

NORTHWESTERN INSTITUTE ON COMPLEX SYSTEMS PRESENTS

# Wednesdays

@NICO



## *Optimal Mechanism Design: From the 2007 Nobel Prize in Economics to the Foundations for Internet Design*



**Jason Hartline**

**Electrical Engineering & Computer Science, Northwestern University**

**Wednesday, October 15, 2008**

**12:15 – 1:15 PM (NEW TIME!)**

**Chambers Hall, 600 Foster Street, Lower Level Classroom**

As the Internet has developed to become the single most important arena for resource sharing among parties with diverse and selfish interests, traditional algorithmic and distributed systems approaches are insufficient. To prevent undesirable Internet phenomena such as spam in email systems, bid-sniping in eBay's auction marketplace, free-loading in file-sharing networks, and click-fraud in Internet advertising; game-theoretic and economic considerations from auction theory must be applied.

This is a talk in two parts. The first part reviews the 2007 Nobel prize winning work of ex-Northwestern professor Roger Myerson. Unfortunately, this work is inappropriate for application to Internet settings because it (a) requires monetary payments, and (b) only results gives mechanisms that must be tuned carefully to the setting at hand. Whereas, (a) the Internet supports no infrastructure for monetary payments and (b) successful Internet protocols must function well in a wide range of settings. In the second part of the talk we address both of these issues.

The second part of the talk is joint work with Tim Roughgarden.

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**NICO Coffee Hour will follow for questions, networking, and collaboration.**

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