TRENT UNIVERSITY
PHYSICS & CHEMISTRY SEMINAR PROGRAM

WEDNESDAY, OCTOBER 5, 2016

Dr. Kevin Resch
Institute for Quantum Computing and Department of Physics & Astronomy University of Waterloo

Entangled photon triplets:

cascaded down-conversion and quantum nonlocality

ABSTRACT

Subtle quantum mechanical effects are the foundation for exciting new applications in computing, communication, and sensor technologies. I will give a short overview of this young field: quantum information science and technology. Entanglement is one of the quantum phenomena that features especially prominently in this area.
I will describe how entanglement can be generated in optical systems through nonlinear optical effects. Then I will describe some of our recent results related to three-photon optical entanglement. The first such work centers on a new quantum light source using a cascaded nonlinear optical process*. The second work describes a long-distance entanglement distribution experiment which closed the locality loophole in a test of quantum nonlocality**.

*joint work with Thomas Jennewein (U Waterloo) **joint work with Thomas Jennewein (U Waterloo), Raymond Laflamme (U Waterloo), and Gregor Weihs (Innsbruck)

SCIENCE COMPLEX ROOM 115

11:00 AM

All Welcome!

Check schedule on the web for updates: http://www.trentu.ca/physics/seminars.php