CALENDAR

February 20  Brown bag meeting will be held from 11:30 – 1:00 in B5 JH

February 20  Kohn Colloquium at 3:30 pm in 219 JH

Speaker:  Frank Weirich, Associate Professor, Department of Earth & Environmental Sciences, The University of Iowa

Topic:  The Development of a Flood-Debris Flow Decision Support Warning System in a High Energy Environment – or – When Do We Evacuate?

Refreshments will be provided by the Geography department at 3:00 pm in the third floor GSS atrium.

ABSTRACT
The development of a highly integrated, multi-level, flood-debris flow warning system operating in near real time in a higher energy, rapid response, mountain environment will be presented. The watershed used in this study is located in the relatively rugged coastal region of Orange County, CA. Over a period of 70 years, it has undergone 13 major flood/debris flow events resulting in tens of millions of dollars in damage and, in several instances, the loss of lives. Moreover, an evaluation of the dynamics of the watershed's behavior indicated that the effective response time between flow event initiation and impact on critical locations was on the order of 15 minute or less making it an ideal site for the study and the implementation of such a warning system. The warning system developed to operate in these time frames and in such relatively harsh conditions consists of: 1) an integrated regional radar/local radar monitoring system combined with a regional/local near real time rain gauge reporting system; 2) a network of in-situ slope water level monitoring sensors reporting hillside saturation levels in near real time; 3) a network of channel camera and water level monitoring systems tracking channel flow levels in near real time; 4) an integrated central computer monitoring system bringing all of the information together at an emergency operations center and containing a multi-level threshold based alarm system; 5) a communications system to allow both centralized and remote access to the data streams as well as a reverse 911 information dissemination system; and 6) a 5 level decision support system to assist in determining the timing and selection of appropriate response levels and warnings. The last two elements were deemed critical in terms of enabling informed decisions regarding evacuations, resource deployment, and other emergency response decisions by individuals, groups and agencies tasked with dealing with the threats posed by the flood and debris flow events that occur in this area. The system is presently in operation.
Reminder: Please email any recently received awards, notable presentations or exciting news to angela-bellew@uiowa.edu by Tuesday at 2:00 p.m. to be included in the weekly newsletter.