lennikov, and Leo A. Kim

*Schepens Eye Research Institute of Mass Eye and Ear, Department of Ophthalmology, Harvard Medical School, Boston, MA*

**Poster 163 - Abstract 258**

**Endomucin Deletion Leads to Reduced Pathological Retinal Neovascularization**

Zhengping Hu<sup>1</sup>, Issahy Cano<sup>1</sup>, Anton Lennikov<sup>1</sup>, Melissa Wild<sup>1</sup>, Urvi Gupta<sup>3</sup>, Magali Saint-Geniez<sup>4</sup>, Yin Shan Eric Ng<sup>5</sup>, and Patricia A. D'Amore<sup>1,2</sup>

<sup>1</sup>*Department of Ophthalmology, Schepens Eye Research Institute of Massachusetts Eye and Ear, Harvard Medical School, Boston, MA*; <sup>2</sup>*Department of Pathology, Schepens Eye Research Institute of Massachusetts Eye and Ear, Harvard Medical School, Boston, MA*; <sup>3</sup>*School of Medicine, Case Western Reserve University, Cleveland, OH*; <sup>4</sup>*Novartis Institutes for Biomedical Research, Cambridge, MA*; <sup>5</sup>*EyeBio, London, England*

**Wound Healing – Poster Session**

**Poster 164 - Abstract 259**

**Increased Wound Healing Rates in P-glycoprotein Deficient Intestinal Cells**

Summer Johnson, MaKenna DeYoung, Mikayla Spangler, and Scott Tanner

*Department of Natural Sciences and Engineering, USC Upstate, Spartanburg, SC*

**Poster 165 - Abstract 260**

**The Extracellular Microenvironment Modulates Fibronectin Matrix Formation by Cortical Astrocytes**

Yu Sun and Jean E. Schwarzbauer,  
*Department of Molecular Biology, Princeton University, Princeton, NJ*

**Poster 166 - Abstract 261**

**Age-related Deterioration of the Dermal Extracellular Matrix Microenvironment Promotes Skin Cancer Development**

Taihao Quan, Alexandre Ermilov, John J. Voorhees, Andrzej A. Dlugosz, and Gary J. Fisher

*Department of Dermatology, University of Michigan, Ann Arbor, MI*

**Poster 167 - Abstract 262**

**Investigating Oxidative Stress in Human Chronic Wounds**

Dylan Tinney<sup>1</sup>, David Keast<sup>2</sup>, and Douglas Hamilton<sup>1</sup>

<sup>1</sup>*Department of Anatomy and Cell Biology, Schulich School of Medicine and Dentistry, Western University, London, Ontario, Canada*; <sup>2</sup>*Parkwood Institute, St. Joseph's Health Care London, London, Ontario, Canada*

**Basement Membranes II – Poster Session**

**Poster 168 - Abstract 070**

**Dual Linker Protein Repair of the Lama2-null Dystrophic Mouse by AAV Somatic Gene Therapy**

Karen K. McKee<sup>1</sup> and Peter D. Yurchenco<sup>1</sup>

<sup>1</sup>*Department of Pathology and Laboratory Medicine, Rutgers University – Robert Wood Johnson Medical School, Piscataway, NJ*



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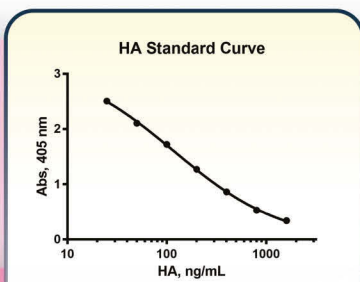


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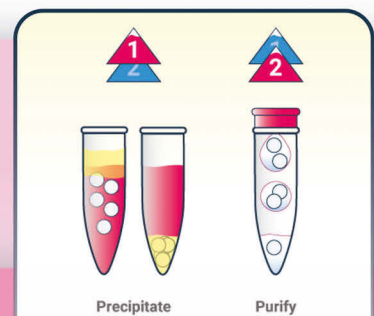
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# SLAM 2024

