ORS ISFR Scientific Meeting: *Inflammation and Fracture Healing*
Monday, February 4, 2019, 12:15 PM – 3:00 PM
Austin Convention Center, Level 4, Meeting Room 16

**Agenda**

12:15 PM – 12:30 PM  **Welcome/ORS ISFR Business Meeting**
David Hak, MD, Denver Health, ORS ISFR Chair
Amy Hoang-Kim, PhD, Ontario Ministry of Health and Long-Term Care,
ORS ISFR Chair Elect

12:30 PM – 12:40 PM  **Introduction**
Kurt Hankenson, DVM, PhD, University of Michigan, ORS ISFR Membership Chair

12:40 PM – 1:10 PM  **Invited Keynote: Aging of the immune system and fracture repair**
Mary Nakamura, MD, University of California San Francisco

1:10 PM - 1:40 PM  **Invited Keynote: Adaptive immunity in bone regeneration**
Katharina Schmidt-Bleek, PhD, Julius Wolff Institute

1:40 PM - 2:10 PM  **Invited Keynote: Systemic Responses to Complex Musculoskeletal Trauma**
Robert Guldberg, PhD, Georgia Institute of Technology

2:10 PM - 2:20 PM  **Moderated Discussion**

2:20 PM - 3:00 PM  **ORS ISFR Junior Investigator Three Minute Thesis Competition**
Invited participants will have 3 minutes to pitch the significance of their research.

Moderator: Meghan Moran, PhD, Rush University Medical Center
ORS ISFR Education Initiatives Committee Chair

3:00 PM  **Meeting Adjourn**

**ORS ISFR Scientific Meeting Keynote Speakers**

*Aging of the immune system and fracture repair*

**Mary C. Nakamura, MD** is Professor of Medicine at University of California, San Francisco where she is a clinical rheumatologist with a basic research focus on osteoimmunology. Her laboratory focuses on the study of innate immune receptors on osteoclasts and the role of innate immunity in normal and pathological bone turnover.

*Adaptive immunity in bone regeneration*

**Katharina Schmidt-Bleek, PhD** received her PhD in molecular Biology in 1997, her license to practice veterinary medicine in 2006 and her speciality in experimental animal work in 2012. She is a principle investigator and a group leader at the Julius Wolff Institut at the Charité - Universitätsmedizin in Berlin: Biology of Bone Healing. Her research focus is the interdependency of the adaptive immune system and the skeletal systm during the regenerative bone healing process.

To learn more about ORS and ORS ISFR membership, please visit [www.ors.org/ors-isfr](http://www.ors.org/ors-isfr) or stop by the ORS Lounge in the Exhibit & Poster Hall.
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**Systemic Responses to Complex Musculoskeletal Trauma**

Robert Guldberg, PhD is vice president and Robert and Leona DeArmond executive director of the Phil and Penny Knight Campus for Accelerating Scientific Impact at the University of Oregon. His research is focused in the areas of regenerative medicine, biomaterials, mechanobiology, and orthopaedic medical devices. Dr. Guldberg has co-founded four start-up companies and served in several national leadership positions, including President of the Americas Chapter of the Tissue Engineering and Regenerative Medicine International Society (TERMIS-AM).

ORS ISFR Junior Investigator 3 Minute Thesis Competition Participants

**Immune response to osteoporotic fracture**
Verena Fischer, PhD, University of Ulm

**Cryogel Scaffolds for the Treatment of Cleft-Craniofacial Defects to Promote Bone Regeneration**
Katherine Hixon, PhD, Washington University in St. Louis

**Bone Fractures Getting on Your Nerves?**
Jeffery Nielsen, BS, Purdue University

**Effects of Notch1 overexpression and inhibition on bone fracture healing**
Sanja Novak, PhD, University of Connecticut Health Center

**Systemic Bone Loss after Fracture**
Benjamin Osipov, PhD, University of California – Davis

**Faster Fracture Repair: Why, and How?**
Mingding Wang, BS, Purdue University

**Mechano-molecular Regulation of Fracture Healing**
Esther Wehrle, DVM, PhD, ETH Zürich – Institute for Biomechanics

**Perivascular Exosomes Incite Bone Repair Via Vesicular Surface-associated Tetraspanins**
Jiajia Xu, PhD, John Hopkins University

ORS ISFR 2019 Awards
The ORS ISFR Junior Investigator 3-Minute Thesis Competition and ORS ISFR Member Podium and Poster Awards below finalists are eligible for ORS ISFR awards. Please join us as the ORS ISFR awards will be announced during the **ORS 2019 Closing Session** on Tuesday, February 5, 2:00 PM – 3:30 PM.

