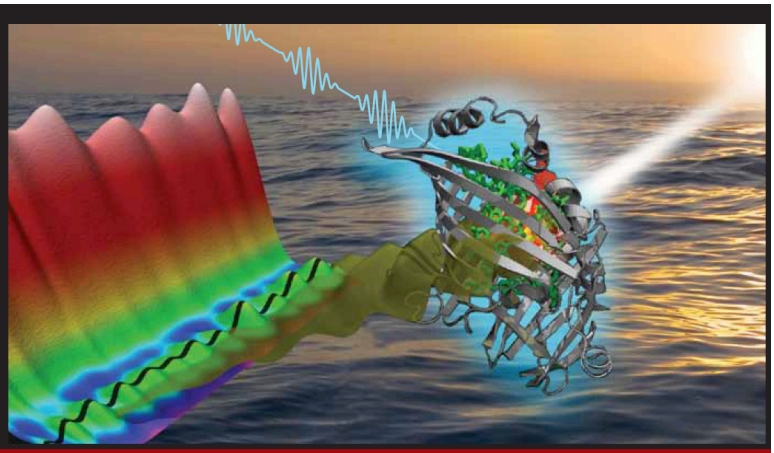
3:30 pm • Friday January 25, 2013 • 2241 Chamberlin Hall • Coffee at 4:30 pm

K. Birgitta Whaley

Dept of Chemistry, University of California, Berkeley



Quantum Coherence in Biology

Department of Physics Colloquium

WISCONSIN

Recent years have seen mounting evidence for the existence of dynamical phenomena in biological systems that involve coherent quantum motion, requiring us to revise the long standing view of quantum effects in biology being restricted to understanding of molecular energetics, stability and kinetics. I shall describe the considerable evidence that quantum coherent electronic dynamics contributes to the extremely efficient light-harvesting stage of photosynthesis, then present theoretical studies that analyze the nature of this coherence, its relation to the non-local quantum correlations characteristic of entanglement, and a possible functional role for long range unidirectional energy transport.

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