Laura Franklin-Hall (New York University)

The Possibility of Biology

Though by no means ubiquitous, biologists have offered up a number of relatively simple and predictively successful models of exceedingly complex living systems, systems that are ultimately just physical contrivances governed by physical laws. What is it about the combination of our theorizing techniques and the causal architecture of living things that makes it possible to so simply and successfully describe that which is so complex? This paper aims to answer this question in the context of organismal biology. My answer has two parts:

1) a description of a number of generic design features of organisms--among them, modularity and functional, hierarchical embedding, 2) an account of a few equally generic modeling methods. I argue that the match between these illuminates and explains the success of simple organismal models. (Similarly, the periodic absence of a match explains our modeling failures.)