

MIT Physical Chemistry Seminar



Prof. Christopher Jarzynski

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Tuesday, October 9, 2012
4:30 PM, Room 6-120

“The second law of thermodynamics at the nanoscale”

How do the laws of thermodynamics apply to individual systems at molecular length scales? I will address one aspect of this question, summarizing recent progress related specifically to the second law. I will describe how three macroscopic signatures of the second law – dissipation, hysteresis and the arrow of time – scale down to microscopic systems, revealing genuinely novel features of nanoscale thermodynamics. In particular, I will show how a proper accounting of fluctuations allows us to rewrite familiar inequalities of macroscopic thermodynamics as equalities.