

Abstract Submitted  
for the DAMOP15 Meeting of  
The American Physical Society

**Developing a Parametric Downconversion Apparatus for Single-Photon Experiments in Quantum Optics** STEPHEN DIORIO, Union Coll —

We report our progress toward developing a parametric downconversion apparatus for studying single-photon quantum optics in undergraduate laboratory classes, following the model of Galvez, et al. (Galvez, E. J., et al., *Am. J. Phys.* 73, 2 (2005)). We pump a beta barium borate (BBO) crystal with a 405nm diode laser to produce correlated pairs of single-photons that we detect using avalanche photodiodes (APD). We can conduct coincidence and anti-coincidence counts and a measurement of the degree of second-order coherence with the apparatus, and we expect to report on single- and bi-photon interferometry experiments.

Stephen DiIorio  
Union Coll

Date submitted: 02 Feb 2015

Electronic form version 1.4