Weekly reports are to be emailed to atbecker@uh.edu by 5:00pm on Tuesdays. The purpose of a weekly report is to: (1) give you text and images for your papers, thesis, and dissertation, (2) document progress, (3) identify if you are stuck or need resources.

Weekly report

1. **My *Goals* from last week**
   - Inventory all parts on hand and tack down any missing order items. Still missing Arduino Mega. Unit in Figure 2 is a my own hardware.
   - Setup work area
2. **My *Accomplishments* this week**
   a. Project 1: Magnetic Coil Control for Mico robots
      - **Deliverable 1:** Setup a control loop for current coils. This consisted of a current controller, a micro-controller and a coil (or some kind of restive load). See photo (Figure 2) of setup.
      - **Deliverable 2:** Begin creating a Simulink model of the control system. Specifically, determine what physical parameters allow the assumption of a relatively uniform magnetic field strength to be true.
      - **Deliverable 3:** Test interface with current control loop and Simulink. Verify Simulink can send valid current commands to control loop. (In Progress)
      - *https://github.com/aabecker*.
      - I tested 3 trials of a Current Control Loop.
      - I generated figure 1 (see below) and built figure 2

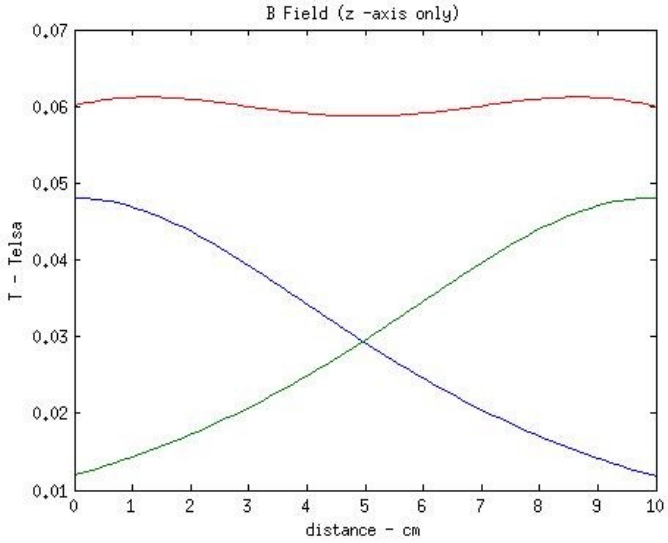

Figure 1 – Magnetic Field between two coils (operating area center at 5 cm mark)

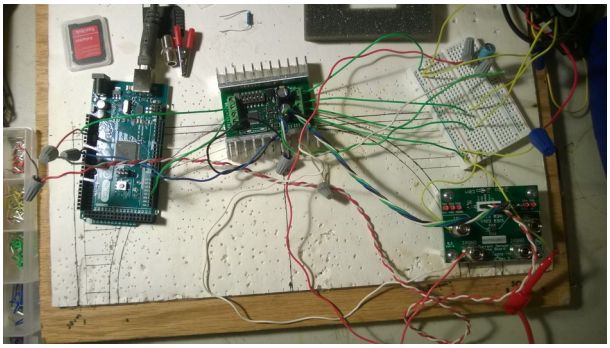

Figure 2 – First attempt to built current control coil hardware. Breadboard-mounted resistor is the "coil."

3. **My *Goals* for next week**
   - Objective 1. Build a coil with the electrical and physically properties required for a working coil control system.
   - Objective 2:Start construction on a frame to hold the six coils and operating area for micro-robots.
   - Objective 3: Work with Ademir on the best way for him to assist with the project work.
     a. Meeting with Dr. Becker on Friday 19 JUN15 at 1300. Request confirmation via Google Calendar. Review proposed state-space equations for object.
4. **What I need Dr. Becker to do:**
   a. I am not entirely sure how to best utilize Ademir on this project. Due to the limited time I have in the lab, I think his assistance will be essential to completing the project on schedule. I think he would be best used to do the physically construction of the frame for the coils and camera while I work on the Simulink/MATLAB/control laws. A robust frame with high quality coils will a good challenge and will take some time to complete. My question to you is twofold: 1) Does the approach I recommend for Ademir consistent with what you had in mind for his summer and 2) How do you recommend I get him started? Making a high detail drawing of the frame will take a fair amount of time and I don't think is necessary to build it.