

Biographical note

I am a postdoctoral researcher at the Theriot lab in the Department of Biochemistry at Stanford University, School of Medicine. Although I work at a cell biology/microbiology lab, my background is quite diverse with an undergraduate degree from NTUA in Electrical Engineering (2007) and a PhD from UCSD in Bioengineering (2012). My research has always been interdisciplinary combining mathematical and engineering approaches with biological and biochemical techniques in order to answer fundamental questions about how cells move, interact with their environment, with each other and with infectious agents. During my graduate years, I investigated the mechanics of amoeboid cell locomotion and shed light into the role of specific cytoskeletal assemblies in modulating the mechanics driving the movement of amoeboid cells. Part of my studies, published in 2014 in the *Journal of Cell Biology*, demonstrated that neutrophils, which repair damaged tissue as part of the body's immune response, move to inflamed sites by walking in a stepwise manner. These cells periodically form and break adhesions mainly under two "feet," and generate the traction forces that propel them forward by the coordinated action of contractile proteins. Understanding the way cells in general interact with each other and with their extracellular matrix and generate the necessary forces to adhere and migrate is relevant in the case of infection as well. I currently work in developing combinatorial approaches to elucidate the biomechanics that guide endothelial cell infection by infectious bacteria. In addition, I work in engineering novel platforms based on hydrogel fabrication and microfluidics for studying vascular infection in a more realistic and physiologically relevant way. My long-term goal is by understanding the physical and mechanical interactions between cells, their extracellular environment and infectious bacteria, to lay important groundwork for the understanding of the pathogenesis of bacterial infections and possibly for developing therapeutic interventions.