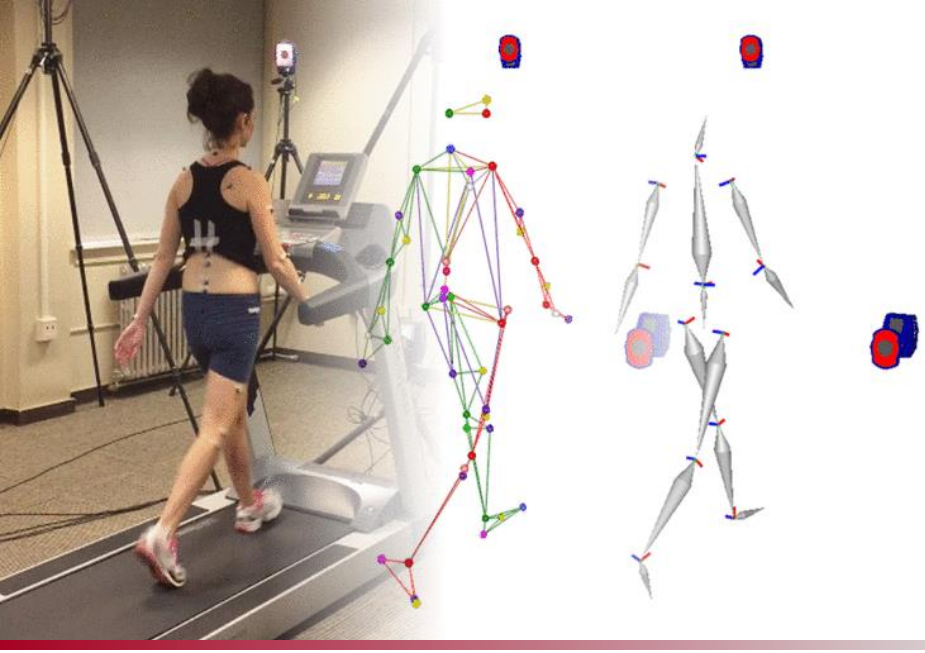
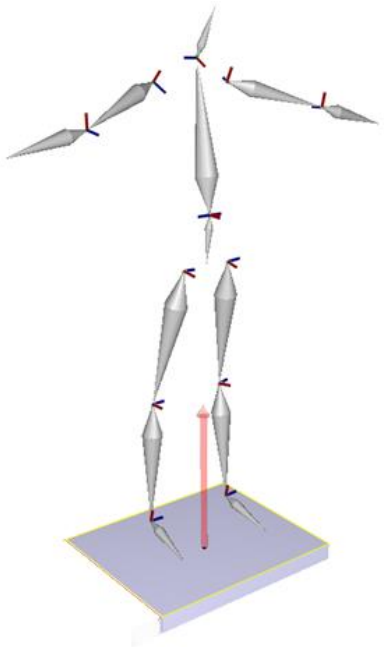


The National Safety Council classifies **falls** as a leading cause of unintentional death in homes and communities.

The **Gait and Posture Biomechanics Lab** is conducting research in dynamic balance with the goal of reducing falls in society.

Our research team is pursuing answers to the following questions:

1. What is our balance CAPACITY to avoid falls?
2. How does our ENVIRONMENT perpetuate falls?
3. How do changes in the BRAIN and BODY affect balance control?



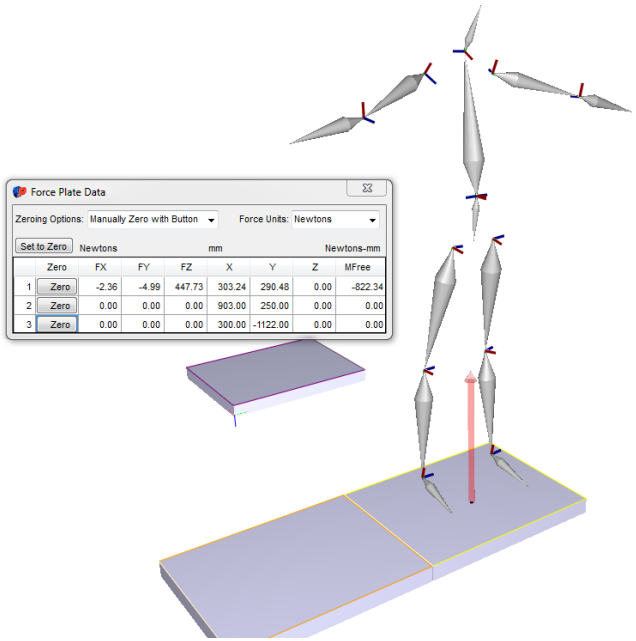
Current Lab Research

Falls in the workplace are a leading cause of death, injury and time lost from work. We are examining ways to reduce fall risks to keep our workers safe.

We are studying the modifications that individuals make to control balance in downhill running and determining ways to quantify dynamic balance in running.

Falls are a leading cause of emergency room visits for pregnant women. We are developing a clinical fall assessment tool so that doctors can assess the fall risk of their pregnant patients and suggest the appropriate lifestyle changes.

We are working to modify concussion diagnostic techniques to account dynamic balance deficits that are currently ignored, but have the potential to cause serious long-term disability.



Using **THE MOST ADVANCED** movement analysis technology in the world

Our lab studies populations that suffer from balance deficits, paradigms that elicit imbalance, and ways of quantifying dynamic balance. Through our productivity and collaborations we are advancing dynamic balance research.

The lab provides students the opportunity to use some of the most advanced movement analysis technology, gain experience in conducting scientific research, and develop skills necessary to become exceptional researchers. The lab is outfitted with the same movement analysis technology as companies like Nike, Pixar, Liberty Mutual, Lockheed Martin, and the US Army …but we use it for the purposes of reducing falls in our society and providing training for our students.

Support Opportunities:

- $100 – $500 supports the purchase of research supplies in the lab
- $3,000 supports the purchase of a new computer for a Research Assistant
- $10,000 – $15,000 supports a complete research project
- $35,000 supports a Research Assistant for the lab to be successful in its current research
- $50,000 provides a year of support to a full-time lab manager to conduct current research, expand our research, assist in grant writing, and assist in student thesis projects.
- $150,000 supports the purchase of a force plate instrumented treadmill and the creation of a Running Biomechanics Clinic as a service center for community runners, Sport Science student research projects, and Athletic Training student clinical practice

Support the Lab!
Contact Andrea Farmer in the College of Education Development Office at a.farmer@wsu.edu

WASHINGTON STATE UNIVERSITY

Gait and Posture Biomechanics Lab

Robert Catena, PhD
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Dr. Robert Catena directs the Gait and Posture Biomechanics Lab. He is an Assistant Professor in the Kinesiology Program of ELSSECP, and also is an affiliate assistant professor in Mechanical Engineering and graduate faculty in Neuroscience. He is on the executive board of the American Society of Biomechanics. He is an expert in balance biomechanics. He has published research exploring balance control in different populations, environmental situations, and ways of quantifying balance.

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