The **Department of Mathematical Sciences** presents a Colloquium with

Professor Nikolaos Tzirakis
University of Illinois at Urbana-Champaign

Thursday, April 7, 2016
4 – 5 pm
Rm 120 WCharlton Hall

The initial and boundary value problem for the cubic nonlinear Schrödinger equation

In this talk I will discuss the well-posedness theory and the regularity properties of the cubic NLS. I will first review the theory for the case of the NLS equation on the real line and on the torus (periodic boundary conditions). I will then consider the NLS equation on the half line. In all cases we can prove that the nonlinear part of the cubic NLS is smoother than the initial data. The gain in regularity turns out to be the same in all cases. Our methods simplify some ideas in the well-posedness theory and the propagation of regularity for initial and boundary value problems for dispersive PDE and can be extended to nonlinear dispersive systems.
This work is joint with B. Erdogan.

**Refreshments will be served 3:15 – 3:45 pm
in the Faculty & Graduate Student Lounge
Rm 4118 French Hall**

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