



MINNESOTA  
MEDICAL  
ASSOCIATION

## AIMM 2024 PROGRAM

The purpose of this conference is to bring scientists and clinicians together in a format of open verbal communication that permits the translation of basic science advances into clinical concepts. Physicians and scientists working in the field of bone and mineral metabolism are encouraged to participate.

This activity has been planned and implemented in accordance with the accreditation requirements and policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint providership of the Minnesota Medical Association and AIMM. The Minnesota Medical Association (MMA) is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

The Minnesota Medical Association designates this live activity for a maximum **9** PRA Category 1 Credit(s)<sup>™</sup>. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

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**NIH SUPPORT:**

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**AIMM FOUNDERS LECTURE FUND**

**JOHN FRANKLIN HUBER ENDOWMENT**

**JOHN HADDAD FAMILY**



**PRIVATE DONORS (Thank You!!)**

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## 2024 AIMM-ASBMR John Haddad Young Investigator Awardees



*Above, from left to right:*

Cora Best, PhD, University of Florida  
Evan Buettmann, PhD – Virginia Commonwealth University  
Marta Diaz del Castillo, PhD –University of Aarhus/Mayo Clinic  
Connor Dolan, PhD – Texas A&M University  
Guoli Hu, PhD - University of Texas Southwestern



*Above, from left to right:*

Japneet Kaur, PhD - University of Arkansas for Medical Sciences  
Alexander Knights, PhD – University of Michigan  
Rebecca Mountain, PhD – Maine Health Institute for Research  
Eri Takematsu, PhD – Stanford University  
Sung-Hee (Seanna) Yoon, PhD – MGH/Harvard Medical School

### 2024 AIMM Young Investigator Awardee



Emily Moore, PhD  
Harvard School of Dental Medicine

### 2024 Charles Turner Young Investigator Awardee



Katharina Kirschner  
Indiana University School of Medicine

# AIMM/ASBMR JOHN HADDAD YOUNG INVESTIGATOR MEETING

## PROGRAM

April 8-12, 2024

The Stonebridge Inn, Snowmass, Colorado

All events at the Stonebridge first floor conference room/dining areas

Breakfast starts service at 6:15am each day, Tue-Fri

Times listed are Mountain Time (MT)

### MONDAY, APRIL 8

#### REGISTRATION opens at 2pm

4:30-4:45pm Michael Mannstadt, MD, AIMM President  
*Welcome*

#### Session 1 Improving Orthopedic and Oral Regeneration and Repair

Session Chair: Nan Hatch, PhD (Univ of Michigan)

2010 Haddad YI

Co-Chair: Lauren Surface, PhD (Univ of Michigan)

2018 Haddad YI

#### Speakers

4:45-5:30pm

Marco Bottino, DDS, PhD (Univ of Michigan)

*Development of tissue- and patient-specific polymeric scaffolds for coordinated regeneration of periodontal tissues.*

5:30-6:15pm

Lukasz Witek, PhD (NYU Dentistry)

*Leveraging 3D Printing Technology for Orthopedic and Craniomaxillofacial Applications: Regenerating Critical Sized Defects*

6:15-6:30pm

BREAK

6:30-7:00pm

John Haddad Young Investigator - Connor Dolan, PhD (Texas A&M)

*The Role of Mechanical Load and Piezo1 During Mouse Digit Tip Regeneration*

7:00-7:15pm

Discussion and Overview

**8pm Welcome Reception for Registrants (no guests, please)**

### TUESDAY, APRIL 9

#### Session 2: Use It or Lose It

Session Chair: Mary Barbe, PhD (Temple University)

Co-Chair: Gabriel Pagnotti, PhD (MD Anderson)

2019 Haddad YI

#### Speakers

7:00-7:45am

Lynda Bonewald, PhD (Indiana Univ)

*Use it or lose it to age: bone and muscle communication*

7:45-8:30am

Mary Bouxsein, PhD (BIDMC, Harvard)

*Spaceflight and bone health*

8:30-8:45am

Break



8:45-9:15am John Haddad Young Investigator - Evan Buettmann, PhD (Virginia Commonwealth Univ)  
*Cellular and Molecular Mechanobiology of Bone Fracture Healing During Disuse*

9:15-9:30am Discussion and Overview

### GROUP PHOTO

**12:00-1:30pm Mid-day consultations between Young and Established Investigators**

**3:00-4:00pm Meet the Professor**

Luiz Bertassoni, DDS, PhD (Oregon Health & Science Univ)  
*Bone-on-a-chip Model*

