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<i>Title: Mechano-sensing enhances neutrophil defense</i>	University of Illinois at Chicago, Dept. of Pharmacology, Chicago, IL 60612
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RESEARCH SUMMARY

- Mechanobiology of innate immune cells. Lung and respiratory disease.
- Centrosome, cilia, and ciliopathies.
- Photo signal transduction in signaling photo-receptors using protein crystallization, UV-vis spectroscopy.

I investigate the process of mechanical signal reception, relay, and conversion to cellular function – in circulating neutrophils during trans-endothelial migration. I have identified a novel E3 ubiquitin ligase CHFR that degrades VE-cadherin and thus regulates barrier integrity. The pathophysiological response to infection also depends on the turnover of neutrophil subtypes. I identified the beneficial neutrophil subtype with high phagocytosis ability (bacterial killing by engulfing them). Thus, subtype specific targeting of neutrophils with specific drug-loaded nanoparticle and mechanical stimulation provides therapeutic values.