



# Novel Aspects of Bone Biology

June 13–16, 2018 | Cliff Lodge | Snowbird, Utah | USA

## Scientific Organizers:

**Gerard Karsenty**, Columbia University, USA

**David T. Scadden**, Massachusetts General Hospital and Harvard University, USA

*This conference presents recent progress made in two relatively novel areas of skeletal biology not covered by other meetings. The first one is the cross-talk between bone, hematopoiesis and leukemogenesis. The second is the study of the multiple endocrine functions of bone and how their study impacts on our understanding of multiple degenerative diseases. Meetings of bone biology are traditionally dominated by the need to explain the bases and to propose treatments for the most frequent bone disease: osteoporosis. Aside from this very vivid field, two other aspects of bone biology have developed in the last decade. A feature shared by these two aspects of biology is that they link bone biology to multiple other organs and to other functions besides making bones. These two aspects are the dialog between bone and hematopoiesis, whether physiological or pathological, and the endocrine functions of bone. This conference will showcase the many advances made in these two aspects of skeleton biology and how these developments have enriched our understanding of the pathogenesis of multiple degenerative diseases affecting the bone marrow, energy metabolism or the brain. Because of its very nature, this meeting will bring together investigators from different fields rarely provided with an opportunity to meet.*

## Session Topics:

- The Origin of the Osteoblast
- The Bone Marrow Niche
- The Endocrine Function of the Osteoblast
- The Relationship between Bone and Leukemia
- Molecular Genetics of Bone Metastasis
- The Relationship between Bone and the Immune System

**Abstract Deadline for Short Talk Consideration: March 27, 2018**

**Discounted Registration Deadline: April 12, 2018**



Submitting an abstract is an excellent opportunity to gain exposure for your work. Abstracts submitted by the abstract deadline will also be considered for short talks on the program.

Meeting Hashtag: #KSbone  
[www.keystonesymposia.org/18E3](http://www.keystonesymposia.org/18E3)

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# KEYSTONE SYMPOSIA

on Molecular and Cellular Biology

## Novel Aspects of Bone Biology (E3)

June 13-16, 2018 • Snowbird Resort • Snowbird, Utah, USA  
Scientific Organizers: Gerard Karsenty and David T. Scadden

Supported by the Directors' Fund

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### WEDNESDAY, JUNE 13

#### Arrival and Registration

### THURSDAY, JUNE 14

#### Welcome and Keynote Address

\***Christa Maes**, KU Leuven, Belgium

**Daniel E. Lieberman**, Harvard University, USA  
*An Evolutionary Medical Perspective on Bone Disease*

#### The Origin of the Osteoblast

\***Christa Maes**, KU Leuven, Belgium

**Roberta Faccio**, Washington University, USA  
*Bone-Derived Dickkopf-Related Protein 1 (Dkk1) Exerts Immune-Suppressive Effects in Cancer*

**Siddhartha Mukherjee**, Columbia University Medical Center, USA  
*Definition of a Post-Natal Osteoblast Stem Cell*

**Henry M. Kronenberg**, Massachusetts General Hospital, USA  
*Sox9-Expressing Cells Are Progenitors of Osteoblasts, Stromal Cells and Chondrocytes in Mouse Bone*

**Shawon Debnath**, Weill Cornell Medicine, Cornell University, USA  
*Short Talk: Identification of a Novel Periosteal Stem Cell Population that Mediates Intramembranous Bone Formation*

**Constance T. Noguchi**, NIDDK, National Institutes of Health, USA  
*Short Talk: Altered Erythropoietin Signaling Disrupts Bone Marrow Stromal Cell Differentiation*

#### The Bone Marrow Niche

\***Sabina Sangaletti**, Fondazione IRCCS Istituto Tumori Milano, Italy

**David T. Scadden**, Massachusetts General Hospital and Harvard University, USA  
*Defining (and applying) The Bone Marrow Niche*