Rihana Bokhari, PhD (Baylor College of Medicine Center for Space Medicine)  
*The State of Musculoskeletal Research to Support Future Space Exploration*

### Session 3

#### John Haddad Young Investigators Session

Session Chair: Courtney Karner PhD (UT Southwestern)

2017 Haddad YI

Co-Chair: Petra Simic, MD, PhD (Harvard Med School)

#### Speakers

2024 John Haddad Young Investigators

4:30–5:00pm Alexander Knights, PhD (Univ of Michigan)  
*Osteophyte formation in post-traumatic osteoarthritis*

5:00–5:30pm Guoli Hu, PhD (UT Southwestern)  
*Glutamine Metabolism and Bone Homeostasis*

5:30–6:00pm Japneet Kaur, PhD (Univ of Arkansas)  
*Metastatic Breast Cancer Cells Induce Osteocyte Senescence Contributing to Osteolytic Bone Destruction*

6:00-6:15pm Break

6:15 6:45pm Cora Best, PhD (Univ of Florida)  
*Genetic influences on vitamin D metabolism*

6:45–7:00pm Rebecca Mountain, PhD (Maine Health Institute for Research)  
*Investigating the Impact of Social Isolation on Skeletal Health*

### 8-10:00pm: WELCOME DINNER for Registrants and Guests

## WEDNESDAY, APRIL 10

### Session 4 : Harnessing signaling pathways to generate and maintain bone

Session Chair: Yuji Mishina, PhD (Univ of Michigan Dentistry)

Co-Chair: Christoph Zechner, MD, PhD (UT Southwestern)

#### Speakers

7:00-7:45am Francesca Mariani, PhD (Keck School of Medicine, USC)  
*Hedgehog signaling activates Sox9+ sentinel cells to drive large-scale bone repair*

7:45-8:30am Marc Wein, MD, PhD (MGH/Harvard) 2014 Haddad YI  
*Building bone by blocking salt inducible kinases*

8:30-8:45am Break

8:45-9:15am John Haddad Young Investigator - Seanna Yoon, PhD (MGH/Harvard)  
*The Role of Salt-Inducible Kinases (SIKs) in renal PTH actions*

9:15-9:30am Discussion and Overview

**1:00-2:30pm**

**SKI RACE**

**12:00-1:30pm Mid-day consultations between Young and Established Investigators**

3:00-4:00pm Meet the Professor  
*Career Development: Leadership roles in science.*  
Laura Calvi, MD and Mary Bouxsein, PhD

**Session 5 :** **Crosstalk in cartilage and bone cells**  
*Chair:* Steve Popoff, PhD (Temple University)  
*Co-Chair:* Alex Lambi, MD, PhD (Univ of New Mexico)

4:30-5:15pm Karen Lyons, PhD (UCLA)  
*BMP/TGFbeta crosstalk in cartilage formation and maintenance*

5:15-6:00pm Laura Calvi, MD (Univ of Rochester) 2002 Haddad YI  
*Osteoblastic/stromal cell cross talk with neutrophils and macrophages in bone homeostasis*

6:00-6:15pm Break

6:15-6:45pm John Haddad Young Investigator - Marta Diaz del Castillo, PhD (Aarhus Univ/Mayo)  
*Microenvironmental alterations during multiple myeloma tumorigenesis*

6:45-7:15pm Charles H. Turner Young Investigator - Katharina Kirschner (Univ of Indiana)  
*Macrophage Polarization and Bone Homeostasis during Chronic Kidney Disease (CKD)*

7:15-7:30am Discussion and Overview

**THURSDAY, APRIL 11**

**Session 6** **Stem cells-Updated studies on marrow vs. periosteal stem cells**  
Session Chair: Matt Greenblatt, MD (Weill-Cornell) 2019 Haddad YI  
Co-Chair: Beth Rendina-Ruedy, PhD 2022

7:00-7:45am Thomas Ambrosi, PhD (UC Davis) 2022 Haddad YI  
*Diversity and central regulation of skeletal stem cells*

7:45-8:30am Brya Matthews, PhD (Univ of Auckland) 2014 Haddad YI  
*Heterogeneity of adult murine and human periosteum progenitors.*

8:30-8:45am Break

8:45-9:15am John Haddad Young Investigator - Eri Takematsu, PhD (Stanford)  
*Deciphering Skeletal Stem Cell Interaction with Immune Cells  
at Bone Regenerative Interface to Advance BMP-2 Based Bone Regeneration*

