

## Meeting Minutes

Leader: Sarah

Note Taker: Kelsey

### 1. Power and XY Plotter: Tim and Elizabeth

#### a. Power

- Can't design until know what motors and H bridges are being used
- Mech E
  - Email professor to get projects (Stanisic)
  - Biggest issue was that motor used too much amperage on startup and needed bigger H bridges
- Mastercar or MSC supply– mechanical suppliers
  - Robot motors from Bane(?) Bots – gear motors
  - Brushless DC motor (special motor controller required because need to simulate AC to make alternator) and brushless DC motor controller
    - a. Advantage: No mechanical/electrical connections, but is not a huge issue for us (we would be okay with brush DC motor)
- Design own H bridge – find supplier for right part for application instead of using what we have (high current H bridge designed in house is way less expensive than buying one)
- Schedule to complete
  - Can't find parts until selected motors (ideally shouldn't be that complicated anyway)

#### b. XY Plotter

- To improve tracking error: power both sides ?
  - Use chain to connect both sides together for them to rotate together (for us: use a drive belt)
  - A better alignment system – higher quality linear slides
    - a. Need to take into account turning moment from connector to lead screw
- Trying to find smallest and most lightweight solution to moving everything
- Schedule to complete
  - Select motor by Sunday

### 2. Microcontroller and User Interface: Sarah and Kelsey

#### a. What is setup as far as control/limit switches?

- These decisions will be decided this week

- b. Make sure to keep track of pins because only some can be used for PWM output
  - c. Joystick: stick with analog joystick for now
    - Embedded switch in joystick that Schafer is buying
    - Hand rest: mechanical aspects may be outside of our focus but
    - Be able to suction cup the joystick down so it doesn't move when user is using it
  - d. Schedule to complete
    - Design user interface this week
3. Other questions/concerns: All
- a. First design review: essential pieces (not worry about limit switches or aesthetics) – can you move things with the joystick and optimize/add other functionality later
    - Mount painting instruments – be able to use it before worrying about up and down motion
  - b. For next meeting
    - Have design for all subsystems and parts picked out