

Department of Physics and Astronomy Colloquium Series

Tuesday, October 7, 2025, 2:30pm in PSE 317

Speaker: Terry Rudolph

Institution: Imperial College London

Title: Quantum computing at the speed of light

Abstract:

There is currently an intense effort worldwide to build a useful quantum computer. The overhead of error correction means that such a machine needs millions of physical qubits to be able to do computations with a few hundred logical qubits. At PsiQuantum we use photons as our basic carriers of quantum information. I will discuss their strengths and weaknesses, which tend to be very different from those of matter based qubits. I will then overview what we are doing to build a useful machine, which has necessitated fabricating, networking and assembling devices on scales from the Angstrom to the kilometer.