

# BIOENGINEERING

## SEMINAR SERIES



## Jenny Robinson, Ph.D.

Assistant Professor, University of Washington

Endowed Chair in Women's Sports Medicine and Lifetime Fitness

Departments of Orthopedics & Sports Medicine and Mechanical Engineering

**February 8<sup>th</sup>, 2024**

**12:30 – 1:00 PM Coffee/Pastry Mixer, Foege North Lobby**

**1:00 – 1:50 PM, Foege S060**

**live stream: <https://washington.zoom.us/j/94375637567>**

### ***“Designing In Vitro Systems to Interrogate Sex Differences in Connective Tissue Injury and Regeneration”***

**ABSTRACT:** In soft and hard tissues of the knee joint, including cartilage, ligament, tendon, fibrocartilage, and bone, sex differences exist in both injury incidence, severity, and regeneration efficacy. Specifically, a better understanding of the interplay of sex hormones and mechanical cues in regulating tissue structure and function is needed to reduce or prevent injury, provide clearer and more patient-specific surgical and therapy recommendations, and develop techniques to promote functional regeneration and reduce scarring. The Robinson Lab focuses on the fibrocartilagenous knee meniscal discs that function to distribute load in the joint and experience limited regeneration after injury. This talk will focus on fibrous and hydrogel-based biomaterial microenvironments designed to mimic key structural and mechanical components of the meniscus and their use in understanding primary human male and female meniscal cell response to estrogen signaling. This work will inform future efforts to promote regeneration and reduce fibrous scarring after injury uniquely for biological male and female patients.

**BIO:** Dr. Jenny Robinson is an Assistant Professor in Orthopaedics and Sports Medicine and Mechanical Engineering and Core Faculty in the Institute for Stem Cell and Regenerative Medicine at the University of Washington. There she holds the Endowed Chair in Women's Sports Medicine and Lifetime Fitness. Jenny received her B.S. and Ph.D. in Biomedical Engineering from Rice University and Texas A&M University, respectively. Dr. Robinson completed her postdoctoral fellowship in Biomedical Engineering and Craniofacial Biology at Columbia University. Dr. Robinson was previously an Assistant Professor in Chemical Engineering and the Bioengineering Graduate Program at the University of Kansas prior to her move to the University of Washington. Her research has been recognized by a NIH NIGMS R35 MIRA award, a Biomaterials Science Emerging Investigator issue award, a AIChE Futures Journal award, Rosalind Franklin Society/Mary Ann Liebert Award, and delegate to the National Academy of Engineering Frontiers Symposium.