



Research Associate II

Orthopaedic Biomechanics Laboratory
Cedars Sinai Medical Center

The Metzger Lab in the Department of Orthopaedics at Cedars-Sinai is seeking a **Research Associate II** with training in Mechanical Engineering or Bioengineering/Biomedical Engineering. Candidates should hold a master's degree, or a bachelor's degree with relevant engineering or research experience and have a strong interest in applying mechanical-engineering principles to orthopaedic and sports-medicine research. The Research Associate will support laboratory and translational studies in musculoskeletal biomechanics, injury prevention, tissue and implant mechanics, and human movement analysis. The position provides opportunities to contribute to experimental design, mechanical testing, data analysis, scientific writing, and collaborative research with orthopaedic clinicians, engineers, and trainees.

Responsibilities

- Design and fabricate test equipment, custom sensors, and control systems for linear actuators
- Write protocols and perform mechanical experiments using the MTS machine.
- Operate and synchronize motion tracking and testing equipment
- Operate imaging equipment, including the micro-CT scanner and mini C-arm X-ray
- Collect, prepare, and pot specimens; maintain specimen freezers and the specimen log
- Care for animals and assist with small animal surgeries for IACUC studies
- Collect, process, and disseminate data and results

Preferred Qualifications

- Strong organizational, time management, and communication skills
- Self-motivated and able to work independently; eager to learn
- Familiar with basic research methodology
- Competent in Python (MATLAB also acceptable)
- Basic mechanics of materials knowledge (stress/strain, yield, torque, shear)
- Basic kinematics knowledge (rotation matrices, quaternions, Euler angles)
- Experience in CAD (Fusion 360, SolidWorks, etc.) and 3D printing
- Experience in microcontroller programming (Phidgets, Arduino) and sensor integration (load cells, displacement sensors, IMUs)
- Basic electronic circuit assembly skills (soldering, wiring on breadboards and PCBs)
- Basic machine shop experience (drilling, milling, and use of hand and power tools)