

# Let it Rain

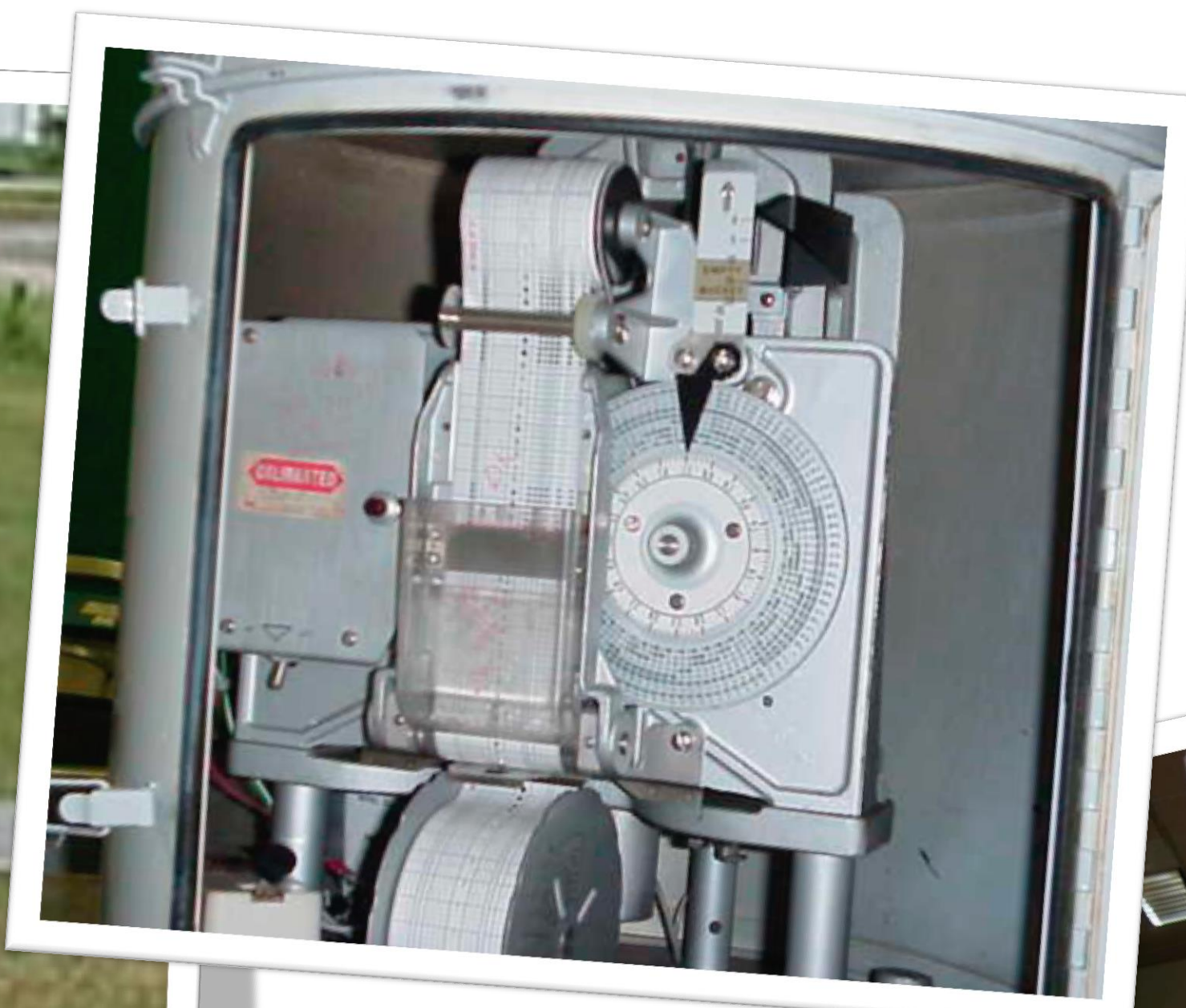
