



Injury, Inflammation and Fibrosis

March 26–30, 2017 | Cliff Lodge | Snowbird, Utah | USA

Scientific Organizers:

Tatiana Kisseleva, University of California, San Diego, USA

Michael Karin, University of California, San Diego, USA

Andrew M. Tager, Massachusetts General Hospital, USA

Fibrosis is a common response of many organs to chronic injury and inflammation. This leads to destruction of organ architecture with loss of function. Until recently, there have been no therapies to slow the progression of fibrosis and to maintain normal organ function. Recent advances have provided new insights into the pathogenesis of fibrosis, new drug targets, and new drugs in clinical studies. This conference will bring together basic biologists and translational and clinical researchers to discuss core mechanisms underlying inflammation and fibrosis, to compare and contrast fibrotic diseases, preclinical models, the potential for regeneration and regression of fibrosis, and potential therapies. The interaction between the host genetics, the environment and the microbiome in the pathogenesis of fibrotic diseases will be addressed. Also, non-invasive methods to assess fibrosis including advanced imaging and intermediate biomarkers will be discussed. This conference will be a unique opportunity for investigators who are focused on organ-specific diseases – i.e., medical subspecialists – to participate in cross-disciplinary, multi-organ discussions in order to gain new insights into their research.


Session Topics:

- Predisposition to Fibrosis: Genetic and Epigenetic Contributions to Fibrosis
- Getting Fibrosis Started: Epithelial Senescence and/or Injury
- Shaping Fibrotic Responses: The Role of Inflammation in Tissue Repair
- Creating The Scar: Factors Regulating Systemic Responses to Fibrosis
- Amplifying Fibrosis: Activation of Fibrogenic Myofibroblasts
- Tumor-Associated Stroma: Parallels with Fibrosis
- Halting Fibrosis: Inducing Regression of Fibrosis
- New Directions in Patient Evaluation and Treatment

Scholarship Application & Discounted Abstract Deadline: November 28, 2016

Abstract Deadline: January 9, 2017

Discounted Registration Deadline: January 23, 2017



Note: Scholarships are available for graduate students and postdoctoral fellows and are awarded based on the abstract submitted.

Upper image of fibroblasts courtesy of Dylan Burnette and Jennifer Lippincott-Schwartz, Eunice Kennedy Shriver National Institute of Child Health, NIH

Meeting Hashtag: #KSfibrosis

www.keystonesymposia.org/17C8

KEYSTONE SYMPOSIA™
on Molecular and Cellular Biology
Accelerating Life Science Discovery

www.keystonesymposia.org/meetings | 1.800.253.0685 | 1.970.262.1230

a 501(c)(3) nonprofit educational organization

KEYSTONE SYMPOSIA

on Molecular and Cellular Biology

Injury, Inflammation and Fibrosis (C8)

March 26-30, 2017 • Snowbird Resort • Snowbird, Utah, USA

Scientific Organizers: Tatiana Kisseleva, Michael Karin and Andrew M. Tager

Sponsored by Boehringer Ingelheim Pharmaceuticals, Inc., Regeneron Pharmaceuticals, Inc. and Theravance Biopharma. This activity was supported by an educational grant from Celgene Corporation.

Abstract & Scholarship Deadline: November 28, 2016 / Abstract Deadline: January 9, 2017 / Discounted Registration Deadline: January 23, 2017

SUNDAY, MARCH 26

Arrival and Registration

MONDAY, MARCH 27

Welcome and Keynote Address

***Tatiana Kisseleva**, University of California, San Diego, USA

Michael Karin, University of California, San Diego, USA
Inflammation in NASH

Predisposition to Fibrosis: Genetic and Epigenetic Contributions to Fibrosis

***Michael Karin**, University of California, San Diego, USA

David A. Schwartz, University of Colorado Denver, USA
Idiopathic Pulmonary Fibrosis: A Genetic Disease that Involves Mucociliary Dysfunction of the Peripheral Airways

Mary Armanios, Johns Hopkins University School of Medicine, USA
Mechanisms of Telomere-Mediated Pulmonary Fibrosis

Pura Munoz Canoves, Universitat Pompeu Fabra, Spain
Senescence of the Muscle Stem Cell Population in Injured Aged Muscles

Alexander R. Abbas, Genentech, Inc., USA
Short Talk: Peripheral Blood Telomere Shortening Predicts Lung Function Decline in Idiopathic Pulmonary Fibrosis

Ty Dale Troutman, University of California, San Diego, USA
Short Talk: Natural Genetic Variation Reveals Encoded Programs Employed by Kupffer Cells During Liver Fibrosis

Gisli Jenkins, University of Nottingham, UK
Short Talk: A Novel Polymorphism Linked to Altered Expression of AKAP13 is Associated with Susceptibility to IPF

