Mechanosensation and the Primary Cilium
(report on summer undergraduate research in Dr. Resnick’s lab)

Joseph Glaser

Physics Department
Cleveland State University

Abstract:

The primary cilium has come under increased scrutiny as a site for mechano- and chemosensation by cells. We have undertaken a program of study using mouse renal cell lines from the cortical collecting duct to quantify how mechanical forces arising from fluid shear are transduced into cellular responses. Fluid flow through a model nephron has been analyzed to determine the in vivo forces. A novel two-sided flow chamber has been calibrated to simulate physiologically relevant renal flow conditions.