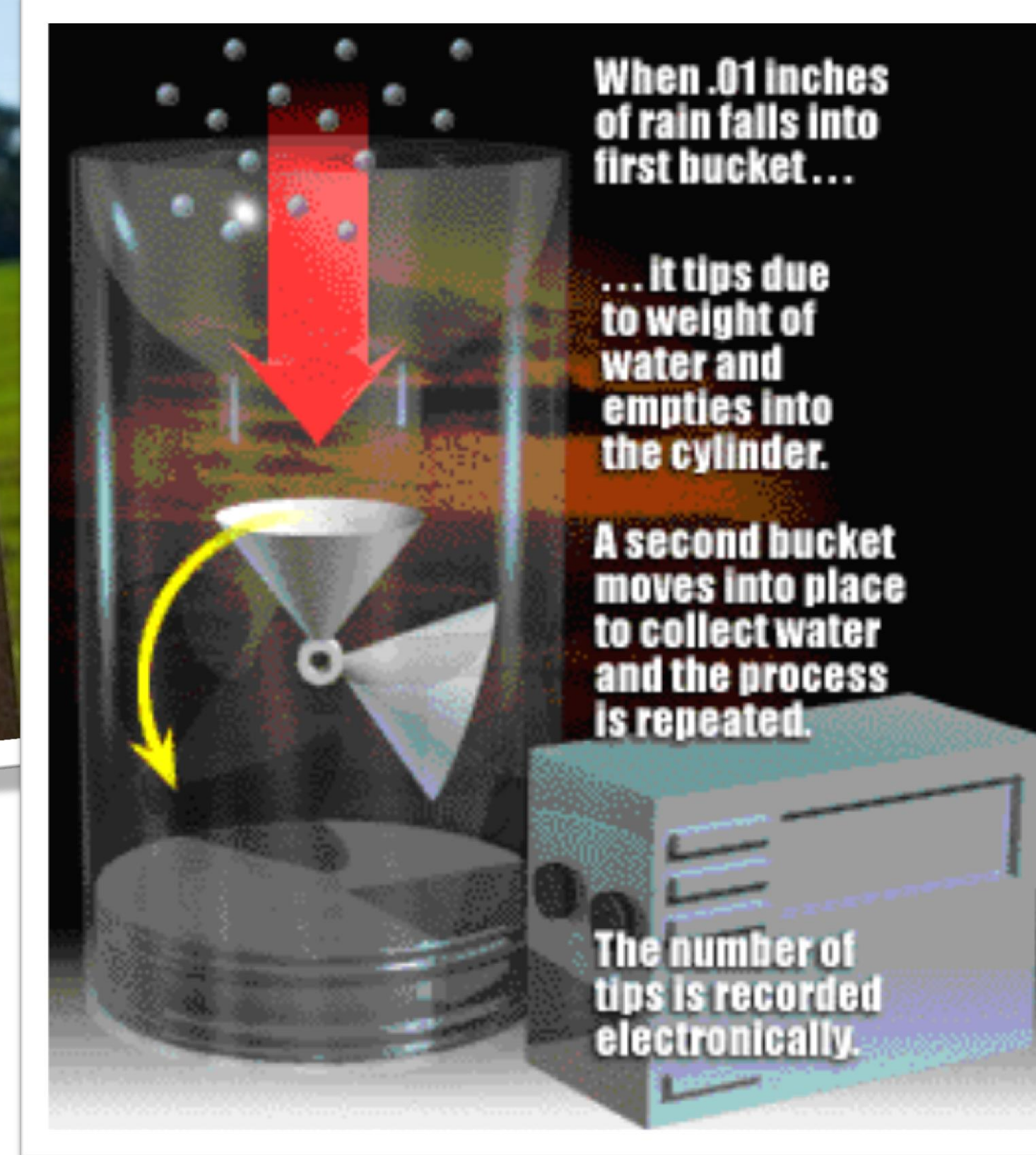
## Purpose

