



## **2023 ORS Musculoskeletal Biology Workshop** **Zermatt, Utah; 22-27 July 2023**

**Musculoskeletal cells: identity, targeting, stimulation, and manipulation for therapeutic gain**

### **Saturday, July 22, 2023**

**3:00 PM – 5:30 PM Registration**

**7:00 PM – 10:00 PM Networking Reception – 50<sup>th</sup> anniversary celebration**

### **Sunday, July 23, 2023**

**7:00 AM – 8:00 AM Breakfast**

**8:00 AM – 8:10 AM Welcome from the Workshop Co-Directors**

**Teresita Bellido (University of Arkansas for Medical Sciences) and Alex Robling (Indiana University)**

**8:10 AM – 9:10 AM Session: RIB Award and Lecture, Marjolein Van Der Meulen (Cornell University)**

**9:15 AM – 9:50 AM Blue Ribbon Posters. Chair: Teresita Bellido (UAMS)**

**9:50 AM – 10:00 AM Break**

**10:00 AM – 12:00 PM Session: New insights into osteoarthritis pathogenesis from single-cell-omic technologies.**

**Chair: Gabriela Loots (University of California-Davis)**

- **Introduction to osteoarthritis: basic biology and clinical presentation (Gaby Loots, UC-Davis)**
- **Synovial fibroblasts as key effector cells of PTOA (Tristan Maerz, Michigan)**
- **Cell atlas in healthy and arthritic synovial joint tissues (Martin Lotz, Scripps)**
- **Single cell analysis identifies strain specific differences in immune populations associated with resistance to PTOA (Gaby Loots, UC-Davis)**

**2:00 PM – 4:00 PM Recreation**

**4:00 PM – 7:00 PM Dinner**

**7:00 PM – 10:00 PM Poster Session and Poster Reception**

### **Monday, July 24, 2023**

**7:00 AM – 8:00 AM Breakfast**

**8:00 AM – 9:00 AM ASBMR Harold M. Frost Young Investigator Award Presentations. Chair: Teresita Bellido (UAMS)**

**9:00 AM – 9:15 AM Break**

**9:15 AM – 12:00 PM Session: Skeletal Stem/progenitor cells. Chair: Ivo Kalajzic (University of Connecticut)**

- **Introduction to stem progenitor cells (Ivo Kalajzic, UConn)**
- **Different stem cells for different bones/functions? (Matthew Greenblatt, Weill-Cornell/HSS)**
- **Stem Cells and Maintenance of the Adult Skeleton (Sean Morrison, UT-Southwestern)**
- **Skeletal stem progenitor cells and bone remodeling (Ling Qin, UPenn)**
- **Conclusions/wrap-up (Ivo Kalajzic, UConn)**

**12:00 PM – 1:00 PM Lunch**



**1:00 PM – 2:30 PM Career Development Workshop: Postdoctoral training and junior investigators opportunities in academia: the vision of funding agencies NIH, NSF, VA funding systems. M. Van Der Meulen (Cornell) and Ed Guo (Columbia University), co-chairs**

**2:30 PM – 4:00 PM Recreation**

**4:00 PM – 7:00 PM Dinner**

**7:15 PM – 9:30 PM Session: Imaging Mechanobiology at Work. Chair: Ralph Müller (ETH Zurich)**

- Introduction: Mechanobiology in health and disease (Ralph Müller, ETH Zurich)
- Imaging Mechanobiology at the Cell Level in Basic Sciences (Karl Lewis, Cornell)
- Imaging Mechanobiology at the Tissue Level in Translational Sciences (Ralph Müller, ETH Zurich)
- Imaging Mechanobiology at the Organ Level in Clinical Sciences (Karen Troy, Worcester Polytech)

## **Tuesday, July 25, 2023**

**7:00 AM – 8:00 AM Breakfast**

**8:00 AM – 9:00 AM ASBMR Harold M. Frost Young Investigator Award Presentations. Chair: Alexander Robling (IU)**

**9:00 AM – 9:10 AM Break**

**9:10 AM – 12:00 PM Session: Osteoclasts: origin and fate. Chair: Michelle McDonald (Garvan Institute/University of Sydney)**

- Introduction to osteoclast biology (Michelle McDonald, Garvan/USydney)
- Osteoclast precursors and beyond - bone and immune functions (Kyung-Hyun Park-Min, HSS)
- Osteoclasts and macrophages: origin, function and maintenance (Frederic Geissman, Sloan Kettering)
- Osteoclast dynamics: function and fate (Sarah Dallas, UMKC)

**12:00 PM – 1:00 PM Lunch**

**1:00 PM – 2:30 PM Career Development Workshop by and to Early/Mid-career Investigators: I got my first faculty job, with good startups, and now what? Annemarie Lang (U Penn) and Blaine Christiansen (UC Davis), co-chairs**

**2:30 PM – 4:00 PM Recreation**

**6:00 PM – 8:00 PM Awards and Recognition Banquet**

## **Wednesday, July 26, 2022**

**7:00 AM – 8:00 AM Breakfast**

**8:00 AM – 9:00 AM ASBMR Harold M. Frost Young Investigator Award Presentations. Chair: Teresita Bellido (UAMS)**

**9:00 AM – 9:10 AM Break**

**9:15 AM – 12:00 PM Session: Connective tissue targeting: delivering molecules to musculoskeletal tissues. Chair: Danielle Benoit (University of Oregon)**

- Introduction to skeletal targeting (Danielle Benoit, Oregon)
- Impact of bone-targeted therapies on bone health (Jesús Delgado-Calle, UAMS)
- Engineering targeted therapies for joint injury and osteoarthritis (Blanka Sharma, Florida)
- Precision medicine strategies to improve bone regeneration (Danielle Benoit, Oregon)

**12:00 PM – 1:00 PM Lunch**

**1:00 PM – 7:00 PM Recreation and Dinner**



**7:15 PM – 9:30 PM Session: How the Molecular Pathophysiology of Rare Bone and Mineral Diseases Informs Treatment and Biology. Chair: Michael Collins (NIDCR/NIH)**

- Introduction and goals of the session (Michael Collins, NIDCR/NIH)
- FGF23 Deficiency and Tumoral Calcinosis: How Pathophysiology Informs Physiology and Treatment (Michael Collins, NIDCR/NIH)
- Fibrous dysplasia/McCune-Albright syndrome: interplay of osteoclast/osteoblast function (Alison Boyce, NIDCR/NIH)
- Lessons from fibrodysplasia ossificans progressive (FOP): rethinking ACVR1-mediated signaling and its physiological roles, and developing disease-modifying therapies (Aris Economides, Regeneron)

**Thursday, July 27, 2022**

**Departures**

**TB/AR 3-13-2023**