

## center for embedded networked sensing

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### 2007 summer course

# sensing technology for the soil environment

july 9-12, 2007 • james reserve • riverside, california

*Next generation ecological observing systems make use of advanced sensors and actuators, wireless communication, low-power processors, and sophisticated architectures and algorithms to provide novel views of ecosystems and ecosystem processes. This four-day course surveys some of these technologies and their application to investigations of soil-plant interactions. Participants will evaluate the theory and use of observing technologies to measure energy, carbon, nutrient, and water fluxes at the soil atmosphere interface, including hands-on investigations and analyses of spatial and temporal variation.*

### Instructors

Michael Allen, UC Riverside  
Eric Graham, CENS, UC Los Angeles  
Michael Hamilton, James Reserve, UC Riverside  
...and others

### Structure

The course begins on Monday evening with dinner, a welcome introduction by reserve director Michael Hamilton, and an overview lecture by CENS Director, Deborah Estrin. Generally, the mornings consist of lecture and laboratory activities, the afternoons of field measurements, and the evenings analysis of results. Tuesday's focus is on plant physiological process and within canopy flux measurements. Wednesday consists of exploring the soil and soil processes, including exchange between soils, plants, and the atmosphere. The final day, Thursday, brings it all together with consideration of total ecosystem budgets.

### Technology

Wired and wireless sensing system designs and deployments. Below ground sensors (CO<sub>2</sub>, temperature, moisture). Above ground sensors (air temperature, relative humidity, and photosynthetic active radiation). Soil observation chambers (minirhizotrons). Robotic canopy platforms.

### Audience

This course is appropriate for a broad audience, including graduate students, post-doctoral researchers, faculty, field technicians, and field station personnel. Priority will be given to those with an understanding of the biogeochemical aspects of the curriculum so that the focus is placed on the technology and how it can be utilized to investigate these phenomena in novel ways.

### Apply

An application includes a copy of, or link to, a CV or profession webpage and a brief description of the course's relevance to your work. Send applications and questions to Jeff Goldman <jgoldman@cens.ucla.edu> by **April 27, 2007**. Space is limited. Expect notice of acceptance by May 4, 2007. Tuition is \$750 and includes rustic lodging and gourmet meals but not travel expenses to/from the James Reserve.