

**DISCRETE MATHEMATICS SEMINAR**  
Department of Mathematics  
University of West Georgia  
**4 PM, MONDAY, NOVEMBER 28, 2005, BOYD 330**

Speaker: Dr. Rui Xu, UWG

Title: **Nowhere-zero  $Z_3$ -flows through  $Z_3$ -connectivity**

**Abstract**

Let  $\Gamma$  be an abelian group. Jaeger, et al (J. of Combi. Theory Ser. B, 1992) introduced a class of graphs which they call  $\Gamma$ -connected. The main interest in  $\Gamma$ -connected graphs is that every  $\Gamma$ -connected graph admits a nowhere-zero  $\Gamma$ -flow. We found some families of  $Z_3$ -connected graphs. Our results generalize an early theorem by Lai (J. of Graph Theory, 2003) for nowhere-zero  $Z_3$ -flows in locally connected graphs, and provide a simplified proof of a theorem of Xu and Zhang on nowhere-zero  $Z_3$ -flows in squares of graphs. This is a joint work with Matt DeVos (Princeton) and Gexin Yu (UIUC), and it is just accepted for publication in Discrete Mathematics.

All are welcome.