

Boston University Physics Colloquium



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Physical Biology: Is There an Elephant in the Room?

In physics we are attracted by simple and universal phenomena. In biology problems turn out to be often more complicated than anticipated and universality is approximate and rare. One possible reason for this is that biology is essentially a historical science and contingency plays a crucial role. Physical biology tends to ignore this "elephant in the room", mainly by limiting itself to molecular investigations. On the other hand, it could be interesting if one "replayed the tape" of biology multiple times and then performed statistical analysis of evolutionary histories. Maybe simple laws of living matter and universality classes of its behavior could then emerge?

In the meantime, I will present some results of long-term laboratory experiments in closed microbial ecosystems. Each system is a small world in itself, with its idiosyncrasies and (hi)story to tell. Local population dynamics is monitored in dozens of replicates. Surprisingly, statistical laws governing the population fluctuations seem to be quite simple.

Stan Leibler

The Rockefeller University

April 16, 2013 (Tuesday) at 3:30pm (Refreshments at 3:00pm)

SCI 109, Metcalf Science Center, Boston University

Call: Winna Somers (wsomers@bu.edu) (617) 353-9320

Hosts: Shyamsunder Erramilli and Pankaj Mehta