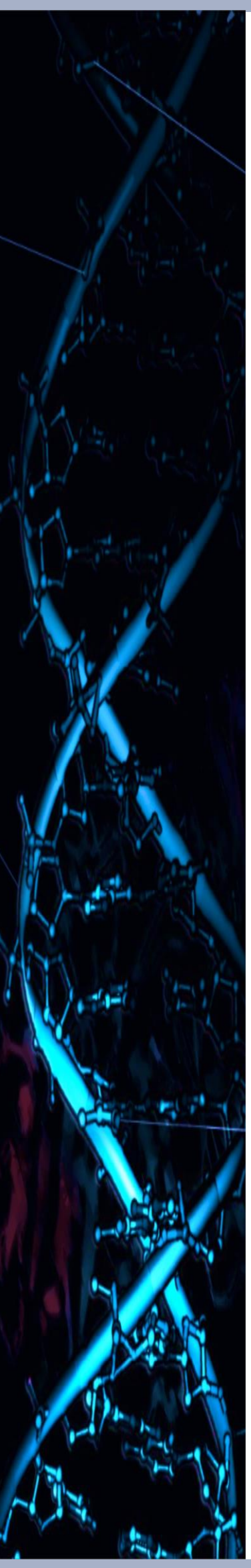
CENTER FOR QUANTITATIVE SCIENCES

2017 WORKSHOP SERIES



Unraveling regulation of cell migration through mathematical modeling.

Presented by:

William R. Holmes, Ph.D.
Assistant Professor
Department of Physics and Astronomy
Vanderbilt University

How cells migrate is an important question that has generated sustained investigation in molecular biology, mathematical modeling, and biopyhsics. Many cell types, including cells of the immune system, are able to polarize and crawl in response to chemical or mechanical stimuli. In this way, they can perform vital functions such as immune surveillance, wound healing, and tissue development. This process (and numerous others) is initiated by the spatial reorganization of a complex network of regulatory proteins (most notably for this discussion, the Rho GTPases) that promote biophysical remodeling of the cell. Here I will describe our efforts to use mathematical and computational tools to distinguish between proposed models of migratory regulation and understand how various feedbacks between intra and inter cellular signaling systems (Rho GTPases, phospholipids, actin, ECM) give rise to different cell morphologies and behaviors.

Friday, April 21, 2017
12:00 PM – 1:00 PM
898-J PRB

Sponsored by: Vanderbilt Ingram-Cancer Center & Vanderbilt Center for Quantitative Sciences

*Vanderbilt University School of Medicine is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians. Vanderbilt University School of Medicine designates this live activity for a maximum of 1.0 *AMA PRA Category 1 Credit(s)*™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

For more information regarding the CQS Workshop Series, please log onto cqs.mc.vanderbilt.edu or contact Jill Shell at jill.shell@vanderbilt.edu.