Getting Fibrosis Started: Epithelial Senescence and/or Injury

***David A. Brenner**, University of California, San Diego, USA

Joseph V. Bonventre, Brigham and Women's Hospital, Harvard Medical School, USA
Maladaptive Proximal Tubule Repair: KIM-1 and Epithelial Cell Cycle Arrest and Senescence

Quentin M. Anstee, Newcastle University, UK
The Genetics of Non-Alcoholic Fatty Liver Disease

Katalin Susztak, University of Pennsylvania, USA
Integrative Analysis of Metabolic and Genetic Settings in Chronic Kidney Disease

Christy Trussoni, Mayo Clinic, USA
Short Talk: Senescent Cholangiocytes Contribute to Macrophage Recruitment in Primary Sclerosing Cholangitis

Poster Session 1

TUESDAY, MARCH 28

Shaping Fibrotic Responses: The Role of Inflammation in Tissue Repair

***John Varga**, Feinberg School of Medicine, USA

Thomas A. Wynn, NIAID, National Institutes of Health, USA
Potential Pitfalls of Anti-Fibrotic Therapy: Rebound Inflammation and Failed Regeneration

Frederic Geissmann, Memorial Sloan Kettering Cancer Center, USA
Environment Regulates Pro-Inflammatory and Pro-Fibrogenic Macrophages

Shizuo Akira, Osaka University, Japan
Critical Role of Trib1 in Differentiation of Tissue-Resident M2-Like Macrophages

Jörg H.W. Distler, University of Erlangen-Nuremberg, Germany
Targeting TGFbeta-Dependent Fibroblast Activation

Richard H. Gomer, Texas A&M University, USA
Short Talk: A Positive Feedback Loop Involving Sialidases Drives Pulmonary Fibrosis

Thomas Fabre, University of Montreal Hospital Research Center, CRCHUM, Canada

Short Talk: Type III Inflammation Drives Liver Fibrosis Progression by Regulating TGF-Beta Signaling Through Activation of Mapks

Workshop 1

***Thomas A. Wynn**, NIAID, National Institutes of Health, USA

Shaik Ohidar Rahaman, University of Maryland, USA
TRPV4 Channel Regulates Dermal Fibrosis and is Associated with Scleroderma

Sang Jun Lee, Ionis Pharmaceuticals, USA
Evaluation of Antisense Oligonucleotide against CHOP in Rodent Models with ER Stress Dysfunction

Matthew L. Meizlish, Yale University, USA
Macrophages and Fibroblasts Sense Variations in Collagen Density within 3-Dimensional Matrix Environment

Jason Seidman, University of California, San Diego, USA
Kupffer Cells Regulate Liver Inflammation and Fibrosis Through NCoR

Sneha Sitaraman, University of Cincinnati College of Medicine, USA
Expression of Disease-Associated Surfactant Protein C Mutation Increases Susceptibility to Fibrosis

Angela Zeigler, University of Virginia, USA
Predicting Drivers and Modulators of Fibroblast Phenotype During Myocardial Infarction Healing

Creating The Scar: Factors Regulating Systemic Responses to Fibrosis

***Shizuo Akira**, Osaka University, Japan

Natalie J. Torok, University of California, Davis, USA
NADPH Oxidases in Non-Alcoholic Steatohepatitis

Erwin F. Wagner, Spanish National Cancer Research Centre, Spain
Fra-2/AP-1 Mediates Fibroblast Activation and Fibrosis Development

Rob Knight, University of California, San Diego, USA
Spatial Mapping of the Human Microbiome

Edward Marsh, Yale University, USA
Short Talk: Spatiotemporal Organization of Fibroblast-Fibroblast Networks in Homeostasis

KEYSTONE SYMPOSIA

on Molecular and Cellular Biology

Injury, Inflammation and Fibrosis (C8)

March 26-30, 2017 • Snowbird Resort • Snowbird, Utah, USA

Scientific Organizers: Tatiana Kisseleva, Michael Karin and Andrew M. Tager

Sponsored by Boehringer Ingelheim Pharmaceuticals, Inc., Regeneron Pharmaceuticals, Inc. and Theravance Biopharma. This activity was supported by an educational grant from Celgene Corporation.

