

Joseph Teran is a professor of applied mathematics at UCLA. His research focuses on numerical methods for partial differential equations in classical physics, including computational solids and fluids, multi-material interactions, fracture dynamics and computational biomechanics. A large component of his work is focused on the simulation of the human body, an excited application of this is virtual surgery. Virtual surgery is a technology for surgeons analogous to flight simulators for pilots. Professor Teran develops algorithms that provide the necessary efficiency and accuracy for predictive simulation of soft tissues involved in virtual open surgeries. His work also has applications in movie special effects. Teran works with Walt Disney Animation applying scientific computing techniques to simulate the dynamics of virtual materials like skin/soft tissue, water, smoke and recently, snow for the movie ``Frozen". Teran received a 2011 Presidential Early Career Award for Scientists and Engineers (PECASE) and a 2010 Young Investigator award from the Office of Naval Research.