

# The 37<sup>th</sup> International Sun Valley Workshop on Skeletal Tissue Biology

## Foreword

The 37<sup>th</sup> International Sun Valley Workshop on Skeletal Tissue Biology was held August 5-8, 2007. There were 93 Workshop attendees representing a wide range of clinical, basic science and social science disciplines.

The W.S.S. Jee Remodeling in Bone (RIB) Award was given to Dr. David Baylink, who spoke about "The IGF System in the Rise and Fall in Bone Density with Age". This presentation generated lively discussion, and comments made by Dr. Baylink about IGF were revisited throughout the Workshop. The plenary lecture was followed by a poster session that highlighted posters from the eleven young investigators who received the Alice L. Jee Memorial Travel Award. The Workshop program was also highlighted by podium talks on Monday evening from six young investigators who were selected winners of the ASBMR/Harold M. Frost Young Investigator Awards, which came with a \$1,500 prize (supported in part by the ASBMR) and certificate.

Besides training, a primary focus of the Workshop has been on the interaction of younger and more senior investigators. For the 38<sup>th</sup> Workshop next year (2008), we will expand the mentorship program established at the 30th Workshop in 2000. This program requires the younger scientists who have received awards to share lunch with a senior investigator of their choice. The lunches at the Sun Valley lodge are paid for by the Workshop to allow for this exchange. In 2008, we will expand this to those young investigators who express a desire (at the time of registration) for such interaction with senior investigators. We expect to provide as many as 35 vouchers for mentor luncheons.

At the 37<sup>th</sup> Workshop, sessions were presented on Primary Cilia (Chris Jacobs, Chair), Dmp1 and Phosphate Regulation (Charles Turner and Anne George, Chairs), Tissue Engineering (Robert Guldberg and Kevin Healey, Chairs), Aging and Osteoporosis (Steve Cummings, Chair) and Osteonecrosis and ONJ (Harry Kim, Chair). Again, in keeping with our desire to provide content especially for the younger investigators, Dr. Nancy Lane presented information on the US Bone and Joint Decade's initiatives for Young Investigators. For those who were unable to attend this year, this information can be found on the US Bone and Joint Decade website: [www.usbjd.org](http://www.usbjd.org).

The Workshop was supported by grants from the National Institutes of Health (NIAMS, NIDCR and NICHD) and the Orthopaedic Research and Education Foundation (OREF). In addition, contributions from industry came from pharmaceutical concerns (Alliance for Better Bone Health; Amgen; Eli Lilly and Co.; Pfizer Global Research and Development; Wyeth-Ayerst Pharmaceuticals; Merck); contract research companies (MDS Pharma Services, Charles River Laboratories) and manufacturers of imaging and diagnostic equipment and services (Immunodiagnostic Systems Inc., Micro Photonics Inc., Osteometrics; and Scanco USA, Inc).

The 38<sup>th</sup> International Sun Valley Workshop will be held August 3-6, 2008, and will expand into areas of musculoskeletal biology beyond bone, including Chondrocyte Biology and Muscle Biology. Additional sessions are planned for The Genetics of Osteoporosis, Nanomechanics of Bone, and Bone as an Endocrine Organ. We are excited to announce that Dr. Lance Lanyon will receive the W.S.S. Jee Remodeling in Bone (RIB) Award for his long-standing contributions to our understanding of bone biology and to the interface between bone mechanics and biology. Dr. Lanyon will give the plenary lecture.

Finally, we are planning an NIH Workshop on Funding for Young Investigators in 2008. This workshop will be presented by representatives from the National Institute of Arthritis, Musculoskeletal and Skin Diseases, and promises to be of significant value not just to the younger investigators whom it targets, but even to those veterans who may want some handy tips to improve their scores in this age of increasing competitiveness.

These are all important reasons to attend the Workshop in 2008. We hope to see you there!

