

Abstract Submitted
for the DFD17 Meeting of
The American Physical Society

Measuring and Simulating Cellular Flows during Spindle Positioning EHSSAN NAZOCKDAST, University of North Carolina, Chapel Hill, HAIYIN WU, DANIEL NEEDLEMAN, Harvard University, MICHAEL SHELLEY, Flatiron Institute, NY and Courant Institute, NYU — A cell is a complex fluidic environment in which fundamental biological processes take place. One such process is the proper positioning and elongation of the mitotic spindle which is crucial for chromosome segregation and cell division, and involves the interaction of microtubule assemblies with motor-proteins and subcellular organelles. In a combined experimental and computational study, we use cytoplasmic flow measurements and computational fluid dynamics to argue that proper positioning is primarily achieved by the action of motor-proteins bound to the cell boundary.

Michael Shelley
New York Univ NYU

Date submitted: 29 Jul 2017

Electronic form version 1.4