



University at Buffalo

Department of Civil, Structural  
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School of Engineering and Applied Sciences



# **An Application of Computational Mechanics to a Biological Cell**

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## **Abstract**

This talk will be on application of methods of computational mechanics to the fluid-structure interaction problem of modeling a red blood cell passing through a capillary. The work is in collaboration with Prof. Frederick Sachs from the Department of Physiology and Biophysics, and aims to understand the role of a mechanically activated ion channel, PIEZO1, in red blood cell function. The talk will represent work in progress, focusing more on the mechanics than on the biology. Application of computational mechanics techniques such as boundary integral methods, modeling shells in curvilinear coordinates and approximation using spherical harmonic functions to the red blood cell problem will be discussed.

**Date: Friday, October 27<sup>th</sup>, 2017 Time: 11.00 am**  
**Location: 140 Ketter Hall, North Campus, University at Buffalo**