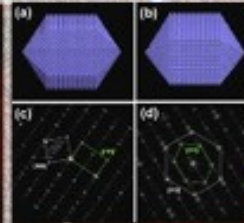
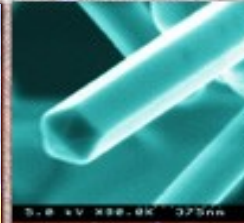


College of Sciences presents Colloquium Speaker

Dr. Marlan Scully

Distinguished Professor
Department of Physics—Texas A & M University



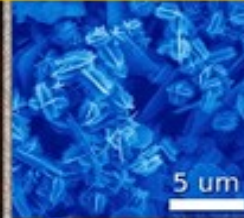
Friday October 16, 2009

Time: 10:00 am—12:00 noon

Retama Auditorium: UC 2.02.02

Colloquium Titled:

**THE PHOTON SHEDS LIGHT ON THE QUANTUM:
Fluctuations and correlations tell the story**



Department of Physics & Astronomy

Colloquium Abstract:

The study of fluctuations and correlations has historically been a royal road into quantum mechanics. Planck fit the spectrum of thermal light by focusing on its entropy. Einstein used Planck's entropy to calculate the fluctuations of thermal radiation and discovered the particle nature of light.

From one point of view, quantum optics began with the photon-photon correlation interferometry experiment of Hanbury-Brown and Twiss which involves thermal light. The quantum eraser combines entangled light with photon-photon correlations yielding the first entanglement interferometer. In particular, we shall discuss how the availability and/or erasure of information in one point in space-time affects how we interpret data in another. In the words of Aharonov and Zebairy:

“The quantum eraser effect dramatically underscores the difference between our classical conceptions of time and how quantum processes can unfold in time. Such eyebrow-raising features of time in quantum mechanics have been labeled ‘the fallacy of delayed choice and quantum eraser’ on the one hand and described ‘as one of the most intriguing effects in quantum mechanics’ on the other.”

Short Biography:

Dr Scully is Burgess Distinguished Professor of Physics at Texas A&M, holds the TEES Distinguished research chair, and is Director of the Center for Theoretical Physics and the Institute for Quantum Studies. Prof. Scully is best known for his work in quantum optics. His contribution to the field has been recognized with numerous distinguished awards. Prof. Scully is a member of the National Academy of Sciences, the American Academy of Arts & Sciences, the Academia Europaea, and the Max Planck Society. He's a recipient of the Charles H. Townes Award of the OSA, the Quantum Electronics Award of IEEE, the Elliott Cresson Medal of the Franklin Institute, the Adolph E. Lomb Medal of the OSA, a Guggenheim Fellowship, the Alexander von Humboldt Distinguished Faculty Prize, the APS Arthur L. Schawlow Prize, and has been appointed to a Harvard Loeb Lectureship.

Reception immediately following the Colloquium