Internship Title: Biomechanics Research Internship
Location: UR Medicine Motion Lab, Saunders Center for Orthopaedics and Physical Performance
Compensation: Unpaid; eligible for research credit
Time Commitment: Minimum of 15 hours per week
Supervision: Dr. Ram Haddas, Departments of Orthopaedics and Biomedical Engineering

---

Position Overview:
The UR Medicine Motion Lab invites applications for its Biomechanics Research Internship, designed for students seeking immersive, hands-on experience in clinical biomechanics and motion analysis. This internship offers a unique opportunity to contribute to ongoing orthopedic research, work directly with patients suffering from musculoskeletal and neurological disorders, and support scientific innovation aimed at improving healthcare outcomes. Interns will be trained to assist with advanced motion capture systems, analyze real patient data, and support translational research projects focused on spine health, injury prevention, and rehabilitation, especially within high-risk populations such as firefighters and first responders.

Internship Description & Objectives:
Interns enrolled in this track will:

- Review current literature in human biomechanics and orthopedic research
- Develop clinical insight through observation and participation in patient evaluations
- Gain familiarity with motion analysis tools, including motion capture, EMG, force plates, and posturography
- Participate in data processing, interpretation, and clinical reporting
- Contribute to ongoing research aimed at advancing Orthopaedics care and injury prevention

---

Laboratory Techniques & Skills Acquired:
Participants will receive hands-on experience with:

- Motion Capture Systems (Vicon, Theia)
- Force Plates & Instrumented Treadmill
- Surface Electromyography (EMG)
- Computerized Dynamic Posturography (CDP)
- Electroencephalography (EEG; optional, based on project involvement)
- MATLAB for signal processing and data analysis
- Clinical workflow including patient prep, testing, and post-assessment documentation

---

Evaluation Criteria:
Interns will be assessed on:

- Completion of a research project using patient data and MATLAB
- Evaluation of at least 50 patients over the internship period
- Completion of at least 5 literature reviews with integration into lab protocols
- Contribution to motion lab documentation and report writing
- Development of at least 5 MATLAB scripts or script sections
- Contribute to the lab's digital outreach by creating social media content that communicates clinical research in an accessible and engaging way
- Attendance and active participation in weekly lab meetings

Eligibility:

- Open to undergraduate and graduate students in biomechanics, biomedical engineering, kinesiology, pre-med, physical therapy, or related fields
- Must commit to 15 hours per week during the academic semester
- Strong interest in musculoskeletal health and research
- Ideally would have completed BME 201 (Fundamentals of Biomechanics) and/or BME 201P (Matlab for BME), or equivalent courses in majors other than BME.
- Professional demeanor and ability to interact with patients are required

---

How to Apply:
Interested candidates should submit a resume and brief statement of interest to Motion Labs@URMC.Rochester.edu

---

This is a rewarding opportunity to work side-by-side with experienced researchers and clinicians, advance evidence-based care, and build a strong foundation for future academic or clinical careers.