

Abstract Submitted
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Photon Quantum Mechanics in the Undergraduate Curriculum¹

BRETT PEARSON, ZACK CARSON, DAVID JACKSON, Dickinson College — Although it has been discussed for centuries, the true nature of light is still being debated. In fact, the quantum mechanical aspects of light have only been observed within the past 30 years. Recent advances in technology have decreased the complexity of such tests, and the Department of Physics and Astronomy at Dickinson College has worked to infuse various quantum optics experiments throughout our curriculum. We describe a set of experiments that includes the existence of photons, single-photon interference, the quantum eraser, and tests of Bell's theorem. A primary motivation is bringing undergraduate students face to face with some of the fascinating and subtle aspects of quantum mechanics in a hands-on setting.

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