9:15-9:45am AIMM Investigator – Emily Moore, PhD (Harvard School of Dental Med)  
*Understanding periosteal signaling to harness its osteogenic potential*

9:45am **BOARD MEETING**

**12:00-1:30pm Mid-day consultations between Young and Established Investigators**

3:00-4:00pm **Meet the Professor**

Dan Perrien, PhD (Emory)  
*Building a pathway to elevate (and possibly recruit) diverse trainees*

Kristy Nicks, PhD (NIH)  
*NIH Initiatives Addressing Diversity in Science*

**4:00–5:00pm BUSINESS MEETING– ALL REGISTRANTS INVITED**  
with Election of New Board Members

**Session 7 :**

**Late-Breaking Clinical and Basic Science Topics**

Session Chair: Xiangli Yang, PhD (UTHealth Houston)

Co-Chair: Shirley Wang, PhD (UT Southwestern)

2022 Haddad YI

5:00-5:15pm Andre van Wijnen - *Integration of bone anabolic stimuli by  
a therapeutically druggable epigenetic master switch*

5:15-5:30pm Lauren Surface - *Genome-wide analyses reveal regulation  
of osteogenic phosphate sensing by TGF $\beta$  signaling*

2018 Haddad YI

5:30-5:45pm Florent Elefteriou  
*Nf1-null osteoprogenitors akin rotten apples in a barrel*

2004 Haddad YI

5:45-6:00pm Break

6:00-6:15pm Hans van Leeuwen  
*Follistatin-compound hFST $\Delta$ HBS-FC improves bone and muscle mass  
during immobilization and ageing and adds to bone effect of bisphosphonates*

6:15-6:30pm Clemens Bergwitz - *Exercise capacity of mice with skeletal muscle specific  
ablation and transgenic expression of Pi transporter*

6:30-6:45pm Yuji Mishina - *Orchestration of growth factor signaling  
and endocrine disruptor signaling on craniofacial development*

6:45-7:00pm Petra Simic - *GPAT2 Regulates Mineral and Bone Disorder in Chronic Kidney Disease*

**8:00-10:00pm AWARDS DINNER for Registrants and Guests**

## **Friday, April 12**

### **Session 8**

#### **Exercise effects on the skeleton**

Session Chair: Clemens Bergwitz, MD (Yale University)

Co-Chair: Diana Athonvarangkul (Yale University)

2023 Haddad YI

7:00-7:45am

Ken Kozloff, PhD (Univ of Michigan)

*Bone stress injuries, wearable technology, and the quantifiable you.*

7:45-8:30am

Katie Taylor (USARIEM)

*Bones and Basic Army Training*

8:30-9:15am

Discussion and Overview

**12:00-1:30pm**

**Mid-day consultations between Young and Established Investigators**

3:00-4:00pm

**Meet the Professor** - Targeted to YIs, but ALL Welcome

Kristy Nicks, PhD (NIH)

*Meet the PO: the NIH funding process and careers with the NIH*

### **Session 9**

#### **Late Breaking Basic/Translational Science Topics**

Session Chair: Michaela Reagan, PhD (Maine Health/Tufts)

Co-Chair: Kelly Roszko, PhD (NIH)

2016 Haddad YI

2017 Haddad YI

4:30-4:45pm

Melissa Kacena

*Can AI be used to Write Credible Scientific Review Articles?*

2003 Haddad YI

4:45-5:00pm

Renny Franceschi - *The Collagen Receptor, Discoidin Domain Receptor 2 (DDR2) Regulates BMP-induced Ossification and Fibrodysplasia Ossificans*

5:00-5:15pm

Jill Fehrenbacher - *Placental tissue derived preparations enhance bone healing and reduce pain behaviors in a surgically induced murine fracture model.*

5:15-5:30pm

Break

5:30-5:45pm

Ryan Tomlinson

*The HMGB1-TLR4-NGF signaling axis in load-induced bone formation*

2018 Haddad YI

5:45-6:00pm

Kelly Roszko

*<sup>18</sup>F-NaF PET/CT for Quantification and Characterization of Soft Tissue Calcification in Hyperphosphatemic Familial Tumoral Calcinosis*

2017 Haddad YI

6:15-6:30am

Discussion and Overview

**Thank you for your participation!**

**See you next year!!**

**April 7-11, 2025**