



# INSTITUTE COLLOQUIUM

Monday, 13 January 2014

4.00 pm

Boson

Speaker:

**Prof. Stephen C. Rand**

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Title:

***Optical Magnetism:  
An Anecdote on Discovery in the 21<sup>st</sup> Century***

Abstract:

The pace of scientific advancement has become so rapid and predictable in recent decades that one may question whether traditional scientific methods are the best to use for discovery in the 21<sup>st</sup> century. Is discovery accelerated by prioritizing near-term solutions to practical problems over the pursuit of basic knowledge? Are the traditions of basic science losing their effectiveness when modern computers and search engines involve us more and more in "Google and Go!" rather than "observe, question, analyze, predict, & verify..."? In this talk the recent discovery of transverse optical magnetism will be described in detail to illustrate how one very unexpected discovery and its potential application to the conversion of light energy directly into electricity provide a case study that answers this question with an emphatic no. The relevance of this new phenomenon, high frequency magnetism, to sustainable energy will be outlined to demonstrate that a traditional "search for the truth" still has the power to astonish us with unanticipated practical solutions for the modern world. The anecdote suggests that the search for basic knowledge should continue to be an indispensable ingredient in the way we teach, the way we learn, and the way we go about discovering, far into the future.

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