New Approaches to Musculoskeletal Tissue Regeneration, Quality, and Targeting

Workshop Agenda

*This is a tentative agenda and is subject to change.

Wednesday, July 24

3:00 PM – 5:30 PM
Registration Open

7:00 PM –10:00 PM
Welcome Reception

Thursday, July 25

7:00 AM-7:30 AM
Available Industry Breakfast Session presented by TBD

*Title TBD*
Presenter: TBD

8:00 AM–8:10 AM
Welcome
8:10 AM–9:15 AM

**Plenary Session: The Remodeling in Bone (RIB) Award and Presentation**

Rib Awardee: David Burr, PhD, Indiana University School of Medicine

*How Basic Science can Result in Clinical Insights*

9:30 AM-10:00 AM

**Blue Ribbon Sun Valley Posters**

Chair: Teresita Bellido, PhD, Indiana University

10:15 AM–12:00 PM

**Session: Tendon Biology and Disease**

Session Chair: Alayna Loiselle, PhD, University of Rochester Medical Center

*Mechanisms of Tendon Regeneration*

Alice Huang, PhD, Icahn School of Medicine at Mount Sinai

*Cellular Basis of Tendon Regeneration*

Alayna Loiselle, PhD, University of Rochester Medical Center

*Engineering Tissue Integration*

Helen H. Lu, PhD, Columbia University

2:00 PM-4:00 PM

**Volleyball**

7:30 PM-8:00 PM

**Blue Ribbon Sun Valley Posters**

Chair: Alexander Robling, PhD, Indiana University

8:00 PM–10:00 PM

**Poster Session** (wine and cheese)
Friday, July 26

7:00 AM-7:30 AM
Available Industry Breakfast Session presented by TBD

Title TBD
Presenter: TBD

8:00 AM–9:00 AM
ASBMR/Harold M. Frost Young Investigator Awards Presentations
Chair: Teresita Bellido, PhD, Indiana University

9:15 AM–12:00 PM
Session: Major Methodologies: Material Properties and Tissue Quality - State of the Art
Chair: David Burr, PhD, Indiana University

Introduction – What are the Physical Attributes of Bone Tissue Properties?
David Burr, PhD, Indiana University

Measuring Bone’s Structure and Mechanical Behavior at Multiple Length Scales
Elizabeth Zimmerman, PhD, Shriners Hospital for Children

Measuring Multi-Scale Relationships between Bone Structure, Chemistry and Function and Their Importance to Skeletal Fragility
Virginia Ferguson, PhD, University of Colorado

Does Loss and Modification of Collagenous and Non-Collagenous Proteins Affect Fracture Risk? Tools, Assays and Disease Models
Deepak Vashishth, PhD, Rensselaer Polytechnic Institute

Reducing Fracture Risk by Acellular Manipulation of Bone Tissue Properties
David Burr, PhD, Indiana University
1:30 PM – 3:30 PM

**Career Development Workshop**

*Career Transitions: Planning and Negotiating for Career Advancement*

Marjolein van der Meulen, PhD, Cornell University, Chair

7:30 PM–9:30 PM

**Session: Rare Diseases of Phosphate Handling and Tissue Mineralization: Too Much or Too Little**

Chair: Javier San Martin, Ultragenyx, Inc.

*Introduction to Phosphate Metabolism*

Javier San Martin, Ultragenyx, Inc.

*From Therapeutics Target Identification to Drug Development, with an Anti-FGF23 Antibody, Burosumab*

Javier San Martin, Ultragenyx, Inc.

*Targeting a Unique Pathophysiology for Improved Outcomes in X-linked Hypophosphatemia*

Thomas Carpenter, MD, Yale University

*Pathogenic Mechanisms and Therapeutic Targets for Multiple Osteochondroma, a Pediatric Musculoskeletal Disorder*

Maurizio Pacifici, PhD, Children’s Hospital of Philadelphia

---

**Saturday, July 27**

7:00 AM-7:30 AM

Available Industry Breakfast Session presented by TBD

*Title TBD*

Presenter: TBD

8:00 AM–9:00 AM

**ASBMR/Harold M. Frost Young Investigator Awards Presentations**

Chair: Alexander Robling, PhD, Indiana University
9:15 AM–12:00 PM

**Session: Epigenetics and Musculoskeletal Disease**
Session Chair: Regis J. O’Keefe, MD, PhD, Washington University

*Brief Overview of Epigenetics*
Regis J. O’Keefe, MD, PhD, Washington University

*Histone Deacetylase 3 in Cartilage Development and Osteoarthritis*
Jennifer J. Westendorf, PhD, Mayo Clinic

*Defining DNMT3b and Downstream Targets in the Pathogenesis of Osteoarthritis*
Regis J. O’Keefe, MD, PhD, Washington University

*Genome-wide DNA Methylation Changes in Mice under Simulated Microgravity Conditions*
Mario Fraga, University of Oviedo

1:30 PM – 4:00 PM

**FDA Workshop**
Chair: Jose Moreno, PhD, FDA

The workshop will provide the audience with an overview of the various mechanisms available to obtain FDA feedback regarding the potential regulatory pathway ahead for any products resulting from their research efforts. This information is of special interest for researches applying to the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) funding programs, where such regulatory information can have a larger impact in the funding process. Attendees will gain key knowledge regarding the current regulatory pathways for device, drug, biological and combination products, and the mechanisms available to present the results of their research efforts to FDA.

6:00 PM – 8:00 PM

**Banquet**

**Sunday, July 28**
7:00 AM-7:30 AM
Available Industry Breakfast Session presented by TBD

*Title TBD*
Presenter: TBD

8:00 AM–9:00 AM
**ASBMR/Harold M. Frost Young Investigator Awards Presentations**
Chair: Teresita Bellido, PhD, Indiana University

9:15 AM-12:00 PM
**Session: Musculoskeletal Regenerative Medicine Meets the Clinic**
Chair: Lisa Larkin, PhD, University of Michigan

*Bridge Enhanced ACL Repair: from Concept to Clinical Trial*
Braden Fleming, PhD, Rhode Island Hospital/Warren Alpert Medical School of Brown University

*Rotator Cuff Healing: Gaps in Knowledge, Progress and Opportunities*
Kathleen Derwin, PhD, Cleveland Clinic

*A Tissue Engineering Approach to Repair Volumetric Muscle Loss*
Lisa Larkin, PhD, University of Michigan

12:30 PM – 5:00 PM
**Guided Hikes**

7:30 PM – 9:30 PM
**Session: Targeting Musculoskeletal Tissues**
Session Chair: Brendan Boyce, MD, University of Rochester Medical Center

*Introduction to Targeting Strategies*
Brendan Boyce, MD, University of Rochester Medical Center
Targeting Chloroquine and Hydroxychloroquine to Bone to Increase Bone Mass
Brendan Boyce, MD, University of Rochester Medical Center

Genome Engineering of New Stem Cell Therapies for Arthritis
Farshid Guilak, PhD, Washington University

Bone-targeting Bortezomib in Pre-clinical Myeloma Studies
Lianping Xing, PhD, University of Rochester Medical Center