Abstract & Scholarship Deadline: November 28, 2016 / Abstract Deadline: January 9, 2017 / Discounted Registration Deadline: January 23, 2017

Poster Session 2

WEDNESDAY, MARCH 29

Amplifying Fibrosis: Activation of Fibrogenic Myofibroblasts

***Natalie J. Torok**, University of California, Davis, USA

Dean Sheppard, University of California, San Francisco, USA
Molecular Signatures of Collagen-Producing Cells in Multiple Models of Pathologic Tissue Fibrosis

Rebecca G. Wells, University of Pennsylvania, USA
Fibrosis in the Extrahepatic Bile Ducts

David A. Brenner, University of California, San Diego, USA
Origin of Myofibroblasts in Fibrotic Liver

Lester F. Lau, University of Illinois at Chicago, USA
The Matricellular Protein CCN1 in Tissue Injury Repair

Chih-Wei Chen, Friedrich-Alexander-University Erlangen-Nuremberg, Germany
Short Talk: Wnt5a Promotes Tissue Fibrosis by PCP-Dependent Activation of Latent TGFbeta

Resat Cinar, NIAAA, National Institutes of Health, USA
Short Talk: Cannabinoid CB1 Receptor Overactivity Contributes to the Pathogenesis of IPF and its Dual-Targeting with Inducible Nitric Oxide Synthase Improves Anti-Fibrotic Efficacy

Workshop 2

***Rebecca G. Wells**, University of Pennsylvania, USA

Scott M. MacDonnell, Regeneron Pharmaceuticals, Inc., USA
Identification of Distinct Cell Populations from Fibrotic Mouse Kidneys using Single Cell Sequencing

Sunny Kataria, Institute for Stem Cell Biology and Regenerative Medicine, India
Cellular and Molecular Heterogeneity of Fibroblast Responses in Mouse Model of Dermal Fibrosis

Guobao Chen, Johns Hopkins University, USA
IL-17A-Driven Post-Cardiac Injury Remodeling is Dependent on its Signaling to Sca-1+ Cardiac Fibroblasts

Richard Lee Gieseck III, NIAID, National Institutes of Health, USA
Enhanced Protection from Fibrosis and Inflammation by Dual-Blockade of IL-13 and IFNgamma

Kevin M. Hart, NIAID, National Institutes of Health, USA
Type-2 Immunity is Protective in Metabolic Disease but Exacerbates NAFLD Collaboratively with TGF-Beta

Greg S. Gojanovich, University of Hawaii, USA
Neurofibromin 1 Loss in Tcf21+ Fibroblasts Accelerates Heart Failure Following TAC

Tumor-Associated Stroma: Parallels with Fibrosis

***Dean Sheppard**, University of California, San Francisco, USA

Gian Paolo Dotto, University of Lausanne, Switzerland
Multistep Cancer-Associated Fibroblast Activation: A Notch/CSL-Gli Regulatory Axis

Andrew D. Rhim, University of Michigan Medical School, USA
Pancreatic Cancer Stroma: A Loud, Crowded, and Complex Field

Shuang Liang, University of California, San Diego, USA
Short Talk: NADPH Oxidase 1 Promotes the Development of Hepatocellular Carcinoma

Valerie LeBleu, MD Anderson Cancer Center, USA
Short Talk: Functional Role of Tumor Immunity and Fibrosis in Pancreas Cancer

Poster Session 3

THURSDAY, MARCH 30

Halting Fibrosis: Inducing Regression of Fibrosis

***Katalin Susztak**, University of Pennsylvania, USA

Tatiana Kisseleva, University of California, San Diego, USA
Myofibroblast Reversion to an Inactive Phenotype during Regression of Liver Fibrosis

David Lagares, Massachusetts General Hospital, USA
Mitochondrial Priming by Matrix Stiffness Sensitizes Myofibroblasts to BH3 Mimetic-Induced Apoptosis in Scleroderma Fibrosis

Gyongyi Szabo, University of Massachusetts Medical School, USA
Inter-Relationship Between TLR Signaling and Inflammasome Activation in NASH

Jorge Moscat, Sanford Burnham Prebys Institute, USA
Control of Fibrosis and Inflammation by Stromal p62 in Tumor Progression

Holger Willenbring, University of California, San Francisco, USA
Hepatic Reprogramming of Myofibroblasts as a Therapeutic Strategy for Liver Fibrosis

Fiona E. McCann, Oxford University, UK
Short Talk: Localised Inhibition of Histone Acetylation May Offer a Novel Therapeutic Strategy to Down Regulate the Myofibroblast Phenotype in Dupuytren's Disease

New Directions in Patient Evaluation and Treatment

***Gyongyi Szabo**, University of Massachusetts Medical School, USA

Robert Lafyatis, University of Pittsburgh Medical Center, USA
Fibroblast and Macrophage Transcriptomes Indicate Pathogenic Pathways in Systemic Sclerosis

David Shapiro, Intercept Pharmaceuticals, Inc., USA
Therapeutic Bile Acids - Longer Levers in Liver Disease?

Jeremy S. Duffield, Vertex Pharmaceuticals, USA
MicroRNAs as Potential Therapeutic Targets in Fibrotic Diseases

Meeting Wrap-Up: Outcomes and Future Directions (Organizers)

FRIDAY, MARCH 31

Departure