**Sean J. Morrison**, University of Texas Southwestern Medical Center, USA  
*The Maintenance of the Adult Skeleton*

**Paul S. Frenette**, Albert Einstein College of Medicine, USA  
*Neural Regulation of the Aging Bone Marrow Niche*

**John Chute**, University of California, Los Angeles, USA  
*Bone Marrow Osteolineage Cells Regulate Hematopoietic Regeneration via Secretion of Dkk1*

#### Poster Session 1

### FRIDAY, JUNE 15

#### The Endocrine Function of the Osteoblast

\***Mathieu Ferron**, Institut de Recherches Cliniques de Montréal, Canada

**Gerard Karsenty**, Columbia University Medical Center, USA  
*Osteocalcin Is Necessary and Sufficient to Mount an Acute Stress Response*

**Aline Bozec**, University of Erlangen, Germany  
*High-Fat Diet and Microbiota Control the Bone Marrow Niche and Hematopoietic Stem Cell Differentiation*

**Seiji Fukumoto**, Tokushima University, Japan  
*The Biology of FGF23*

**Yihong Wan**, University of Texas Southwestern Medical Center, USA  
*Endocrine and Metabolic Regulation of Osteoclastogenesis*

**Omar Al Rifai**, Clinical Research Institute of Montreal, IRCM, Canada  
*Short Talk: Proprotein Convertase Furin is a Novel Pleiotropic Regulator of Bone Endocrine Functions*

**Julian Berger**, Columbia University Medical Center, USA  
*Short Talk: Osteocalcin Signaling in the Adrenal Cortex is Necessary for Steroid Hormones Biosynthesis and Adrenal Gland Growth*

#### The Relationship between Bone and Leukemia

\***Lev Silberstein**, Fred Hutchinson Cancer Research Center, USA

**Emmanuelle Passegué**, Columbia University, USA  
*Aging of Stem Cells and Leukemogenesis*

**Stavroula Kousteni**, Columbia University, USA  
*The Osteoblast as an Inducer of Leukemogenesis*

**Stéphane J. C. Mancini**, INSERM, France  
*Short Talk: Hematopoietic Stem Cells and Early B Cells Form Specific Interaction Networks with A Unique Peri-Sinusoidal Stromal Cell Niche in the Bone Marrow*

**Annas Al-Sharea**, Baker IDI Heart and Diabetes Institute, Australia  
*Short Talk: Cholinergic Regulation of Bone Marrow Vascular Microenvironment Influences Hematopoietic Stem Cell Mobilization*

#### Poster Session 2

### SATURDAY, JUNE 16

#### Molecular Genetics of Bone Metastasis

\***Patricia Ducy**, Columbia University, USA

**Yibin Kang**, Princeton University, USA  
*The Role of Bone Stromal Niches in the Seeding, Outgrowth and Treatment Resistance of Bone Metastasis*

**Theresa A. Guise**, Indiana University, USA  
*Systemic Effects of the Tumor-Bone Microenvironment: Mechanisms and Therapeutic Approaches*

**G. David Roodman**, Indiana University, USA  
*The Pathogenesis of Multiple Myeloma*

**Camilla Engblom**, Massachusetts General Hospital, USA  
*Lung Tumors Talk to Bones and Bones Answer Back*

**Aaron E. Chiou**, Cornell University, USA  
*Short Talk: Investigating Pre-Metastatic Alterations of Bone Extracellular Matrix*

#### The Relationship between Bone and the Immune System

**Hiroshi Takayanagi**, University of Tokyo, Japan  
*Interaction between Bone and the Immune System*

**Rheinallt M. Jones**, Emory University, USA  
*The Influence of the Gut Microbiota on Bone Metabolism: In Pursuit of Mechanisms*

**Ralf H. Adams**, Max Planck Institute for Molecular Biomedicine, Germany  
*Blood Vessel Growth, Function and Aging in the Skeletal System*

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

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**SUNDAY, JUNE 17**

**Departure**