1. Project Title and Number

   "Autonomous Underwater Vehicle (UAV) for Scientific Applications"

2. Week and Date Coverage

   Weekly Progress Report for Week 4 of Fall 2013 Quarter – coverage from Week 0 to Week 4

3. Your Name

   Joshua Morales

4. This week's plan
   - Order 80/20
   - Order Motors
   - Get FPGA from Dr. Brisk
   - Chose a controller for the Submarine and Buoy
   - Research sound wave communication
   - Draw body and frame

5. Work Content and Conclusions (body)

   It has been determined that we cannot get funding for a UCR "green" project because the project does not actually benefit the campus. We will stick with our budget of $300 per person. This project has still been very much in the research phase, but as of Friday it has shifted into the design phase. We now have a drawing of the device and have obtained an FPGA development board. The plan is to possibly run the data collection and control station off the FPGA board. If Andrew cannot get the development board working in one week, then we are going to just use a laptop and communicate using an XBee. We have come up with a way to keep track of position by encoding information into our sound waves.

   Week 1:
   - Formed the group and got the PCB etcher project approved by Dr. Chomko.
   - Started block diagramming the system of the PCB etcher.

   Week 2:

   - Met with the group for lunch to discuss different system requirement.
   - Brainstormed different ideas for a design project because the etcher idea has a high risk of failure and doesn't have much excitement factor.

Week 3:

- After brainstorming and speaking with Dr. Chomko, we have decided on the UAV.
- The purpose of the system is to take measurements (Temperature to start with) of the water. It will autonomously move around, avoiding collisions, and report back temperatures via wireless communication to a substation.

- High Level Communication idea – Communicate to a floating buoy. The buoy will then communicate wirelessly to a computer on land.

- Going forward tasks before next meeting.
- Josh: Research IMU.
- Andrew: Research chassis possibilities.
- Justin: Research funding. (Possible green project grant money.)

Week 4:

- Drew out frame to get measurements for ordering 80/20
- Ordered 80/20
- Ordered IMU
- Obtained FPGA
- Decided on controller for submarine

6. Plans for the following week
    - Finalize block diagrams of each sub system
    - If hardware comes in that has been ordered, being to test in a circuit
    - Begin Eagle schematic for PCB that will be on the submarine and the Buoy.
    - Finish computations for position detection and code in software.