

The sperm body is comprised of the head, which contains the genetic material, and tails (flagella) that propel the body through a fluid. Most mathematical models for sperm have addressed the dynamics of the undulating tail and ignored the head altogether. In this talk, we will introduce some of the basic questions in sperm biology, and discuss recent projects that consider the sperm head itself. In the first, we focus on how incorporating head bonding behavior affects swimming capabilities. Then, we will zoom in and consider calcium dynamics that result in vesicle release at the sperm head.