Ahmet Erdemir, PhD

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Trained as a mechanical engineer at the Middle East Technical University, Ankara, Turkey; Ahmet Erdemir later pursued graduate work in biomechanics - first, in the Department of Mechanical Engineering, Middle East Technical University; then in the Department of Kinesiology, Pennsylvania State University. His doctoral work focused on the load transfer mechanisms of the foot; combining *in vivo*, *in vitro*, and *in silico* approaches to understand the mechanical function of the foot's complex architecture. After completion of his graduate studies, in 2002, he was recruited as a Research Associate in the Department of Biomedical Engineering, Cleveland Clinic, where he focused on simulation-based design of therapeutic footwear for patients with diabetes. His collaborative work realized coupled simulations of rigid body dynamics based musculoskeletal movement simulations and continuum mechanics based tissue analysis. Through these investigations, predictions of optimal neuromuscular control patterns and desired movement strategies for tissue relief were made possible. With the pressing need for multiscale analysis to extract *in vivo* data at lower spatial scales, and to identify the mechanical environment of cells from joint and tissue loading, his recent studies targeted at multiscale explorations of musculoskeletal joints, tissues, and cells. He is currently an Associate Staff in the Department of Biomedical Engineering, Cleveland Clinic. His current research program responds to the challenges in theoretical, applied, and cultural aspects of modeling and simulation. His activities are diverse in order to deliver authentic virtual biomechanical representations of organs and joints, to enable multiscale modeling and simulation in biomechanics, to promote open science for *in silico* biomechanics, to increase credibility in computational medicine through technical work, perspectives, and community activities, and to facilitate virtual prototyping of interventions. In 2007, he founded (and is currently directing) the Computational Biomodeling (CoBi) Core at the Lerner Research Institute; a fee-for-service facility to meet the translational needs of the clinical, industrial, and research communities in biomedical modeling and simulation. He has been an active member of Multiscale Modeling Consortium since 2007.