Two new faculty join LIMS

Thomas “Gus” Almonroeder, PT, DPT, PhD and Kanikkai Steni Balan Sackiriyas, PT, DSc have joined the Physical Therapy faculty and LIMS. Dr. Almonroeder’s background is in biomechanics and motor control. His research has focused on common acute and overuse lower extremity sports injuries (e.g. ACL tears, patellofemoral pain). He has specifically focused on how the cognitive demands of sports and the cognitive attributes of athletes (e.g. reaction times), influence movement control and how this may contribute to injury risk. Dr. Almonroeder will continue this work with LIMS and will also focus on developing novel approaches to more effectively retrain athletes to adopt safer movement patterns. These efforts will include both uninjured athletes and athletes who are rehabilitation following injury.

Kanikkai “Steni” Balan Sackiriyas, PT, DSc, background is in Physical Therapy, Orthopaedics, and Geriatrics. Dr. Sackiriyas is an Associate Member of the Federation of State Boards of Physical Therapy (FSBPT). His research has focused on musculoskeletal injuries (running injuries) and increasing circulation in healthy individuals and people with diabetes. Dr. Sackiriyas will focus on developing novel approaches to decrease or predict risk for falls, improve safer movement patterns and interventions in athletes in minimizing sports-related musculoskeletal injuries.

Interested in being a participant or working with LIMS?

Contact Drew Rutherford, MS, drutherford@uwlax.edu or Tom Kernozek, PhD tkernozek@uwlax.edu for details
Fast facts regarding LIMS commitment to UWL campus strategic mission of incorporating high impact practices such as capstone experiences, student writing and engaging in “field experiences”.

Since 2005, over 80 graduate students (and some undergraduates) have been co-authors of LIMS research papers published in refereed journals in the fields of rehabilitation, sports medicine, and biomechanics.

- Most were students in the graduate program in physical therapy

In the last 5 years, 7 graduate students presented LIMS research at professional meetings in the fields of sports medicine, rehabilitation and biomechanics.

Female athletes have a 2-8 times greater incidence of anterior cruciate ligament (ACL) injury. LIMS innovative portable force platform system is being used to screen and train high school and college athletes to prevent knee injury. We have traveled to schools and universities in our region to evaluate and train female athletic teams.

Due to our partnership with Becky Heinert, MS, PT, SCS from Gundersen Health System we have screened and trained over 200 high school and collegiate athletes during landing activities. Our approach utilized LIMS developed technology coupled with motor learning principles that use immediate post-trial feedback of performance to augment training. The LIMS system is completely portable so that we can go to schools. Assessment and training takes approximately 20 minutes per athlete.

Maria Lee was awarded a Biomechanics Interest Group (BIG) Travel Award based on scientific merit. Congratulations to Maria! This was a BIG deal!

Becky Heinert is a clinical collaborator with Gundersen Health System. Maria Lee, Jackie Cleereman, Brett McCutchin are graduate students in Physical Therapy Program. Jessica Onsager and Jeremie Schiedermayer are graduates of the UWL Physical Therapy Program.
New PACER Lab

1,800 lbs! The treadmill has two force plates embedded below the belt that can measure impact forces during a prolonged run. We also have a motion capture system in the PACER lab used to measure body and joint positions. These data together can be used to estimate joint and/or soft tissue loading. The display monitor in front of the treadmill will be used to deliver performance based feedback to alter the runner’s biomechanics during training to attempt to prevent injury.

The treadmill arrived in late March where it was carefully moved into a the new PACER lab in the basement (43 HSC). Research projects in this new lab will begin Fall 2019.

LIMS and the Gundersen Sports Medicine Residency Programs

Sports Physical Therapy Residents, Michael Rodriguez and Sarah Menhennett, presented a platform presentation at the American Physical Therapy associations Combined Sections Meeting in Washington, DC (February, 2019):


Family Medicine Resident, Laura Jacobson, presented a poster at the American Medical Society for Sports Medicine’s Annual Conference in Houston, TX (April 2019):

- Jacobson L, Vannatta CN, Kernozeck TW, Schuman C. Sex Differences in Patellofemoral Joint Stress During Running

Sports Physical Therapy Resident, Vien Vu, completed a study with local high schools examining the effects of completing multiple tasks on the ability to anticipate event timing as a possible indicator of injury risk:

- Vu V, Kovacs A, Wughalter E, Vannatta CN, Kernozeck T. Effects of Ankle Sprains and Single versus Dual Task Paradigms on Coincidence Anticipation Performance in Female High School Basketball Players. Findings were presented at Gundersen’s Academic Day and the WPTA’s West Central District Meeting. An abstract has been submitted for consideration as a platform presentation at the 2020 APTA Combined Sections Meeting.

Sports Physical Therapy Resident, Danny Larson, completed a study examining muscle forces and joint kinetics between healthy controls and ACL reconstructed individuals during common return to sport tests:

- Larson D, Vannatta CN, Rutherford D, Kernozeck T. Kinematic and Kinetic Alterations in Hop Tests Persist 1-3 Years Post ACLR in Females. Findings were presented at Gundersen’s Academic Day and the WPTA’s West Central District Meeting. An abstract has been submitted for consideration as a platform presentation at the 2020 APTA Combined Sections Meeting.

Sports Physical Therapist, Nathan Vannatta, is continuing a longitudinal study investigating biomechanical aspects of running gait and field tests which may differ between injured and uninjured runners. This project is in its fourth year of data collection and is beginning preliminary analyses. LIMS, in collaboration with Gundersen Health Systems’ Sports Medicine Department has also begun work in the new PACER laboratory space where biomechanical aspects of running and exercise can measured and provide state-of-the-art analysis and real time feedback to begin to study the most effective ways to deliver sport specific treatments for runners.
Recently Published or In Press Research (2018-2019)


LIMS research continues to have national and international impact. The figure above shows the growth in the number of citations from other authors in acknowledging our work in their research.

For more information contact:

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Check out LIMS on your smartphone!