

# UNIVERSITY OF SOUTH FLORIDA

## *Major Research Area Paper Presentation*

*Intersegmental Coordination in Insect Locomotion and  
its Application to Legged Robots*

by  
John Rippetoe

For the Ph.D. degree in Computer Science & Engineering

*Robots have the potential for use in demanding applications where it is often undesirable or impossible to send humans. Legged robots are poised to be a possible solution with their high degree of adaptability; however, their complex mechanical designs and accompanying control systems can make coordinated locomotion difficult, limiting their effectiveness in complex environments. Animals excel at completing a wide range of locomotion tasks, making them an excellent source of inspiration. Insects serve as one of the least complex entries into understanding biological systems and the generation of stable, dynamic locomotion. By understanding the core systems and principles of coordination in insect locomotion, biologically based control models and robot designs can be developed that outperform current robotic systems.*

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9:30 AM

ENB 313

THE PUBLIC IS INVITED

### Examining Committee

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