

MEET THE TECH

WHO AM I? WHAT DO I KNOW?

My name is Michel Monahan, and I am one of the forefathers of the GreenTech class. I took this class as a JR and I am was one of the first to experience and use the ELab first hand. In this class I learned many skills, such as welding, carpentry, computer hacking and fixing, weather station installation and reading, as well as gaining the creative mind set to be able to use these skills in my class projects. Also Dr. Bill has taught us the science behind these green energy projects as well as how we can improve what we already have. For instance, he has taught me about electricity, and how it is generated and how much is generated with our windmills, solar panels, etc... I have learned a lot this year, and I am looking forward to being a leader next year, and my work being seen as an innovative or as example for future projects to be based from, or something people can look at as one of the first green projects done in the ELab.



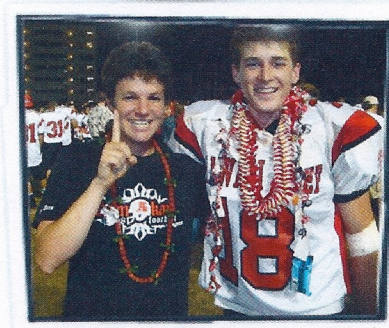
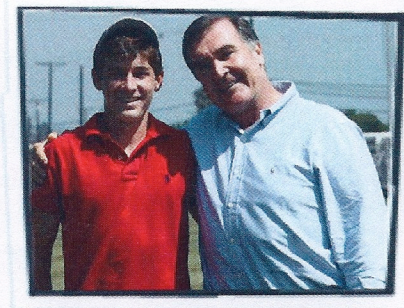
GreenTech 2010

-What the year has been like

This year was a crash course class to create the perfect curriculum to teach students the skills they need to accomplish projects and task in the field of green energy. First semester started out almost as shop class in the physics room. Here we learned all kinds of neat skills, and we began using them and testing them in the field with Dr. Bill. Our first class project was with the TED energy monitoring equipment, we measured and monitored the amount of energy the teachers were using, and how we could make their system more efficient. For this project, we were taught how to install, use and monitor sensory equipment. This is what interested me into specializing in the sensory field.

Second semester most of my time was spent working to get the ELab ready for its opening. We built shelves, tables and installed T.V.s and stereo systems. But we then were assigned to our own individual projects. Here I chose to specialize with the HOBO logging stations. I learned just about everything there is to the HOBOs, and planned a schedule to install all my logging stations. I was successful, and I installed my first station at the ELab farm. I began working with or starting more projects that have to do with weather monitoring, or sensory equipment.

I want to make sure that I document my project well so that it would be easy to learn from my notes and videos. This way people and future students will be able to learn from it and be able to continue and expand the projects I started and pioneered. I can accomplish this, and i can come back many years later and see people continuing my projects, I will know I left my mark here in the ELab and at HPA.





HOBOLogging

-What is HOBO good/ useful for?

The HOBO logging stations are good for collecting information about and measuring weather, power, CO₂, water levels, and etc... The HOBO is only limited by the amount of diverse and highly useful sensors. We use the HOBO to take readings from a place where we are thinking about setting up windmills and solar panels, or planning to station a farm. The HOBO can supply us with the information we need to see if these are adequate locations. Or we can take readings from an already set location, like from Mr. Emmons farm. This will let him know how much rain, and sun his crops are getting. This information can be accessed on the internet from anywhere in the world at anytime.

-Where does its information go?

The HOBO logging station can connect to the internet wirelessly and records its data online. Here any user can log on Hobolink.com and see the data recorded from the sensors from anywhere in the world.

-What is its range?

The HOBO equipment needs to be connected to the internet in order to store and record data. So one can connect it wirelessly or by a LAN line. With the wireless a antenna/dish and a clear unobstructed connection, the HOBO can be placed miles and miles away from the internet source and still be able to log data. This way

we can put the HOBO units way out in the boonies and still be able to read its data with out having to manually check it.

-What can it measure?

The HOBO has a vast array of diverse sensors. I can read weather changes all the way to electricity and power changes. Depending if one would want to read wind, temp, sun, soil, leaf, CO₂, etc... or would want to know the voltage, change in power and heat, etc... Theres a sensor for that.

-What can future student use it for, and how can we get them involved?

I have organized and set up a section of the E Lab that holds all of our Vernir, HOBO, and other weather stations. This makes it easy and accessible to obtain and use this equipment. Next I want to take detailed notes and videos to be able to pass on to the next group of innovators. Also by setting up all these projects and keeping them running, so that new Greentechies can easily jump into using them, and understanding how they work. Just to reinforce that the HOBO gain some recruits next year, I want to get the 8th grade and middle school involved, by setting up an example HOBO to monitor the solar water heating down at the VC. By doing these things, I HOBO to ensure that HOBO will be an easy and useful too to use for Greentech projects.



Elab Farm

The Elab farm is a project that I worked on in partnership with Mr. Deighton Emmons and Ammar Al Nainat. I set up a HOBO at the farm that had a wireless connection to the Elab with Ammars bullets and receiver dishes. The HOBO at the farm is used to supply Mr. Emmons and his freshmen class with data from the farm that tells them what conditions the farm is experiencing that day, week, month or even year. From this data, projects and experiments can be done to test best growing conditions, and the effect of weather on their crops. The HOBO sets the base for so many new projects to start with.