**The FaireBot**

**Assembling your FaireBot**

First, you need to assemble your robot. It comes in several parts:

1) The main board (or shield)
2) 2 motor wheels (or servos)
3) 9V battery pack
4) Metal standoff to hold up the back
5) Screws, cable ties for assembly

Step-by-step instructions are in the Fairebot User Manual at the link below beginning on page 6.  

**Test the Buttons on your Fairebot**

The buttons on top of the FaireBot will be used later to direct its motion. Pages 11-12 of the User Manual explain about the buttons and how to test them. Load the **ButtonTester.ino** program below onto your Arduino. Be sure to open the **Tools->Serial Monitor** window so you can see the responses from your robot. Are your buttons all working?

**Hook up the Servos**

To connect the servos on your Fairebot, connect the two cables with brown/red/orange wires to the pins in the middle near the battery. Attach each cable to the three pins on the same side as that servo. The BROWN cables go on the negative terminal (closest to the battery).

**Get your FaireBot Moving**

The navigation code for the FaireBot is available on the web as a .zip file at:  

Download this file and save it to your personal folder on the Y: Drive. If you double click on it, it should expand the zip file into a directory. Go into that directory and find the program called **FaireBot.ino**. This is the program you want to load to the FaireBot. After loading it, disconnect the FaireBot from the computer.

Connect the cable from the 9V battery to the 2 pins labeled “9V ONLY” on the FaireBot shield.  
**Note: You should not attach the battery when the Arduino board is still connected to the computer with the USB cable!!**

**Navigate a Maze or Compete with other Bots**

You’re now ready to work through FaireBot Lab 3 beginning on page 18 of the Users Manual. Measure the maximum velocity of your Robot! Test your skills by building an obstacle coarse for your FaireBot! Challenge your fellow Interns to a maze-solving race!
//ButtonTester.ino

//defines variables as pin numbers
int fwd = 3;
int bck = 5;
int lft = 6;
int rht = 2;
int exe = 4;

void setup() {
  // opens and configures the serial port to 9600 baud
  Serial.begin(9600);

  // configure the button pins as inputs
  pinMode(fwd, INPUT);
  pinMode(bck, INPUT);
  pinMode(lft, INPUT);
  pinMode(rht, INPUT);
  pinMode(exe, INPUT);
}

void loop() {
  // check the state of each input pin
  if(digitalRead(fwd) == 1){
    Serial.println("FORWARD!");
  }
  else if(digitalRead(bck) == 1){
    Serial.println("BACKWARD!");
  }
  else if(digitalRead(lft) == 1){
    Serial.println("LEFT!");
  }
  else if(digitalRead(rht) == 1){
    Serial.println("RIGHT!");
  }
  else if(digitalRead(exe) == 1){
    Serial.println("EXECUTE!");
  }
  delay(100);
}