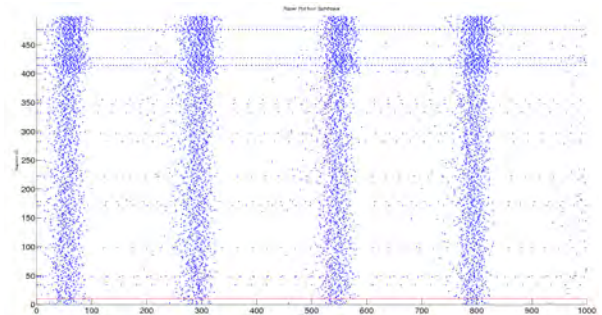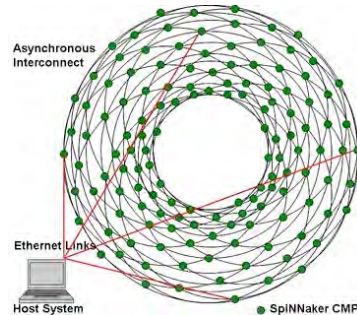*Neuroengineering Seminar*

# The SpiNNaker System: a Universal Spiking Neural Network Architecture



## Sergio Davies and Francesco Galluppi

**University of Manchester, UK**
**http://apt.cs.man.ac.uk/projects/SpiNNaker**

**Monday, July 18, 2011**
**4:00-5:00pm**
**Fung Auditorium, Powell-Focht Bioengineering Building**
**University of California San Diego**

The SpiNNaker system offers a biologically-inspired massively-parallel architecture for modeling and exploration of systems composed of a large number of neurons. Each node (SpiNNaker chip) of the multi-chip multi-core system comprises 18 off-the-shelf ARM968 cores interconnected through a custom packet-switched Network-on-Chip (NoC) based on Adress-Event Representation (AER). While promising to scale to a large number of chips in a power-efficient way, the SpiNNaker system offers general-purpose programmability in an event-driven framework. Preliminary results in spiking neural networks and robotics will be presented along with some future applications.

The presentation will include a live and interactive demonstration of the SpiNNaker system.