**David B. Burr, PhD**

Organizer and Director  
37<sup>th</sup> International Sun Valley Workshop  
on Skeletal Tissue Biology  
Associate Editor of JMNI

## 37<sup>th</sup> International Sun Valley Workshop On Skeletal Tissue Biology

August 5-8, 2007, Sun Valley, Idaho, USA

### *Sunday Morning (8 am-Noon)*

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#### **Primary Cilia**

(Chair: **Chris Jacobs**)

1. The primary cilium: What once did nothing, now does everything - **Tim Stearns**, Stanford University
2. Shaping up and shipping out - **Jill Helms**, Stanford University
3. Primary cilia in bone - **Chris Jacobs**, Stanford University
4. Intraflagellar transport in skeletal development - **Rosa Serra**, University of Alabama

### *Sunday Evening (7:30 pm-10 pm)*

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#### **RIB Award/Plenary Session**

**The Role of IGF System in the Rise and Fall in Bone Density with Age (David Baylink, Loma Linda University)**

*[Poster Viewing followed the Plenary Session]*

### *Monday Morning (8 am-Noon)*

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#### **DMP1 and Phosphate Regulation**

(Co-Chairs: **Charles Turner** and **Anne George**)

1. DMP1 - a key regulator in mineralized matrix formation - **Anne George**, University of Illinois, Chicago
2. Use of the transgenic approach to determine the role of DMP1 in phosphate regulation - **Jerry Feng**, Baylor School of Dentistry
3. The role of DMP1 in autosomal recessive hypophosphatemic rickets - **Ken White**, Indiana University
4. DMP1 and MEPE expression are elevated in osteocytes after mechanical stimulation *in vivo*: Theoretical role in controlling mineral quality in the perilacunar matrix - **Steve Harris**, University of Texas, San Antonio

*Presentation on the US Bone and Joint Decade/Young Investigators Workshop - Nancy Lane, UC Davis*

### *Monday Evening (7:30 pm-10 pm)*

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#### **Presentations by ASBMR/Harold M. Frost Award Recipients**

1. Heritability of lumbar trabecular bone mechanical properties in baboons - **Lorena Havill**, Southwest Foundation for Biomedical Research
2. A homozygous missense mutation in human *KLOTHO* causes severe tumoral calcinosis - **Shoji Ichikawa**, Indiana University
3. Pericyte/myofibroblast phenotype of osteoprogenitor cell - **Ivo Kalajzic**, University of Connecticut Health Center
4. Ror2, a novel modulator of osteogenesis - **Yan Liu**, Wyeth Research

5. A chemical and engineering approach towards "smart" synthetic bone grafts - **Jie Song**, University of Massachusetts
6. ATF4 is a key molecule linking food intake and skeletal development - **Hideaki Sowa**, Columbia University

### *Tuesday Morning (8 am-Noon)*

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#### **Tissue Engineering**

(Chairs: **Kevin Healy** and **Robert Gulberg**)

1. Gene therapy strategies for craniofacial tissue engineering - **Paul Krebsbach**, University of Michigan
2. Biointerfaces promoting tissue healing - **Andres Garcia**, Georgia Institute of Technology
3. Biologic augmentation of polymer scaffolds for bone repair - **Robert Gulberg**, Georgia Institute of Technology
4. Extracellular matrix elasticity directs stem cell differentiation - **Adam Engler**, Princeton University
5. Designer biomaterials: Too much information? - **Kevin Healy**, UC Berkeley

### *Wednesday Morning (8 am-Noon)*

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#### **Aging and Osteoporosis**

(Chair: **Steve Cummings**)

1. The (brief) epidemiology and biology of aging - **Steve Cummings**, San Francisco Coordinating Center
2. Aging and fragility of bone - **Charles Turner**, Indiana University
3. Aging and sarcopenia - **David Thompson**, Pfizer Global Research & Development
4. Vascular calcification - **Linda Demer**, University of CA, Los Angeles
5. Aging and falls: Causes and prevention - **Steve Lord**, Prince of Wales Medical Research Institute, Australia

### *Wednesday Evening (7:30 pm-10 pm)*

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#### **Osteonecrosis ONJ**

(Chair: **Harry Kim**)

1. Introduction to osteonecrosis of the femoral head (OFH) and osteonecrosis of the jaw (ONJ) - **Harry Kim**, Shriners Hospital, Tampa
2. Summary of ASBMR Task Force on ONJ - **David Burr**, Indiana University
3. Distinguishing features of the oral cavity and its predisposition to osteonecrosis - **Laurie McCauley**, University of Michigan
4. Animal models of osteonecrosis of the jaw - **Matt Allen**, Indiana University