

APPLIED MATHEMATICS COLLOQUIUM

Self-Organization and Mechanics in the Cell

Michael Shelley

*(Center for Computational Biology, Flatiron Institute &
Courant Institute, NYU)*

Abstract: The inside of a cell is an active place, with molecular machines busy positioning subcellular organelles, organizing themselves within membranes, or remodeling chromatin in the nucleus. I will discuss how mathematical modeling and large-scale simulations have interacted with experimental measurements and perturbations of such motor-driven biomechanical processes within the cell. This includes how the spindle finds its place in the cell, which is best treated as complex mechanical systems that works with transitory elements, and how motor activity and hydrodynamic interactions may underlie an apparently self-organizing dynamics of chromatin in the nucleus.

Monday October 29th, 2018

4:15PM

MIT, Room 2-190

Applied Math Colloquium: <https://math.mit.edu/amc/fall18/>
Math Department: <http://www-math.mit.edu>

Massachusetts Institute of Technology
Department of Mathematics
Cambridge, MA 02139



Massachusetts Institute of Technology