

## CE 890 Graduate Seminar

**SPEAKER:** Paul Bartley, M.S. student (Advisor: Dr. Dunja Peric)

**TOPIC:** “Characterization of the Sand Stabilizing Potential of a Plant Derived Biomass”

**DATE:** February 23, 2011

**TIME:** 4:00 p.m. (refreshments at 3:45 p.m.)

**PLACE:** 2144 Fiedler Hall

### ABSTRACT

Lignosulfonate is a co-product extracted from plant-life during biofuel production. It contains the complex compounds that provide mechanical strength in plant cell walls. In an effort to develop new, sustainable methods of improving road performance, the natural characteristics of lignin are being researched for their ability to stabilize soil and maximize its strength and service life in transportation structures. Testing is being conducted on clean sand passing the No. 20 sieve to serve as the aggregate in the specimen recipe. The soil/lignin mix design will involve testing soil at lignin content percentages of 2%, 4%, 6%, 9%, and 14% by dry soil mass. The soil specimens will then be sheared to failure in the direct shear machine at different normal stresses in order to note the variation in the strength parameters: cohesion and angle of internal friction.