**Research Question**

What is an appropriate current to heat up the nichrome wire in PDMS?

**Independent Variables**

1. Current

**Dependent Variables**

1. Time it takes to reach temperature (s)

**Extraneous Variables**

1. Temperature of PDMS
   1. Make sure the temperature of the PDMS has settled and is consistent before beginning next test.
   2. Run three iterations and average the time it took.
2. Nichrome wire length
   1. Use the same length of nichrome wire for each PDMS mould, with a similar coil design.
3. PDMS size
   1. Use the same PDMS mould for the entire experiment
4. Ambient temperature
   1. Do experiments in the same room
   2. Preferably do the experiments on the same day

**Method**

1. Set up Arduino circuit as per circuit design.
2. Check the temperature of PDMS.
3. Connect 500mA to the nichrome wire until the temperature has increased 5°C.
4. Record the temperature every second.
5. Put in fridge to reset temperature.
6. Repeat steps 3 – 5 three more times
7. Run steps 3-6 two more times for 1000 and 1500mA.
8. Compare results.