Breakout session on structural plasticity

Sandra Diaz

In this session we will cover the state of the art research and future directions of simulation and modeling of structural plasticity and generative connectomics. We will examine modeling and simulation of connectivity generation from two perspectives:
1. Neural development and structural plasticity in biological neural networks
2. Generation of connectivity for biological and artificial neural networks

In specific we will discuss about different models of structural plasticity, the current available implementation in NEST and other simulation / emulation platforms as well as the intersections among them. We will also cover implementation details such as: identification of data and computing requirements, separation between simulation of activity and structural dynamics, management of computing resources, and implementation of interfaces. Discussion will also focus on how to collectively move forward in this field in order to provide more flexibility to modelers and researchers while preserving computational efficiency and a standard language which allows sharing and comparing among platforms.

Potential participants to this session would be modelers, computational and experimental neuroscientists, developers, experts in simulation interfaces, and experts in interactive data analysis and visualization.