

# Colloquium Notice

## Yaron Bromberg

Yale University

### *Coherent backscattering in multimode optical fibers*

Coherent backscattering, also known as weak localization, is one of the most striking examples of the subtle interplay between interference and disorder in scattering samples. Due to constructive interference between time-reversed paths inside the sample, the backscattered intensity exhibits a peak exactly at the direction opposite to the incident wave. Recently we have discovered an analogue of coherent back scattering in multimode optical fibers with strong mode mixing. I will discuss how fibers provide new opportunities to directly access and control the relative phase between the time-reversed paths, allowing us to flip the backscattered peak, and turn it into a dip. I will then show how we utilize correlations between the time-reversed paths for secure optical key distribution.

Monday

**September 22, 2014**

Starts at 12:15 PM

Coffee at 12:00 PM

Physics Conference Room, SB B326