

Taylor, Zachary  
December 18, 2003  
Per. 3 Design Eng.  
Semester Final

### **Benefit Now and Prosper Later**

To summarize this past semester would be complicated to do because of the mass events that took place and the great fortunes that have been bestowed upon us. To be in the Paso Robles High School Endeavour Academy requires, much more than knowledge. It requires skill, dedication and patience, all of which are the qualities of a good student and the qualities of my fellow classmates. To be offered such a class made me feel extremely fortunate and I am happy to have included my self in such a class.

When I walked into the class the first day of my senior year, I had a feeling we would be encountering tremendous projects. But I never thought we would be presented with an opportunity such as inventing a new apparatus and patenting it under our names. The first thing I thought as I pondered this idea was the thought of facilitating mankind's every day tasks. Yet when I thought about what type of tool man still needs, I was presented with a myriad of possibilities. My ideas ranged drastically and many were far too extreme. Yet because we were blessed with such a brilliant instructor, who had been through this process before, we decided on a remote autonomous water quality sensor, which my classmates and me nicknamed project RAWQS. AS we soon found out, this name was no misnomer, the completion of this project was proving to be very hard indeed. But we pressed on, took on responsibilities, studied materials and submitted an extremely well written and well-organized report. Then we sent our project away with our fingers crossed and got back to work in the endeavour laboratory.

Our next step, instead of waiting for an acceptance letter to return, was to each write reports and compile presentations on an aspect of our invention. My task, unfortunately, was to write up a report on methods of data transmission. I knew nothing of this subject, but instead of taking a negative approach to this report, I took it as an opportunity to learn about these aspects. I researched most my information on the internet since most of these technologies were brand new or still in the process of being perfected. I found my-self knee deep in plenty of information about wireless fidelity to radio transmission. After reading these materials for understanding, I compiled a well-rounded report and made a presentation to the class to clear up their understanding on these subjects as well. Yet after submitting these reports to our instructor, we still knew our research was incomplete.

Next we began courses in the study of microcontrollers. Before this class I had no understanding that a microcontroller even existed, yet I always wondered how all the appliances powered by microcontrollers worked. After beginning these courses I realized that these boards were more difficult than I could have ever imagined. I pleaded to my lab partner and my classmates to explain, but the best they could do was show me what to do in the experiments. I felt as if I was learning an Asian language yet I kept on, trying to understand the functions of these mini computers. After the beginning courses we moved into an analog digital course, which seemed even more foreign than the preceding courses. Though the curriculum is difficult I can honestly say I have learned a large amount about these controllers.

The next step we took, was to split up into groups, four were offered. I was placed into the power and enclosure group, which made me very excited because of the

material I could be working with. My free time consists of metal fabrication and hobbies and I figured that I could easily incorporate the groups project into my own free time activities. This was a blessing and I took all my effort to the next level, reading up on enclosure types, designing my own enclosure and making designs to show the class what my intentions actually consisted of. While in the process, I took on a new program called solid works. This program makes it capable for me to digitally design our enclosure and build from the measurements on the computer. This program has facilitated my part of the project in numerous ways. To use these programs and come up with a completely original design was completely compelling to me and I was fascinated throughout the entire design process.

The reason for my taking this class stretches far beyond this year. I hope to take this class with me into college as well as beyond into my career pathway. Next year I hope to attend Cal Poly State University and enter as a mechanical engineer. This major should prove to be very difficult but I think my choices now will influence me greatly in the future and in college especially taking this class. I hope to see my part in this project helping me in the future. The completion of this project should prove to be very beneficial in my admittance to college and will look very good when I can tell my employers that I was involved in a project that got a United States Patent.

Throughout this course I have been frustrated as well as satisfied with the work that we have completed and plan on completing. We have been blessed with a project no other school in California has the opportunity to complete. Not only this, but I feel blessed to have the opportunity to participate in the Paso Robles design engineering class.

With the completion of this project will come hard work, late nights and cups of coffee,  
but if you look into every one participating in this invention, there is no way we can fail.