



## Be a Part of the 50th International Musculoskeletal Biology Workshop

**Important Update:** The deadline has been extended for Awards Abstract submissions for the 50th International Musculoskeletal Biology Workshop.

**Submissions will now be open until Friday, April 28** at midnight Central Time. Don't miss out! This is the final opportunity to get your Podium Abstracts and Blue Ribbon Poster Presentation Abstracts in for possible inclusion in the 2023 event. (The Poster Only Abstract submission deadline will be Friday, June 2).

[Submit Your Abstract Today](#)

The 50th International Musculoskeletal Biology Workshop will take place July 22 - 27 at Zermatt Utah Resort and Spa in Midway, Utah. This workshop will identify problems in musculoskeletal disease and experimental approaches that provide solutions. Concepts debated at the Musculoskeletal Biology Workshops have had, and continue to have, a strong impact on the study of skeletal physiology and disorders. All investigators interested in increasing understanding across the many disciplines that study musculoskeletal and mechano-biology are encouraged to attend.

**The hotel reservation deadline is Monday, June 19.** Information on hotel reservations, how to connect with potential roommates, how to share a ride from the SLC airport, and more can be found at the link below.

[Register Today](#)

## Join Us This Thursday for *Conversations with Kurt*

# Conversations with Kurt



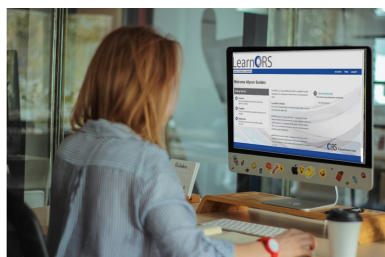
**This Thursday!** ORS members have unique access to raise their questions, comments, and concerns directly to ORS leadership. Each month, ORS Board President, Kurt Hankenson, DVM, MS, PhD presents an informal forum for members to engage directly on important topics, and to ask questions about the ORS and the field of orthopaedic research. Each *Conversations with Kurt* event will center on a specific topic and offer plenty of opportunity for members to bring up matters that are most important to them.

Members can click the link below to register for the next *Conversations with Kurt* which will take place April 27, 10:00 am Eastern or 8:00 pm Eastern.

[Join the Conversation](#)

## Online Educational Opportunities from LearnORS

# LearnORS



[LearnORS](#), the online education platform from the ORS, offers a complete learning experience in a format designed to meet learners' educational needs. Each LearnORS course delivers eLearning training materials from one online location. ORS Members receive a discounted rate for all courses.

Users can now purchase multiple licenses without immediately identifying courses. This is a great new option for lab purchases.

Residency programs and newly matched medical students are encouraged to take advantage of our special **LearnORS Residency Bundle**. This is a bulk option for a residency program to purchase discount access to all LearnORS courses for as many residents as they have

in their program. Individuals can also purchase the courses offered in the Residency Bundle, or create a custom bundle to fit their specific educational needs at a discounted price.

[Learn More](#)

LearnORS recently launched its 2023 series of Virtual Scientific and Career Development Sessions. The next session will be:



**Using i-GONAD and Other Novel Techniques to Rapidly Generate Mouse Models of Human Skeletal Disease**

Wednesday, May 3, 2023 | 12:00 pm – 1:00 pm (Central Time)

*Organizers:* ORS Preclinical Models Section

*Speaker:* Megan Michalski, DDS, PhD, Postdoctoral Fellow,  
Department of Cell Biology,  
Van Andel Institute

i-GONAD is a gene editing technique that uses CRISPR-Cas9 to modify the DNA of embryos by injecting the gene-editing components directly into the oviduct of a pregnant mouse. This greatly reduces the number of animals needed to generate genetically engineered mouse models and has the potential to be used to develop other model organisms with genetic edits. Dr. Michalski will discuss the i-GONAD method and how it has been used to accelerate her research interests.

[Register for the Session](#)

If you missed the April session, **Novel Turkey Model for Musculoskeletal Research**, you can still access the video at <https://ors.memberclicks.net/vlibrary>.

Those who have an idea for a future Virtual Scientific and Career Development Session should speak with their section or committee leaders about eligibility and the application process.

## Today - Session Ideas are Due for the 2024 Annual Meeting





**Today is the last day** to submit ideas for *Symposia*, *Back to Basics*, and *Bench to Bedside* sessions for the 2024 Annual Meeting, February 2 - 6 in Long Beach, California.

