

Thought, matter, and quantum theory

Students and faculty in academic institutions across Montreal are invited to join us for a **Ludmer Centre lecture on quantum theory and consciousness.**



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Date: February 13, 2019

Time: 1:15-2:30 pm

Location: Jeanne Timmins Amphitheatre, The Neuro, 3801 University Street, Montreal ([see map](#))

Free registration via [Eventbrite](#)

For more information, visit the [Ludmer Centre event page](#) or contact info@LudmerCentre.ca

[Lucien Hardy](#) is a theoretical physicist at the [Perimeter Institute for Theoretical Physics](#) in Waterloo, Canada. He is known for his work on the foundation of quantum physics including Hardy's paradox, a thought experiment he devised in 1992, and his widely cited 2001 axiomatic reconstruction of quantum theory that led to a surge of papers in this area. He is working on operational approaches to Quantum Theory, Quantum Field Theory, General Relativity, and Quantum Gravity.

Abstract: It is deeply mysterious that consciousness can arise in the physical world. In this talk I will look whether we can gain any insight into this by thinking about the foundations of quantum theory. I will develop three separate strands of thought. The first is that quantum theory is fundamentally an operational theory – it invokes the notion of agents making choices and making observations. The second strand concerns computation. If we think of the brain as a computer of some sort, then we need to have the right theory of computation. Is the brain a classical computer, a quantum computer, or even a quantum gravity computer? The third strand concerns quantum entanglement. I will discuss an experiment in which humans are used to switch the settings at each end of an experiment in which quantum entanglement is shared over a large distance (1000km) and the implications an anomalous result would have for the study of mind.



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