1129-92-355 **Angelika Manhart*** (angelika.manhart@cims.nyu.edu), **Pierre Degond** and **Hui Yu**.

Traveling Waves in Myxobacteria.

Myxobacteria are social bacteria, that can glide in 2D and form counter-propagating, interacting waves. In this talk I will present a novel age-structured, continuous macroscopic model for the movement of myxobacteria. The derivation is based on microscopic interaction rules that can be formulated as a particle-based model and set within the SOH (Self-Organized Hydrodynamics) framework. The strength of this combined approach is that microscopic knowledge or data can be incorporated easily into the particle model, whilst the continuous model allows for easy numerical analysis of the different effects. This allows to analyze the influence of a refractory (insensitivity) period following a reversal of movement. Our analysis reveals that the refractory period is not necessary for wave formation, but essential to wave synchronization, indicating separate molecular mechanisms. (Received March 20, 2017)