What role does Quantum Mechanics play in Biology?
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The discovery of quantum mechanics immediately transformed both physics and chemistry, and questions were soon asked about its implications for biology. The first era of quantum biology focused on the structure and stability of biological entities like molecules. A second era began in the 1960s, with lasers allowing experiments on the very short time scales relevant to atomic and molecular motions. Today, we have novel nanoprobes of real living cells, and evidence for biological phenomena that may involve highly non-trivial quantum effects such as long-range coherence and entanglement.

I shall review some of this history, and then describe studies of dynamical quantum effects in biological systems, discussing the diverse questions that these studies raise for our understanding of the biological we inhabit.

About PITP Lectures on Quantum Phenomena

These monthly seminars will provide a forum to discuss topics in foundations of physics and philosophy of science, centering on the "quantum revolution" and its impact on science, philosophy, and society at large. The lectures are open to the public and are intended primarily for non-specialist audiences, though some technical detail is unavoidable. For details see http://pitp.physics.ubc.ca/quant_lect/, or contact Philip Stamp, stamp@physics.ubc.ca, or Steve Savitt, savitt@interchange.ubc.ca.