



ORS 49th International Musculoskeletal Biology Workshop
Snowbird, Utah

Saturday, July 23, 2022

3:00 PM – 5:30 PM	Registration Open
7:00 PM – 10:00 PM	Networking Reception

Sunday, July 24, 2022

7:00 AM – 8:00 AM	Breakfast (Provided)
8:00 AM – 8:10 AM	Welcome from the Workshop Co-Directors Teresita Bellido (<i>University of Arkansas for Medical Sciences</i>) & Alex Robling (<i>Indiana University</i>)
8:10 AM – 9:10 AM	Welcome & Plenary Session: (RIB) Award and Presentation: The Power of 1G: Disuse Bone and Muscle Loss Rib Awardee: Susan Bloomfield (<i>Texas A&M</i>)
9:15 AM – 10:00 AM	Blue Ribbon Posters Chair: Teresita Bellido
10:00 AM – 10:15 AM	Stretch Break
10:15 AM – 12:00 PM	Session: Osteocytes: from Biology to Pathophysiology Chair: Natalie Sims (<i>St. Vincent's Institute Medical Research</i>) <ul style="list-style-type: none"> • Joel Boerckel (<i>University of Pennsylvania</i>); Hezekiah's Tunnels: Development and Remodeling of the Canalicular System • Liyun Wang (<i>University of Delaware</i>); Osteocytic Pericellular Tethers in Mechanosensing • Natalie Sims; Osteocytic Control of Bone Mineralisation

12:00 PM – 2:00 PM	Lunch (On Your Own)
2:00 PM – 4:00 PM	Recreation
4:00 PM – 7:00 PM	Dinner (On Your Own)
7:00 PM – 10:00 PM	Poster Session and Reception (Appetizers & Cocktails Provided)

Monday, July 25, 2022

7:00 AM – 8:00 AM	Registration Breakfast (Provided)
	<ul style="list-style-type: none"> Aris Economides (<i>Regeneron</i>); Targeted-ERT for Lysosomal Disorders of the Musculoskeletal System
8:00 AM – 9:00 AM	ASBMR/Harold M. Frost Young Investigator Award Presentations Chair: Teresita Bellido
9:00 AM – 9:15 AM	Stretch Break
9:15 AM – 12:00 PM	Session: Autologous-Autogenous Treatments for Musculoskeletal Disease Chair: Steven Charlebois (<i>MED Institute</i>) <ul style="list-style-type: none"> Neven Steinmetz (<i>Regenexx</i>); Using Orthobiologic Tools to Treat Diseases and Injuries of the Knee Chelsea Bahney (<i>Steadman-Philippon Institute</i>); Platelet Rich Plasma and Mesenchymal Stem Cells: Harnessing Synergistic Effects to Improve Fracture Healing Lara Silverman (<i>LIS BioConsulting, LLC</i>); Development and Approval of Autologous Cell-Based Therapies
12:00 PM – 1:00 PM	Lunch (On Your Own)
1:00 PM – 2:30 PM	Career Development Workshop: The Pandemic: Impacts, Silver Linings, and Recovery Chairs: Marjolein van der Meulen (<i>Cornell University</i>) and Sherry Liu (<i>University of Pennsylvania</i>)
2:30 PM – 4:00 PM	Recreation
4:00 PM – 7:00 PM	Dinner (On Your Own)

7:30 PM – 9:30 PM

Session: Advances in Optical Imaging of Musculoskeletal Tissues

Chair: Sarah Calve (*University of Colorado*)

- Masaru Ishii (*Osaka University*); Intravital Imaging of Live Bone Cells In Vivo
- Warren Grayson (*Johns Hopkins University*); Neurovascular Imaging in the Murine Calvarium
- Sarah Calve; Visualization of the Extracellular Matrix at Developing Tissue Interfaces

Tuesday, July 26, 2022

7:00 AM – 8:00 AM

Breakfast (Provided)

Registration

8:00 AM – 9:00 AM

ASBMR/Harold M. Frost Young Investigator Award Presentations

Chair: Alex Robling

9:00 AM – 9:15 AM

Stretch Break

9:15 AM – 12:00 PM

Session: Novel Pathways in Immune Regulation of Bone Remodeling

Chair: Iannis Adamopoulos (*Beth Israel Medical Deaconess Center, Harvard Medical School*)

- Ellen Gravallesse (*Brigham and Women's, Harvard University*); Role of the STING Pathway in Bone Homeostasis
- Joseph Lorenzo (*UConn Health*); Studies of Osteoclast Precursors in Health and Disease
- Matthew Greenblatt (*Cornell Weill*); Identification of a Vertebral Stem Cell
- Iannis Adamopoulos; The IL-23/IL-17 Axis in Bone Remodeling

12:00 PM – 1:00 PM

Lunch (On Your Own)

1:00 PM – 2:30 PM

Career Development Workshop by and to Early-career Investigators: First job after training: how to get the job, what works and what does not?

Chairs: Annemarie Lange (*University of Pennsylvania*) and Neha Dole (*University of Arkansas for Medical Sciences*)

2:30 PM – 4:00 PM

Recreation

6:00 PM – 8:00 PM

Awards and Recognition Banquet (Dinner Provided)

Wednesday, July 27, 2022

7:00 AM – 8:00 AM

Breakfast (Provided)

	Registration
8:00 AM - 9:00 AM	ASBMR/Harold M. Frost Young Investigator Award Presentations Chair: Teresita Bellido
9:00 AM – 9:15 AM	Stretch Break
9:15 AM - 12:00 PM	Session: Skeletal Aging and the Development of Senolytic Therapies Chair: Richard F. Loeser, Jr (<i>University of North Carolina, Chapel Hill</i>) <ul style="list-style-type: none"> • Jennifer Elisseeff (<i>John Hopkins</i>); Joint Tissue Senescence in Osteoarthritis • Sundeep Khosla (<i>Mayo Clinic</i>); Targeting Cellular Senescence to Treat Age-Related Bone Loss and Frailty • Maria Schuller Almeida (<i>University of Arkansas for Medical Sciences</i>); NAD+ Metabolism in Bone: Crosstalk with the Wnt Pathway and Senescence
12:00 PM – 1:00 PM	Lunch (On Your Own)
1:00 PM – 5:00 PM	Recreation Dinner (On Your Own)
7:30 PM – 9:30 PM	Session: Mechanobiology of Musculoskeletal Tissues Chair: Alice Huang (<i>Columbia University</i>) <ul style="list-style-type: none"> • Christopher Hernandez (<i>Columbia University</i>); Mechanobiology in the Microbiome and Infection, • Tamara Alliston (<i>University of California, San Francisco</i>); Multiscale Mechanobiology of TGF-beta Signaling in the Skeleton • Alice Huang; Mechanobiology of Tendon Differentiation