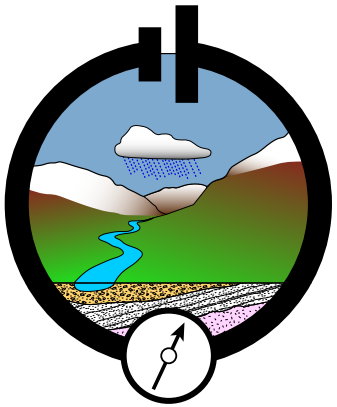

HYDROLOGIC MEASUREMENT FACILITY

Geophysics

There is growing recognition of the challenges we face, in many parts of the world, in finding and maintaining clean sources of water for human consumption and agricultural use, while balancing the needs of the natural world. Advancements in hydrologic sciences are needed in order to develop an improved understanding of the controls on the quantity, movement, and quality of water, thus enhancing our ability to better protect and manage our water resources. Geophysical methods can play a central role in these investigations. CUAHSI (Consortium of Universities for the Advancement of Hydrologic Sciences) is developing, with the support of the National Science Foundation, a Hydrologic Measurement Facility (HMF), which contains a Geophysics module. The Geophysics Module will support and advance the use of geophysics for hydrologic applications.

The research effort to develop the Geophysics Module is referred to as HMF Geophysics, and is led by Rosemary Knight and David Robinson in the Department of Geophysics at Stanford University. Over the next three years (Sept 05-08) we will determine, through broad community consultation, how best to utilize geophysical instrumentation and engage geophysical expertise in addressing key challenges in the hydrologic sciences. Our goal is to put in place the infrastructure needed to develop and maintain partnerships between the hydrologic and geophysical communities.

http://hmfgeophysics.stanford.edu

HMF Geophysics Module: Forming Partnerships

We currently envision the HMF Geophysics Module as supporting three forms of partnership between the hydrologic and geophysical communities:

The Need for Equipment: There are many times when a researcher needs to acquire a certain type of data but does not have access to the equipment. We propose to develop a centralized database to identify sources of equipment within the academic, government and private sectors. We will then determine how best to provide the equipment to the research community. Should the HMF Geophysics Module advertise the availability? assist in negotiating rental agreements? purchase commonly-used equipment? house equipment? maintain equipment? lease equipment? What is the community that we support – do we support only NSF-funded researchers? These are all questions that must be addressed.

The Need for an Experienced User: In many cases an experienced user is needed to operate geophysical equipment and to acquire and interpret data. We propose to develop a web-based system that can serve to connect a person with a measurement need to a person with the expertise and interest in helping – a research match-making service. Some of the questions to be addressed: What community do we serve? At what stage in the research planning and proposal writing/funding does this match-making occur? How do we link this service to that of providing equipment, described above?

Research Collaboration: Full research collaboration between geophysicists and hydrologists is what is really needed to advance our ability to make the measurements required to better understand and monitor hydrologic systems. A white paper will be prepared (to be available April 2006) that will serve to define the vision of HMF Geophysics, identifying the current state-of-the-practice, state-of-the-science, and long term research needs. A workshop will be organized in 2007 for researchers within the hydrologic and geophysical communities who are interested in bridging the gap between the two disciplines, and supporting the development of this level of partnership.

HMF Geophysics Advisory Group

If you are interested in being involved with HMF Geophysics, please contact us:

Rosemary Knight: Dept. of Geophysics, Stanford University
397 Panama Mall, Stanford, CA 94305-2215
rknight@pangea.stanford.edu Phone: (650) 736-1487

David Robinson: Dept. of Geophysics, Stanford University
397 Panama Mall, Stanford, CA 94305-2215
darob@stanford.edu Phone: (650) 723-3522

HMF Geophysics: Upcoming Events

at the Society of Exploration Geophysicists Meeting, Houston, Nov 7-12, 2005:

i) discussion of HMF Geophysics at Near-Surface Geophysics Section meeting, Nov 8

ii) **HMF Geophysics townhall**, Wednesday November 9, from 5-6pm at the George R. Brown Convention Center, room number 318D.

at AGU, San Francisco, Dec 5-9, 2005:

i) Come by the CUAHSI booth in the Exhibits Hall to talk about HMF Geophysics.

ii) CUAHSI reception: Tuesday evening of Fall AGU week (Dec. 6) at the Argent Hotel after the final session (~6:15 pm)

at SAGEEP (Symposium on Application of Geophysics to Environmental and Engineering Problems) 2-6 April 2006, Seattle:

i) A day of **Watershed Geophysics** on Tuesday April 4: over 30 submitted papers to be presented in 3 oral sessions, 1 poster session.

ii) **HMF Geophysics Townhall**, Tuesday April 4, 6:15-7:00

at the Joint Assembly (AGU-GS-MB-MSA-SEG): 23-26 May 2006, Baltimore:

i) A special session has been proposed on: **Characterizing the Subsurface in Watersheds, using Geophysical and Hydro-pedological Methods**

ii) **HMF Geophysics Townhall** – time to be announced

Other Events of Interest

Society of Exploration Geophysicists, Summer Research Workshop: Hydrogeophysics, Vancouver, Canada: 31 July to 2 August 2006

For information on these and other near-surface geophysics events: http://pangea.stanford.edu/research/enviro/conferences.html

Utah State University student Hiruy Abdu in the USDA-ARS Reynolds Creek Experimental Watershed.