

Department of Physics & Astronomy
Dr. Stuart Lindsay

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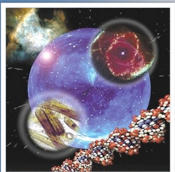
Friday, April 5, 2013

Time: 3:00 p.m. - 4:00 p.m.

BB 3.04.18

Quantum Mechanics, Biology and Noise

Many physicists have asked whether or not some of the strange phenomena of quantum mechanics explain some of the mysteries of life. Noise is the enemy of large-scale quantum phenomena like entanglement, and in this talk I shall show that noise is the driving force behind life. For this reason quantum mechanics is important only at the nanometer scale of electron transfer. Even here noise plays an important role. We have developed a technology we call Recognition Tunneling to explore quantum fluctuations in chemical bonding. It turns out to be a powerful analytical tool, which, because it could be built into a tiny silicon chip, might one day replace mass spectroscopy as a tool to analyze human proteins.



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