# 第68回スポーツサイエンス研究会

日時　7月24日（金）　17時〜18時半

場所　早稲田大学　所沢キャンパス　100号館5F 第1会議室

## 特別講演


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## Can we reconcile the musculoskeletal mechanics of human plantarflexion and dorsiflexion from a macro to a micro-perspective?


Although extensive detail is known about the mechanics of single molecules of actin and myosin in a dish and of sarcomeres of single fibers in situ as well as a reasonably detailed description of the mechanics of the ankle joint, it remains unclear how the actomyosin dynamics within and across many sarcomeres within and among muscle fibers generates the specific joint displacement and velocities that occur routinely in vivo. With our present level of understanding of all of the components of the musculoskeletal that generates and transfers forces and displacements, the mechanical properties of these routine movements at the macro level do not match the dynamics in the micro-level. Over the last decade several laboratories have begun to develop imaging technologies that have revealed a new level of understanding of the strain related to events that occur within and among musculotendinous units in small and large mammals, including humans. This presentation will focus on new MRI technologies that have allowed us to image the dynamics of different components of the musculotendinous units that are largely responsible for plantarflexion of the human ankle. As best can be done at the present data available, I will attempt to determine the degree to which the micro-and macro dynamics of plantarflexion in the human can be reconciled.


V.　Reggie　Edgertonは、カリフォルニア大学ロサンゼルス校（UCLA）の生理科学部、神経生物学部、及び脳研究所の教授です。Edgerton教授は、筋生理学、神経科学、重力生理学研究の世界的権威であり、Nature、Nat Med、Brain、J Biol Chem、FASEB J、J Neurosci、J Physiolなど370編以上の論文を公表している非常に著名な研究者です。

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