Title: Steps Towards a Unified Model Prototyping Strategy for multi-(proto)cellular computing.

Abstract: This talk presents an approach based on "Executable Biology" (also called "Algorithmic Systems/Synthetic Biology") for the specification, execution and analysis of multi(proto) cellular systems. The methodology consists of the formal specification of models of individual (proto)cells as stochastic P systems These specifications can be made modular through the use of libraries of modules representing recurrent biological motifs or well-characterised synthetic biological parts, e.g. transcriptional logic gates, that can be reused in different contexts. A second level of modularity is afforded by the specification of individual cells , which can then be distributed in space describing different topological arrangements for multi cellular systems. Specifications are then executed with multicompartmental Gillespie-like algorithms and Dissipative Particle Dynamics Simulations.