The purpose of this capstone project was to conduct a feasibility study on obtaining a rain gauge for the Cal Poly Pomona Civil Engineering Department to be used for educational purposes.

## What is a rain gauge?

A rain gauge is used to measure the amount of rain that falls during a storm event. Rain gauges come in all shapes and sizes improving greatly over the past few decades, but the overall principle is the same.

Some gauges capture water, determining rainfall either by volume or by weight. Others, such as the tipping bucket, capture a specified amount of water and tip when full. The device then records the number of tips and the rainfall is determined mathematically.



## Interviews with Experts

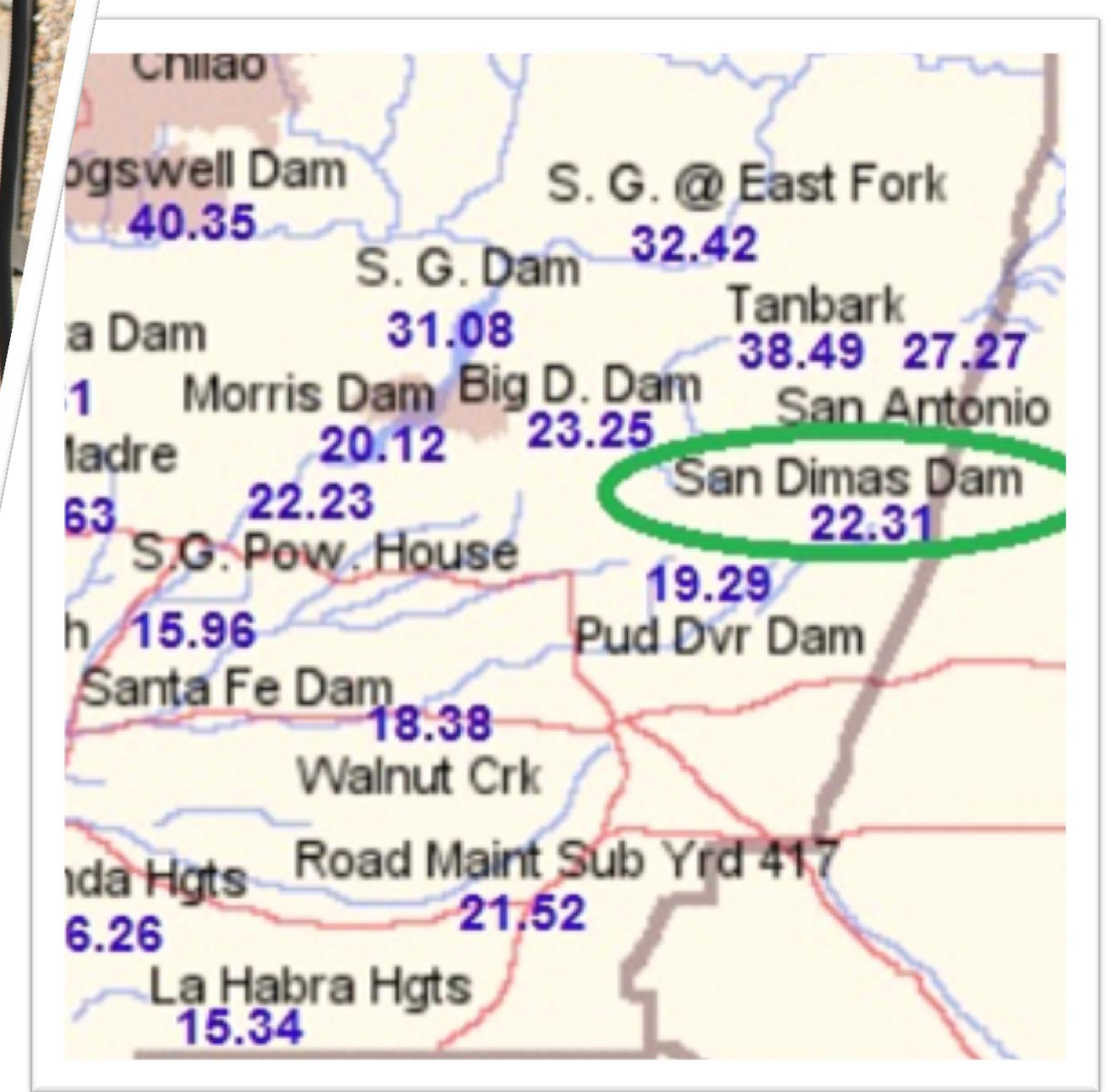
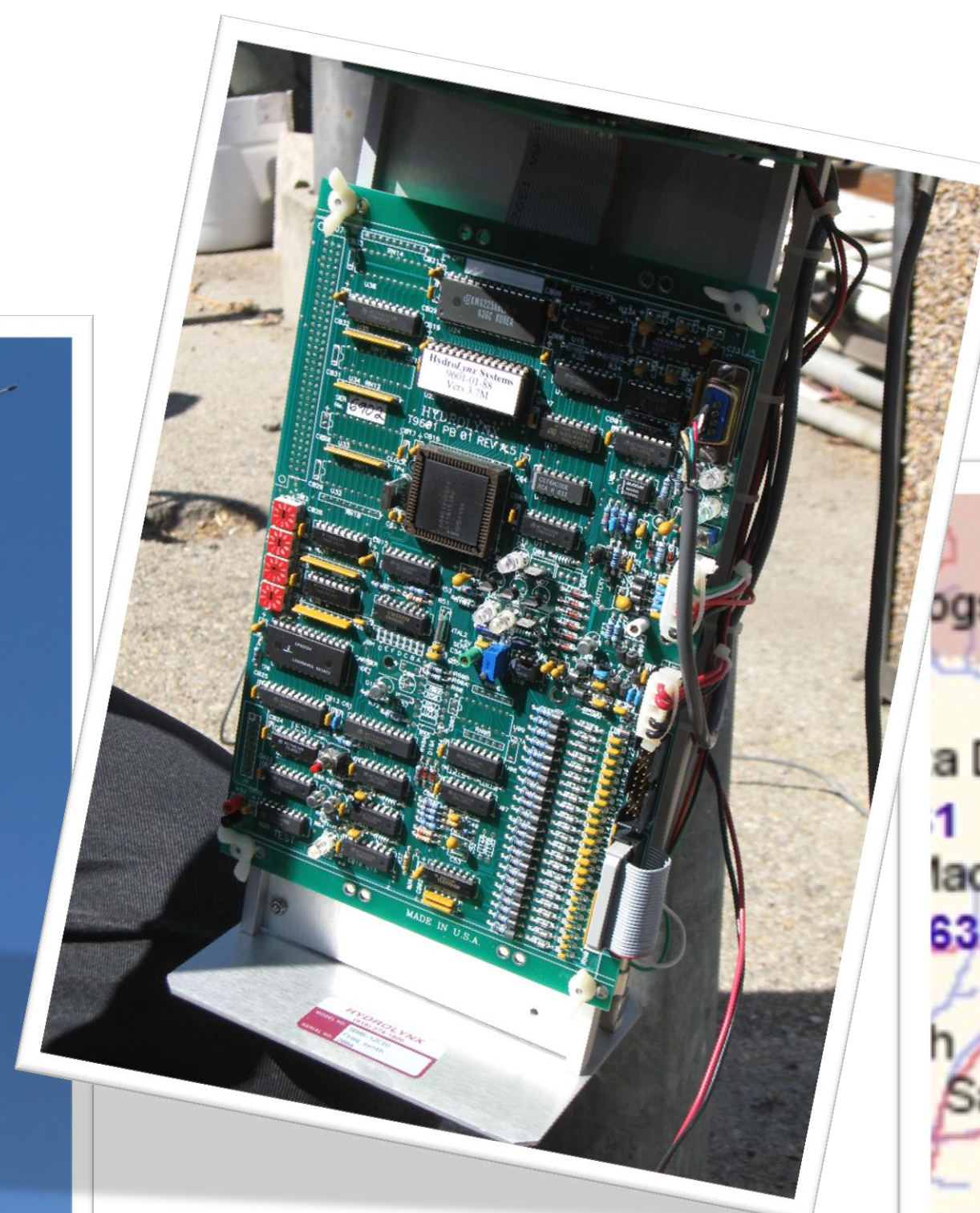
Nicole Carlisle, meteorologist with the National Weather Service in Tampa Bay, Florida recently retrofitted several Fischer-Porter rain gauges taking a clunky mechanical system prone to malfunctions and upgrading to a digital system reducing “down time” and producing more accurate results.

Rodney Brown, principle civil engineering technician for the Water Resources Division of Los Angeles County Public Utilities Department, is responsible for managing all precipitation data collected for LA County.

## ALERT Rain Gauges

ALERT rain gauges record and transmit “real-time” data to LA County via radio transmissions. The ALERT program is a network of water-related gauges used to monitor and manage water resources. LA County operates approximately 500 gauges, several of which are rain gauges.

The closest LA County owned and operated ALERT rain gauge is located at Lanterman Developmental Center, approximately 2 miles south of Cal Poly Pomona. As part of my interview with Rodney Brown, I scheduled a field observation of routine maintenance, a tour of the LA County headquarters, and a field study by LA County to find a suitable location on campus for a gauge.



## Results and Conclusions

Based on my feasibility study and interview with Rodney Brown, LA County donated a demonstration tipping bucket for use in the classroom and is moving the Lanterman Rain Gauge to the roof of Building 9 this summer.

Dr. Fairbank will be able to take students to the roof in Fall of 2011 to see the rain gauge, understand how it works, and understand the importance of precipitation data in developing hydrology models. My capstone project was designed to give back to the Cal Poly community by educating our students while we let it rain.

