Department of Biomedical Engineering
UNIVERSITY OF WISCONSIN–MADISON

Fall 2025
Seminar Series

Failing Fabulously: Vogue Challenging Niche Large-Scale Bone Repair Research Missteps into Broad Impact Innovations

Sara McBride-Gagyi, PhD
Assistant Professor of Biomedical Engineering
Courtesy Appointment in Orthopaedic Surgery
The Ohio State University

Big Ten Speaker

Research rarely unfolds exactly as planned. Despite careful preparation and well-designed protocols, unexpected outcomes — and outright failures — are an inevitable part of experimental science and engineering. Yet these challenges are seldom shared publicly, leaving many trainees and early-career researchers feeling isolated or discouraged when things go awry.

In this talk, Dr. Sara McBride-Gagyi will share two recent projects from her lab related to her larger research on bone regeneration that faced significant, unforeseen setbacks — challenges that could easily have been dismissed as fatal failures that wasted valuable time and resources. Instead, through creative problem-solving and critical re-evaluation, her team turned these obstacles into opportunities, ultimately generating results and innovations more impactful than the original aims.

Dr. McBride-Gagyi will walk through each project chronologically, highlighting the engineering design pivots, decision-making processes, and lessons learned along the way. She will conclude with a discussion of how these experiences are being reframed for publication and dissemination — underscoring the value of transparency, adaptability, and perseverance in the scientific process.

ABOUT the SPEAKER

Dr. Sara McBride-Gagyi earned her BS in Mechanical Engineering from Clemson University (2004), and her MS and PhD in Biomedical Engineering from Case Western Reserve University (2008, 2011). She completed postdoctoral training in Orthopaedic Research at Washington University in St. Louis (2014). Before joining The Ohio State University Biomedical Engineering Department in 2022, she served as an Assistant Professor of Orthopaedic Surgery at Saint Louis University from 2014 to 2022.

Dr. McBride-Gagyi's research investigates bone development and repair, with a focus on understanding and improving regeneration following large skeletal defects. Her lab combines rodent genetic and surgical models with biological, mechanical, and imaging-based techniques to study bone form and function, while also developing new microCT tools in collaboration with engineers and chemists. Her current work centers on the biological mechanisms underlying Masquelet's Induced Membrane Technique, aiming to optimize graft survival and reconstruction outcomes and uncover novel principles of anabolic bone biology.

She is also deeply committed to advancing diversity across STEMM fields and mentoring the next generation of biomedical engineers.

Monday, November 17 at Noon
1003 Engineering Centers (Tong Auditorium)