

Subject: MS Colloquium, 5/18, 11am, 200 AUDITORIUM
From: Janice Coble <coble@anl.gov>
Date: Tue, 02 May 2006 09:35:54 -0500
To: msd@anl.gov

MATERIALS SCIENCE DIVISION
COLLOQUIUM

SPEAKER: KEN GRAY
Materials Science Division
Argonne National Laboratory

TITLE: Metals, Insulators and their
Transitions: Strongly Correlated
Manganites

DATE: Thursday, May 18, 2006

TIME: 11:00 a.m.

PLACE: Building 200, AUDITORIUM

HOST: Suzanne te Velthuis

Refreshments will be served at 10:45 a.m.

Abstract: Strongly correlated electronic materials exhibit some of the most extraordinary properties that are tunable by substitution or doping. Their richness is in part due to an intense competition between order parameters. A broad range of phenomena are found in the layered manganites by varying doping, temperature and magnetic field. These include: Anderson localization, first-order and continuous metal-insulator transitions, orbital and charge ordered insulators, weak localization and a reconstructed surface bilayer, on a ferromagnetic metallic manganite, that is insulating and non-FM. Based on this research we propose important modifications to the evolving phase diagram of the layered manganites.