## Summer Liver Academy Meeting

June 16–20, 2024

The Westin Cape Coral Resort at Marina Village  
Cape Coral, FL

The biennial FASEB Liver Biology Conference you have grown to know and love has a new name and a new host! We are pleased to announce that the meeting is being reincarnated as SLAM, the Summer Liver Academy Meeting, under the direction of the American Society for Investigative Pathology (ASIP). SLAM aims to incorporate the best of prior liver meetings: cutting-edge science, an interactive format and opportunities for trainees—all within an inviting resort environment.

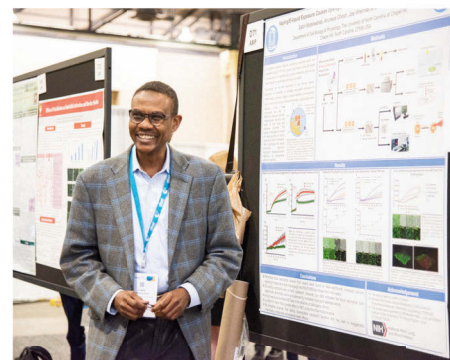
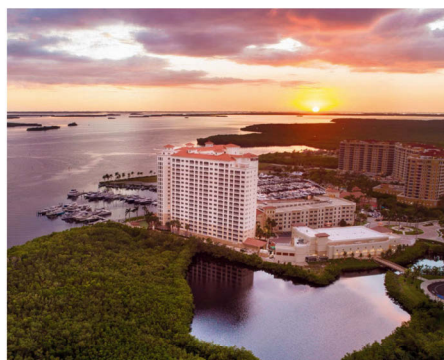
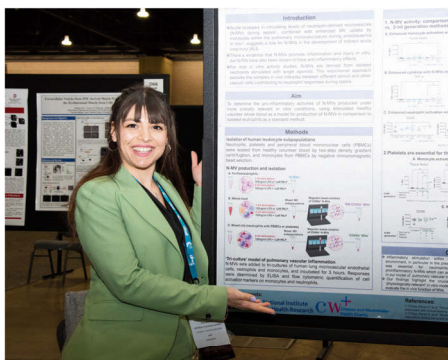
The venue is on the west coast of Florida, with convenient access from major airports in the US and Europe. More information coming soon!

### SLAM 2024 Organizing Committee

Jackie Maher, MD (University of California, San Francisco)

Kari Nejak-Bowen, MBA, PhD (University of Pittsburgh)

Jan Tchorz, PhD (Novartis)



For more information visit [ASIP.org](https://www.asip.org)

# Tissue, Matrix & Pathobiology Schedule-at-a-Glance

## **Sunday, October 22**

- Scientific programming will begin at 8:30 AM
- Exhibit hours 8:00 AM–5:00 PM
- Presidents Welcome and Award Talks 4:30–6:00 PM
- Joint Opening Keynote: Dr. Erkki Ruoslahti 6:00–7:00 PM
- Joint Opening Reception 7:00–9:00 PM

## **Monday, October 23**

- Career/Education sessions 7:00–8:30 AM
- Scientific programming 8:30 AM–5:30 PM
- Exhibit hours 8:00 AM–5:00 PM
- Joint Plenary 10:30 AM–12 PM
- Poster Session 12:00–2:00 PM

## **Tuesday, October 24**

- Career/Education sessions 7:00–8:30 AM
- Scientific programming from 8:30 AM–5:30 PM
- Exhibit hours 8:00 AM–5:00 PM
- Joint Plenary 10:30 AM–12:00 PM
- Poster Session 12:00–2:00 PM

## **Wednesday, October 25**

- Career/Education sessions 7:00–8:30 AM
- Scientific programming from 8:30 AM–12:00 PM
- Exhibit hours 8:00 AM–12:00 PM
- Joint Plenary 10:30 AM–12:00 PM

*Joint meeting of*

