The Institute was created in 2005 at the University of Wisconsin—La Crosse in the Department of Health Professions, Physical Therapy Program. LIMS brings together scientists and clinicians from various disciplines seeking applied knowledge related to human movement, factors related to injury, and in the foundations of therapeutic exercise used in the treatment and rehabilitation of injury.

Each year over 40 students from graduate and undergraduate programs from the UW-L campus are involved in laboratory research including Physical Therapy, Exercise and Sport Science, Physics, and Biology. High technology funding from the State of Wisconsin supports 8 Physics Biomedical student internships in the laboratory.

Due to the many publications from the clinical biomechanics laboratory, LIMS has developed a national/international reputation.

LIMS continues to assess the use of performance based feedback for movement training.

Motion capture and force platform data used on a visual display to examine the effectiveness of movement based training. Currently, the laboratory has several on-going studies on this topic where the performer used this data to alter their movement performance.

Interested in being a participant in a LIMS study?

Current research projects

- Achilles Tendon loading in habitual forefoot and rearfoot runners
- Validation of a new clinical instrument to assess landing mechanics and performance based feedback
- Use of performance based feedback in reducing risky landing mechanics
- Validation of a portable inshoe loading measurement system for running assessment

Please contact Drew Rutherford, MS, drutherford@uwlaex.edu or Tom Kernozek, PhD tkernozek@uwlaex.edu for details

Tom Kernozek, PhD, FACSM, Biomechanist, (Health Professions)

Patrick Grabowski, PT, PhD. OCS, CSCS, Motor Control/Biomechanics, (Health Professions)

Drew Rutherford, MS, Laboratory Manager/Engineer (Health Professions)

Robert Ragan, PhD, Computational Physicist (Physics)
Recently Published or In Press Research


**Plantar loading and foot-strike pattern changes with speed during barefoot running in those with a natural rearfoot strike pattern while shod.** Cooper DM, Leissring SK, Kernozek TW. Foot (Edinb). 2015 Jun;25(2):89-96.


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**We measure your movement performance!**

Our laboratories have sophisticated equipment to measure motion, impact forces, pressures on the feet or in seating, muscle activation, energy cost and heart rate, or for the imaging of tendons or soft tissue.

These data can be used to determine the loading on joints and muscles to give insight to how and why injuries occur or in the improvement of performance to keep you active. Below are some examples from current projects that highlight our capabilities.

Musculoskeletal models are used to determine loading on bone, joints, ligaments and tendons.

Pressures distribution measures show how you are loading different areas of your foot.

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**For more information contact:**

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**Check out our lab on your smartphone!**