

A Year in Endeavor

The Endeavor program has been a challenging and enlightening experience. I have learned and experienced skills that will help me later in life, while I conducted experiments in the fields of science and engineering that I am interested in. I got an inside look at what an engineer goes through every day. This program has been one of the best programs I had the chance to be in, and I will use what I learned and experience to show others what engineering is about.

One of the Design class's projects this year was cosmic ray detection. We had four muon detectors stacked on top of each other and connected to a laptop. When two or more detectors sensed a muon passing through them, the laptop would count that as one cosmic ray. This was my first experience posting data that I helped record on a website for the world to see. We recorded data for over three weeks. After the third week we used the data to either prove or disprove a hypothesis. We then create posters that briefly describe what we did and how we did, along with our results. We then continued collecting data for a few more weeks after that before we packed up the detector.

The project that most people remember was the hot air balloon project, in which we made a hot air balloon out of tissue paper. I was the team leader for team Bananas. We had to change our design many times before we completed the project, most of the time it was a split second change that would fix some error we made. However my team this year has been one of the best teams I ever been on. My team members each brought something different, I was good at math, another was good with arts and crafts, and yet another was good at paper work. Together we built a hot air balloon with out worrying about time or who was better at what we each new what we were good at and focused on that part of the project. On lunch day we attached a gondola with a video camera attached to record the flight

We also learn to use micro controllers. We learned about it in two stages. One stage with only

the micro controller and then the second with the micro controller connected to a robot. Using the BOE-Bot kits, we learned the PBasic language, a programming language based on Basic. After we had worked through the tutorials on how to program the BOE-Bot, we had a little competition. The competition took place over three days. The first day was navigation; we programmed our robots to follow a specific course. The second day was object avoidance, we programmed the robot to use an IR LED and detectors to sense objects and avoid them. And the third was follow the leader, we used the same set up as the object avoidance but instead of avoiding we set it to follow, My team unfortunately only won one of the competitions, the follow the leader competition.

We are also working on our own personal projects varying from solar cars to a learn to solder kit. I am part of the solar car team. Our project is to convert a standard RC car into a solar powered RC car. One of the most important things that I learned while working on this project are time management. Even though I am not the team leader I have seen how he has dealt with time management. Our teacher gave us 3 weeks to come up with a project and finish it. Two of those weeks were taken up by the time needed for parts to arrive, one week for the original RC car and solar cells and another for a replacement solar cell. That left us with only 1 week to finish modifying the car and setting up presentations to different organizations.

One of the most important skills I experienced this year is how to talk to a board, convincing them to give me funding. I experienced that through proposing a project for the design class. This is a skill that I will use repeatedly throughout my life. Another skill that the Endeavor program has taught me is team leadership. I learned how to divide out work in such a way that I'm not overburdened and everyone is involved. For example with the hot air balloon project I had to find out who was good at what and have them focus on that specific area, but in the end every one was a team leader at some point because every one was good at different things.

I hope that what I learned and experienced in the program will help me become a software engineer. With the skills I gained and the material I learned, I feel confident that I can expand my knowledge of computers and science. I will be able to find out who is good at what and have them focus on that, I have seen what a project that was not planned well will become, and I experienced what it would be like to ask for money from a board of supervisors. From here I go to collage to learn the finer details of engineering so that I can become an engineer and pass what I have experienced on to others.