ORS ISFR Podium and Poster Award Finalists
The following are award finalist podium and poster presentations that will be presented during the **ORS 2019 Annual Meeting**. Please refer to the ORS mobile app or program book for more information.

**Junior Investigator Podium Presentations**

*VEGFA from Early Osteoblast Lineage Cells (Osx+) is Required for Normal Bone Healing Following Fracture*
Evan Buettmann, PhD, Washington University in St. Louis

*YAP And TAZ Mediate Osteocyte Perilacunar/canalicular Remodeling*
Christopher Kegelman, BS, University of Pennsylvania

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Therapeutic delivery of Nerve Growth Factor Accelerates Cartilage to Bone Conversion during Fracture Healing
Kevin Rivera, BS, University of California San Francisco

Foxo1-mediated Autophagy, Is Required For The Maintenance Of Articular Cartilage Homeostasis
Cuicui Wang, PhD, Washington University in St. Louis

Faculty or >10 Years of Experience Podium Presentations
Apolipoprotein E Impairs Bone Fracture Healing and Osteoblast Differentiation via Metabolic Reprograming
Gurpreet Baht, PhD, Duke University

Chronic Psychosocial Stress Disturbs The Inflammatory Response And Endochondral Ossification After Bone Fracture Via β-adrenoceptor Signaling
Melanie Haffner-Luntzer, PhD, Ulm University

Naproxen Impairs Load-induced Bone Formation, Reduces Bone Toughness, And Delays Stress Fracture Repair In Mice
Ryan Tomlinson, PhD, Thomas Jefferson University

Poster Presentations
Sustained Delivery of Antimicrobials from 3D-Printed CaP Scaffolds in a Single-Stage Revision of Osteomyelitis with Hardware Exchange Abrogates S. Aureus Infections and Promotes Bone Formation in Mice
Hani Awad, PhD, University of Rochester

Bioassay of Circulating Collagen X Degradation Product Correlates with Mouse and Human Fracture Healing Progression
Chelsea Bahney, PhD, University of California San Francisco

LIF Enhances Callus Formation During Fracture Healing
Jiun Chiun Chang, PhD, University of California San Francisco

IGF1 Signaling Play A Critical Role In Fracture Repair And Bone Homeostasis By Regulating Osteogenic Differentiation Of Bone Lining Cells Through CXCL12 Expression
Alessandra Esposito, PhD, Rush University Medical Center

Image-Based Mechanostructural Analysis of Tibial Nonunions
Hannah Dailey, PhD, Lehigh University

Regulation Of Prx1 Expression Through CXCL12 Expression Is Critical During BMP2-induced Fracture Healing
Alessandra Esposito, PhD, Rush University Medical Center

Mineralization and Antibacterial Potential of Bioactive Cryogels In Vitro and In Vivo
Katherine Hixon, PhD, Washington University in St. Louis

Implantable Strain Sensor Enables Real-Time Quantification of Mechanical Boundary Conditions on Segmental Bone Defects Stabilized by Fixators of Variable Stiffness
Brett Klosterhoff, BS, Georgia Institute of Technology

Interaction Between C5ar1 And Tlr2 In Osteoblasts Induces The Osteoclastogenic Factor Cxcl10
Yvonne Mödinger, PhD, University of Ulm

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Human Bone Grafts seeded with Induced Pluripotent Stem Cells-Mesenchymal Progenitors for Spine Fusion in a Rat Model
Francisco Rodriguez-Fontan, MD, University of Colorado Anschutz

Disruption of CD47 Signaling Promotes Endothelial Cell Proliferation but Inhibits Mesenchymal Stem Cell Expansion Leading to Delayed Fracture Healing
Robert Zondervan, PhD, University of Michigan

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