

## **Harnessing polarized cells as trucks for micro cargo O. Nagel, Masterarbeit, Universität Potsdam (2014)**

Cell motility is important for various types of biological processes (Horwitz & Parsons 1999). In experiments with the social amoeba *Dictyostelium discoideum* in narrow micro channels a part of the cells exhibited a previously unreported type of movement. Instead of a random walk, these cells move a persistently in one direction along the channel for over 30 minutes, even in the absence of a chemoattractant (Nagel 2011). In the following, thesis this type of motion is analyzed further to find an explanation for this behavior. We study the shape of the cells during persistent motion. Furthermore, the subcellular localization of the motor proteins actin and myosin is examined. In the second part of this work it is tested if this type of motion can be used to transport micro objects through a system of micro channels or whether cells can be used in a different way for the transport of such objects.