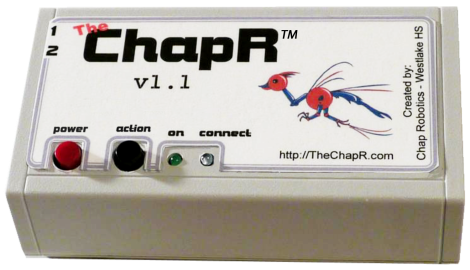
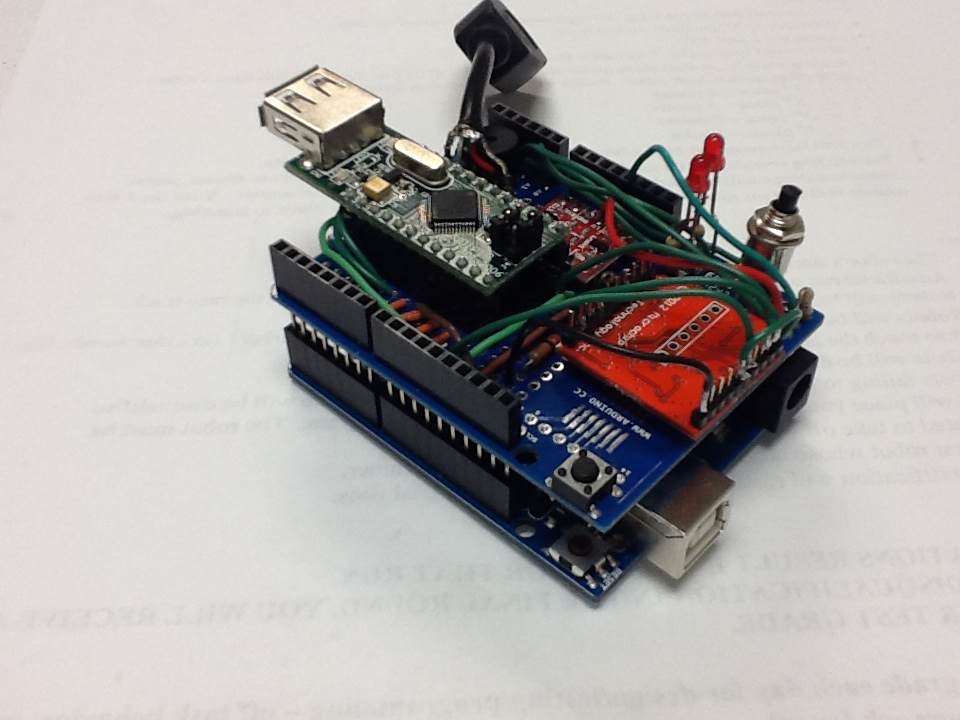
While participating in a robotics program three years ago, we realized the difficulties of trying to practice driving with a PC. The FIRST (For the Inspiration and Recognition of Science and Technology) Tech Challenge (FTC) consists of a user controlled portion, meaning that our drivers need to practice driving the robot. However, to do this we needed a laptop, the IDE, the code and a whole lot of patience. After our first season, we decided there had to be a better way.

Our mentor approached several students with the idea of creating a product to assist in drive practice. A small team was formed, and we began drawing out ideas. Rachel works on software/management, and Ben designed the PCB, though with such small team, everyone participated in aspects of marketing, design, manufacturing etc. The product would use two USB ports to take in driver input, then translate it to Bluetooth to be sent to the robot. We wanted to make it as cheap, portable and reliable as possible.

To accomplish this, we used the Arduino Pro-Mini as the microcontroller, a VDIP from Viniculum as the USB interface and the RN42 from Roving Networks as the Bluetooth module. The VDIP takes in the joystick input, the Arduino translates the input and the RN42 sends out packets over Bluetooth.

After several prototypes, we began marketing the product. Many teams were excited about the device, now called the ChapR. They were willing to pay the $100, but we didn’t want to use the sales as a fundraiser; instead, we used the profits (roughly $25 per device) to pay for ChapRs for teams in need.

 After our successes with the product, we took our ChapR team and transformed it into the Chap Research program, an entrepreneurial program within the school dedicated to giving other students the innovation experience. We’ve taken on several projects, such as a demo for our local TedEx Labs.