“Recent Railroad Research at Northwestern”

**Tuesday, Sept. 20, 2011**
3:00 pm – 5:00 pm
Refreshments available at 2:30 pm

**Location:**
Transportation Center
Chambers Hall, 600 Foster
Evanston, IL

This special seminar event will feature two members of the Northwestern University community – discussing recent research projects relating to railroad operations, safety and infrastructure maintenance.

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**Professor Ian Savage**, NU Department of Economics and the Transportation Center

"Geographical Analysis of Railroad Pedestrian Fatalities in Metropolitan Chicago 2004-10"

There were 260 pedestrian fatalities on railroads in the six-county Chicago metropolitan area between 2004 and 2010. These can be divided in suicides (120 fatalities), non-suicidal fatalities at crossings and stations (59 fatalities), and non-suicidal fatalities not at crossings or stations (81 fatalities). A publicly-available geographical mapping program (Google Earth) was used to plot the location of these incidents. This allowed insights to be gained on the relatively risk on different rail lines and in different communities; and possible links to land-use patterns, community demographics, rail traffic, track geometry, grade separation, and the known location of Operation Lifesaver events during the same time period.

This work was conducted jointly with Ken Fuller (Minor in Transportation and Logistics 2011, now with the Canadian National Railroad)

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**David Kosnik**, Research Engineer, NU Infrastructure Technology Institute (ITI)

"Toward a State of Good Repair for Railroad Bridges through Structural Health Monitoring"

Bringing bridges and other transportation infrastructure to a state of good repair in spite of limited resources is a key challenge facing infrastructure owners. We have developed a remote structural health monitoring system to provide objective information for maintenance and rehabilitation decisions and deployed it on a century-old in-service Chicago Transit Authority (CTA) mainline bridge. The monitoring data provide quantitative indicators of the performance of temporary supports on this bridge, which in turn can be used to estimate the rate of deterioration of the original structure for use in asset management decisions. The performance data from this bridge is also an indicator of the expected performance of dozens of similar CTA bridges, helping the agency manage these critical links effectively in the years to come.
**Bios:**

**Ian Savage:**
Ian Savage is a transportation economist with appointments in both the Department of Economics and the Transportation Center at Northwestern University. He specializes in research into urban public transportation and the economics of transportation safety. Savage has published widely on the economics of transit finances and operations and, more specifically, the impacts of competition and privatization. During the past twenty years, he has conducted research into the safety performance, and the effectiveness of safety regulations, in most modes of transportation -- with particular emphasis on the trucking and railroad industries.

**David Kosnik**
David Kosnik is a research engineer at the Northwestern University Infrastructure Technology Institute. He has degrees in computer engineering and civil engineering from Northwestern and is a registered professional engineer in Illinois. His research interests include structural health monitoring, especially continuous remote monitoring, monitoring data management and visualization, and acoustic emission testing, to help bring transportation infrastructure to a state of good repair.