**ORS Symposia** advance translational musculoskeletal science by connecting scientists within and across various disciplines. Panels of experts representing basic, translational, clinical, and regulatory perspectives will engage the audience in a dialogue about a hot topic, and/or emerging, forward-thinking paradigm in orthopaedic science.

**Back to the Basics Sessions** bring foundational knowledge and historical perspective to participants, highlighting important discoveries made 30+ years ago and how they have influenced the field.

**Bench to Bedside Sessions** bring together clinicians, scientists, and clinical trial experts to discuss innovations and advances.

**Please submit your session ideas today, April 24.**

[Submit Session Ideas](#)

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## Today - ORS 2024 Annual Meeting Workshop Applications are Due



**Today is the last day** to submit workshop applications for the ORS 2024 Annual Meeting. A wide variety of topics will represent basic, translational, and clinical research, as well as innovative technologies. Workshop categories for these 90-minute sessions include the following:

- Scientific Workshop – cutting-edge musculoskeletal research (i.e. the role of the immune system in tendon disease).



- Science and Technology Workshop – in collaboration with an industry partner (i.e. additively manufactured implants - cool parts, but how far have we advanced on material safety and characterization?).
- Crosstalk Workshop – highlighting interactions between clinical and basic approaches to musculoskeletal problems (i.e. leveraging multidisciplinary expertise to identify patients at risk for OA after meniscal surgery).

The goals of the workshops are:

1. To educate our attendees about exciting research and novel skills.
2. To promote collaborative approaches that address orthopaedic/musculoskeletal diseases and treatment challenges.

Workshops focusing on aging, multi-organ/tissue crosstalk, artificial intelligence/big data, tissue regenerative medicine, stem cell biology, and translational research are encouraged.

**The deadline for submission is today, April 24.**

For more information and details please see the workshop application. Decisions will be announced in May after a completion of external review and final selection by the ORS Scientific Program Committee.

[Apply for the Workshops Today](#)

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## April ORS Basic Science Tip



In 2022, the ORS lost a giant, Dr. Fred Nelson MD. Fred was a member of the ORS for almost 50 years. Through his clinical perspective, Fred's myriad contributions to the society have advanced both basic and translational research. He was a longstanding member of the Scientific Communications Committee, and he pioneered the Basic Science Tips series. The Scientific Communications Committee will carry forward the Basic Science Tips in hopes of honoring the legacy of Fred.

### **How hypoxic is the initial phase of fracture healing?**

Oxygen is critical for cell survival, proliferation, and differentiation. Different cell types and tissues have different oxygen levels and different oxygen needs. For example, while the spleen exhibits high oxygen levels ~8-10% pO<sub>2</sub> at atmospheric pressure, the bone

marrow environment is relatively hypoxic (1%-6% pO<sub>2</sub>). When a bone is broken, this can dramatically change the amount of oxygen in this environment.

Keep Reading This Month's Tip

## New OREF Grants



ORTHOPAEDIC RESEARCH  
AND EDUCATION FOUNDATION

The Orthopaedic Research and Education Foundation (OREF) has recently announced more than \$90,000 in new funding opportunities for research. Grant and award applications are now available for: skeletal metastases, recovery and resident research, and support for travel. Grants and awards range from \$1,500 to \$25,000. For more information or to submit an application, visit the OREF grant programs webpage at the link below.

Get More Information

## Mark Your Calendar!

*ORS 2024 Annual Meeting*

[Deadline to Submit Ideas for Symposia, Back to Basics, and Bench to Bedside Sessions](#)  
[Deadline to Submit Workshop Applications](#)

April 24, 2023

[Conversations with Kurt](#)

April 27, 2023

10:00 am Eastern or 8:00 pm Eastern

*50th International Musculoskeletal Biology Workshop*

[Deadline to Submit Abstracts for Awards, Podium, and Blue Ribbon Poster Presentations](#)

April 28, 2023

*LearnORS Presents*

[Using i-GONAD and Other Novel Techniques to Rapidly Generate Mouse Models of Human](#)

[Skeletal Disease](#)

May 3, 2023

12:00 pm Central

*50th International Musculoskeletal Biology Workshop*

**Deadline to Submit Abstracts for Posters**

June 2, 2023

**Deadline for Hotel Reservations**

June 19, 2023

**50th International Musculoskeletal Biology Workshop**

July 22 - 26, 2023 Zermatt Utah Resort & Spa

Midway, Utah

**2023 Clinician Scholar Career Development Program (CSCDP)**

September 21 - 23, 2023

Rosemont, Illinois

**ORS 2024 Annual Meeting**

February 2 - 6, 2024

Long Beach, California

Information and Registration Coming this Summer



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