

Statistical Biophysics Blog: Statistical mechanics in biology and biocomputation

<http://statisticalbiophysicsblog.org/>

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[Note: Some posts were originally written at the University of Pittsburgh. Corrections and updates are included in this Digital Commons version.]

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A hello: The point of this blog

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Statistical physics governs the behavior of biological systems from the molecular scale (think protein stability and fluctuations) to the cellular scale (including heterogeneity and stochasticity of cellular behavior). This is not a claim that understanding statistical physics, a.k.a. statistical mechanics, implies an understanding of cell biology. But I do claim that cell biology cannot be understood without statistical physics.

This blog is not intended as an introduction to ‘statistical biophysics’, let alone a comprehensive view, but rather attempts to shine a spotlight on a subset of interesting issues. The goal is to emphasize and clarify topics over a range of levels that may help researchers, teachers and students. For example, the first post discusses how to derive the exact relation between the mean first-passage time and the probability flux in a steady state, and the second is a light-hearted piece for beginning students on the analogy of hair-gel application to protein-ligand binding.

Some planned posts include: potential dangers of the Markovian assumption in modeling dynamics, and how to clean a wall by sweeping the ground nearby.

I hope you find it interesting, and please email me with any comments or suggestions:
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