

2027 AIMM Sessions

Rare Musculoskeletal Diseases (Clinical): Rare musculoskeletal disorders present unique challenges for diagnosis, treatment, and research due to their complex genetic and molecular underpinnings. This session will explore recent advances in understanding the pathophysiology of these conditions, emerging therapeutic strategies, and the critical role of patient advocacy in accelerating research and clinical translation. Experts will discuss how collaborative efforts between clinicians, scientists, and advocacy organizations are shaping the future of care for rare musculoskeletal diseases.

Spatial OMICs in MSK (Basic Science/Translational): Spatial OMICs technologies are revolutionizing musculoskeletal research by enabling high-resolution mapping of cellular and molecular interactions within bone and cartilage. This session will highlight cutting-edge applications of spatial transcriptomics and proteomics to uncover tissue heterogeneity and microenvironmental cues that govern skeletal health and disease. Speakers will also address integration with imaging and morphometric analysis, as well as future directions for applying these tools to advance precision musculoskeletal medicine and bone regeneration.

Brain and Bone (Clinical/Translational): Emerging evidence reveals intricate communication between the central nervous system and skeletal tissues, with implications for aging, metabolic health, and disease. This session will examine neuro-skeletal signaling pathways, clinical observations linking brain health and bone metabolism, and experimental models that illuminate mechanisms of cross-talk. Experts will discuss how these insights may inform novel therapeutic strategies targeting neural regulation of bone.

Longevity and Bone Agents (Clinical/Translational): As life expectancy increases, maintaining skeletal health in aging populations is a critical challenge. Here we will explore the biology of aging as it relates to bone remodeling and fracture risk, review current and emerging pharmacologic agents for osteoporosis and age-related bone loss, and discuss strategies to optimize therapeutic interventions for older adults. Presentations will emphasize translational approaches to improve bone health and quality of life in the context of longevity.

Cardiovascular and Bone (Clinical/Translational): Cardiovascular and skeletal systems share common signaling pathways and risk factors, creating complex interdependencies in health and disease. This session will examine recent discoveries linking vascular calcification and bone remodeling, explore molecular mechanisms underlying these associations, and consider clinical implications for integrated management of cardiovascular and musculoskeletal disorders. Experts will highlight opportunities for cross-disciplinary research to improve outcomes in patients with comorbid conditions.

Proposed 2027 AIMM Session Speakers

Date/Time	Session, Speakers and Titles	Session Chairs
Mon, April 5, 4:30-7:00pm	Session 1: Rare Musculoskeletal Diseases Kathryn Dahir, MD (Vanderbilt University) <i>Innovations in Managing Rare Bone Disorders: Translating Molecular Insights into Care</i> Aris Economedes (Regeneron) <i>TBD</i>	Murat Bastepe Harvard University (YI 2000) Former YI (TBD)
Tues, April 6, 7:00-9:45am	Session 2: Bone Regeneration and Spatial OMICs Ralph Muller, PhD (ETH Zurich) <i>Spatial Mechanomics of Bone Repair: Unraveling Molecular Responses to Mechanical Loading in Fracture Healing</i> Joel Boerckel, PhD (University of Pennsylvania) <i>Spatiotemporal Mapping of Bone Marrow Oxygen</i>	Randee Hunter Ohio State University Marta Diaz del Castillo Aarhus Univ (YI 2024)
Tues, April 6, 3:00-4:15	Meet-the-Professor: TBD	
Tues, April 6, 4:30-7:00pm	Session 3: John Haddad Young Investigators ASBMR Young Investigators (n = 5)	Gabriel Pagnotti MD Anderson (YI 2019)
Wed April 7, 7:00-9:45am	Session 4: Brain & Bone Erica Scheller, DDS, PhD (Washinton Univ, St. Louis) <i>Neuro Signals and Skeletal Health</i> Frances Milat, MD (Monash University) <i>Hormonal and Neural Pathways Linking Brain Health and Bone Metabolism</i>	Rachelle Johnson Vanderbilt University (YI 2015) Former YI (TBD)
Wed, April 7, 3:00-4:15pm	Meet-the-Professor: Marja Hurley, Univ Connecticut, <i>Bone Loss Associated with Sickle Cell Disease</i> ; Joel Boerckel, Univ Pennsylvania, <i>Skeletal Regeneration</i>	
Wed, April 7, 4:30-7:00pm	Session 5: Longevity and Bone Agents Sundeep Khosla, MD (Mayo Clinic) <i>Optimizing Bone Health in Aging: Current and Emerging Therapeutic Strategies</i> Joshua Farr, PhD (University of Arizona) <i>Longevity and Skeletal Integrity: Mechanistic Insights and Clinical Implications</i>	John Wysolmerski Yale University Former YI (TBD)
Thurs, April 8, 7:00-9:45am	Session 6: Young Investigators & Late Breaking Topics (Basic & Translational) • YI (n=2) and presenters and titles finalized at the meeting	Jialiang Wang UT Southwestern (YI 2022)
Thurs, April 8, 3:00-4:15pm	Meet-the-Professor: Thomas Ambrosi (YI 2022), UC Davis, <i>Starting your New Lab</i>	
Thurs, April 8, 4:30-6:00pm	Session 7: Cardiovascular and Bone Dwight Towler, MD, PhD (University of Missouri) <i>Shared Pathways in Vascular Calcification and Bone Remodeling: Translational Perspectives</i> David Harrison, MD (Vanderbilt University) <i>Cardiovascular Risk and Skeletal Health: Exploring Molecular Intersections</i>	Joy Wu Stanford University (YI 2008) Former YI (TBD)
Fri, April 8, 7:00-9:45am	Session 8: Late Breaking Topics (Clinical) Presenters and titles finalized at the meeting	Diana Athonvarangkul Yale University (YI 2023)