



## GLOBAL ANALYSIS SEMINAR

# Complex Locomotion in the Real World: A Mathematical Challenge in Biomechanics

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**Abstract:** The field of biomechanics has progressed vastly since the stop motion photography of Eadward Muybridge. Many principles of modern biomechanics are based on simple mathematical models which can predict center of mass dynamics and control mechanisms with remarkable accuracy – when moving on smooth, unperturbed surfaces. However, increasing evidence is showing that locomotion in the real world is as complex as the environments animals encounter, without a suitable explanation for how stability can be maintained under a myriad of destabilizing conditions. In this seminar, I will present an overview of the past and present status of the field in relation to the advances made as a result of mathematical collaboration. I will then show where the field is moving with the goal of starting discussions about how mathematics can help to continue to push the field forward.

Wednesday April 13, 1–2:20pm  
Wachman Hall 617

<http://math.temple.edu/events/seminars/manifolds/>