

**APPLIED MATHEMATICS SEMINAR**  
Department of Mathematics  
University of West Georgia  
**4:00 PM, MONDAY, FEBRUARY 5, 2007, BOYD 330**

Speaker: Dr. Scott Gordon, UWG

Title: **Nonuniformity of deformation preceding shear band formation in a two-dimensional model for granular flow**

**Abstract**

The onset of shear band formation in granular materials has been linked to the governing partial differential equations becoming ill-posed which has in turn been linked to nonassociativity of the flow rule. If uniform material properties and uniform deformation are assumed, ill-posedness occurs simultaneously at all points in the sample. This work derives a one-dimensional from a two-dimensional model for granular flow with a nonassociative flow rule and shows that, shortly before the onset of ill-posedness, deformation can become highly non-uniform at a point where the material is slightly weakened.

All are welcome.