

# Colloquium Notice

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### *Photonics of Random Media*

Interest in wave propagation in random medium has been constantly growing due to the increasing number of wave objects that can be propagated and studied in random environments. This includes acoustic waves in the Earth's mantle, electromagnetic waves in disordered dielectrics, electrons in quantum dots, and Bose-Einstein condensates in optical potentials. In this talk, two apparent extremes of wave propagation in random media will be discussed and related on the basis of the overarching physical principle governing their behavior - Anderson localization. First, I will present the latest developments in the field of random lasing, in which the localization of photons in random and quasi-periodic structures results in lasing action, which ordinarily is suppressed by disorder. Then, the great potential of using photons as the building blocks of random and periodic media, rather than being exclusively the propagating entities, will be discussed. I will consider the example of the *localization of cold atoms* in random photonic structures created by light. The advantages and future directions of research along these complementary approaches to the photonics of random and periodic media will be outlined.

Wednesday

**February 11, 2004**

Starts at 12:15 PM

Coffee at 12:00 PM

Physics Conference Room, SB B326