

## **Build It and They will Come**

Robert H. Blodgett  
Austin Community College

A project to construct a groundwater monitoring well on an Austin Community College (ACC) campus provides a number of lessons on using limited resources to improve geoscience education at a two-year college. The project started with the help of Francye Hutchins, an enthusiastic 40-something geology student who thought ACC should celebrate the first Earth Science Week. Still ongoing, the well project has received donations of equipment and services from seven businesses, government agencies and non-profit organizations; dozens of hours of volunteer consultation from local hydrogeologists; media coverage in event attended by a state politician, students, and college officials; and after several years of success, a 200 square-foot wellhouse and teaching facility built by the college.

The first lesson learned is to use the enthusiasm and personal/professional connections of geology students to extend educational resources. In addition to being an ACC student, Ms. Hutchins worked as executive assistant to the director of the Texas Mining and Reclamation Association. She used her connections with geologists at Alcoa's Sandow Mine east of Austin to set up a meeting about drilling a well at ACC during Earth Science Week. Initially proposed as a boring to take a core for ACC geology courses, Alcoa approved expanding the project to an automated monitoring well in the Edwards aquifer. Francye also used her connections to obtain an Earth Science Week proclamation from the governor, invite a state official to a ceremony for the well, and a donation for videotaping the well drilling.

A second lesson learned is that a great deal can be accomplished by a grassroots effort. Once Alcoa had offered to drill the well a meeting was arranged with the Campus Manager and Vice President for Facilities Management to identify an acceptable location. No one at the meeting asked about approval for the project, probably because it was to be used for instruction and was a donation to the college. In fact, the entire project has moved forward by asking for volunteer help and donations – there has never been a formal plan, grant proposal, or administrative approval.

The third lesson learned is ask for what you need, let as many people as possible know about your needs, and continue asking until the need is met. One need for the project was a geophysical and video log of the well. Phone calls to the state geological survey produced the name of a manager at Schlumberger, an international well logging firm. When the manager

learned that a state oil and gas commissioner was speaking at the Earth Science Week ceremony, he was ready (based on a telephone call!) to have a Schlumberger logging truck arrive for the event. Unfortunately the truck got diverted and Schlumberger was unable to schedule a latter date, so the need was unmet. Additional calls and emails to local groundwater consultants produced the name of a fledgling logging firm in San Antonio who wanted to expand their market in the Austin area. The firm donated both a geophysical and video log of the well that are used each semester in geology classes and will appear on the Web page.

A fourth lesson learned is that publicity generates enthusiasm, which creates a positive feedback loop. Enthusiasm for the well project has been contagious – students, staff, faculty, and local geoscientists have all been involved with the project. A technician in the computer science department learned about the project and volunteered to administer the computer server for the well. Another science laboratory technician has taken ownership of weekly pumping and data collection on the well, and a third has assumed responsibility for technological upgrades on donated monitoring probes. Additional enthusiastic support has come from a groundskeeper, electrician, telecommunications technician, graphics artist, and computer programmer.

A final lesson has been to approach the use of technology cautiously and expect that most tasks will take longer and be more difficult than advertised. Without specialized technical support dedicated to the geology program, there are major limitations to using advanced scientific instruments and computer applications. ACC's geology program faces this every semester – from security concerns for the well's Website, to new computers and software, and WiFi bandwidth limitations for using Goggle Earth. Whereas technological advances can be both exciting and educationally rewarding, the frustrations of faculty and staff must be continually addressed or enthusiasm will wane or they may meet resistance.

Engaging in a focused geoscience project, such as a groundwater monitoring well, installation of an IRIS seismograph, participation in the Globe Project, water quality monitoring of a stream, lake or estuary, installation of a weather station, or a survey of potential sources of groundwater contamination can reap a multitude of benefits. They include visibility within the college, authentic experiences for students, community service, and an increase in pride and self-esteem for students, staff and faculty. ACC's groundwater monitoring well project provides a number of lessons on how to accomplish this with limited resources. These include engaging students, non-geoscience staff and faculty, and the community in a well-publicized project; using national events, such as Earth Science Week or Earth Day, to focus attention on geosciences at the college; and continuing to ask widely and often for the needs of the geoscience program.