

From: [Boisvert, Ronald F. \(Fed\)](#)
To: [Division 771 Gaithersburg Staff](#)
Subject: FW: ACMD SEMINAR SERIES
Date: Monday, September 26, 2016 11:33:11 AM
Attachments: [image003.png](#)
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I urge you to consider attending. Scott will be describing a landmark experiment performed in Boulder last fall in which three ACMD staff members had prominent roles. That experiment was cited as #9 in Science News' top 25 stories for 2015. Scott is a great communicator, so I am sure that he will make this understandable to you. This work is also the subject of DOC Gold Medal which is being presented to PML and ITL in recognition of this achievement. Scott is in town to accept the award on behalf of ITL at the DOC Awards Ceremony tomorrow.

Ron

From: itl-bounces@nist.gov [mailto:itl-bounces@nist.gov] **On Behalf Of** Graham, Catherine J. (Fed)
Sent: Monday, September 26, 2016 10:26 AM
To: ITL <ITL@nist.gov>
Subject: ACMD SEMINAR SERIES

APPLIED & COMPUTATIONAL MATHEMATICS DIVISION
SEMINAR SERIES

TODAY

A strong loophole-free test of local realism

Scott Glancy

*Applied and Computational Mathematics Division (ACMD), ITL,
NIST*

Monday, September 26, 2016 15:00-16:00 PM

**Building
225, B111
(Gaithersburg)
Boulder 1-
4058
13:00 -
14:00 PM**

ABSTRACT: The principle of local realism says that any physical system has pre-existing values for all possible measurements of the system, and those values depend only on events in the past lightcone of the system. Although this principle seems natural from the perspective of classical physics, it is violated by quantum theory. In this seminar, I will describe NIST's experiment demonstrating a loophole-free violation of local realism using entangled photon pairs, a goal of fundamental physics for more than 50 years. Successful execution of the experiment required development of a high-fidelity entangled-photon source, high-efficiency single-photon detectors, and new statistical analysis techniques. Using a hypothesis test, we compute p-values as small as 5.910^9 , rejecting the hypothesis that local realism governs our experiment.

For further information, contact Wesley Griffin; (301) 975-8855; wesley.griffin@nist.gov

Note: Visitors from outside NIST **must** contact Cathy Graham; (301) 975-3800; catherine.graham@nist.gov; at least 24 hours in advance.

*Cathy Graham, Division Secretary (771)
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