



Hamilton Institute

Systems Biology of Sponges

Understanding the evolution of integration in animals - new input from systems biology?

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Abstract: So far, systems biology approaches have been adapted to a limited set of model organisms, like bacteria (e.g. *Escherichia coli*), worms (*Caenorhabditis elegans*), flies (*Drosophila melanogaster*), or even parts of them, like cultured cells of mammals. However systems biology could also give valuable input to understand other biological problems than those related to standard laboratory organisms. Sponges (Porifera) are such an example. They represent the evolutionary most ancient living group of animals. Despite the fact they possess no nervous system and no muscle cells these animals show distinct coordinated behaviours, which are related to their mode of living.

A short introduction into the biology of these sponges will be given, followed by recent research results on coordination systems in poriferans (Example *Tethya wilhelma*). Finally, I will present possible concepts, how systems biology can influence experimental design, data acquisition, data analysis and interpretation, to understand basic concepts of integration systems in all animals, based on those systems which evolved first.

Venue: Seminar Room, Hamilton Institute, Rye Hall, NUI Maynooth

Time: 2.00 - 3.00pm (followed by tea/coffee)

Travel directions are available at www.hamilton.ie

