1139-35-283 **Veronica Ciocanel***, ciocanel.1@mbi.osu.edu, and **Bjorn Sandstede**. *Wave Propagation in Models of mRNA transport.*

In many organisms, messenger RNA (mRNA) must accumulate at the egg cell periphery to ensure healthy development. The transport of these particles is not well understood, but is thought to depend on diffusion, bidirectional movement and anchoring mechanisms. We investigate these proposed mechanisms using linear and nonlinear PDE models and analysis, informed by numerical parameter estimation. Our results yield spreading Gaussian solutions for mRNA concentrations. We predict that accounting for the microtubule cytoskeleton in these transport models through spatially-dependent switching rates may be key in better understanding time and spatial scales of intracellular transport. (Received February 14, 2018)