Photo Assembly Sequence for Circuit 1, 2 and 3. Related to Figure 1 of Protocol 1 (below).

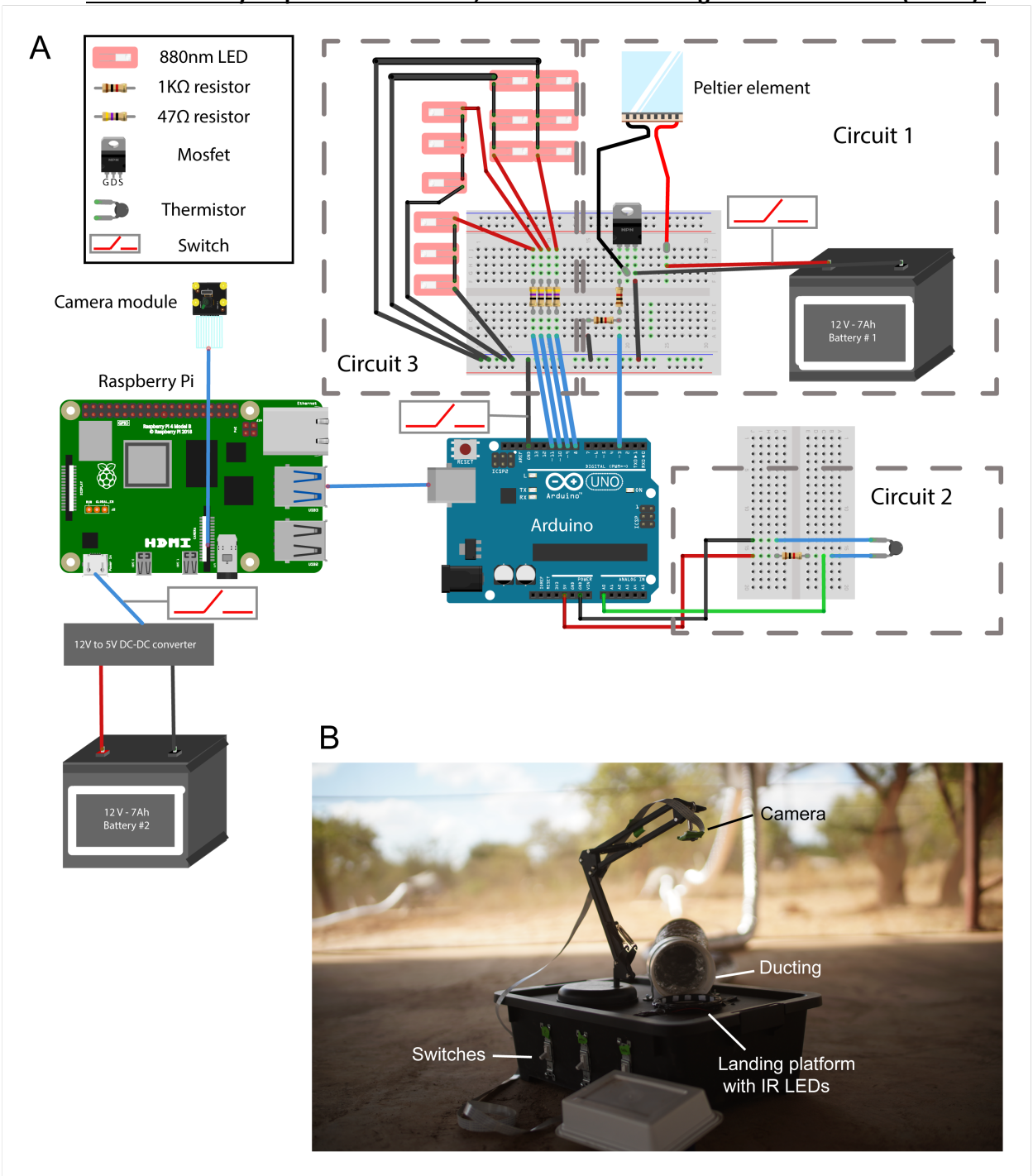
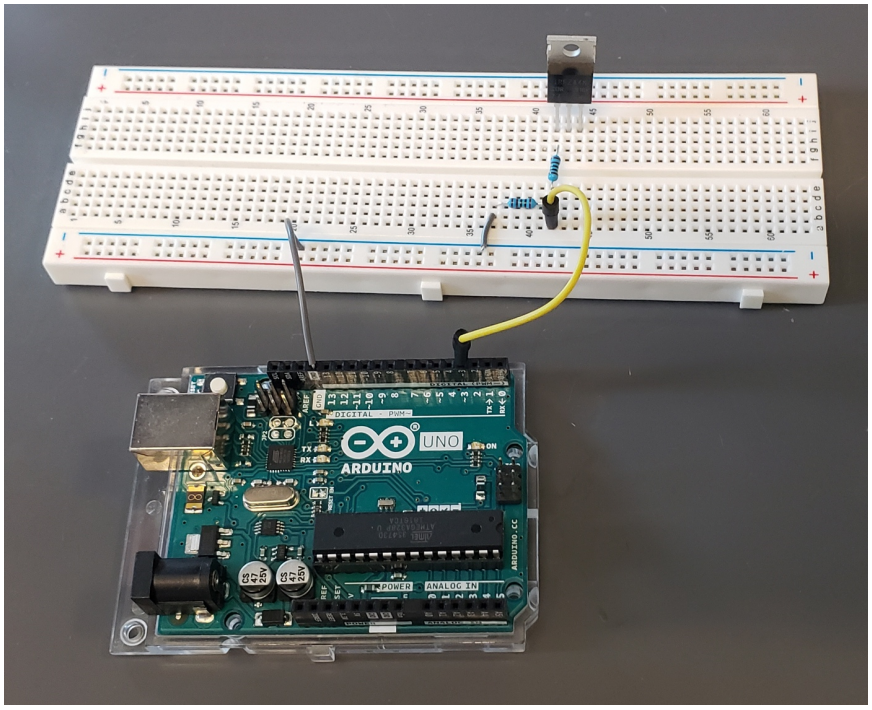


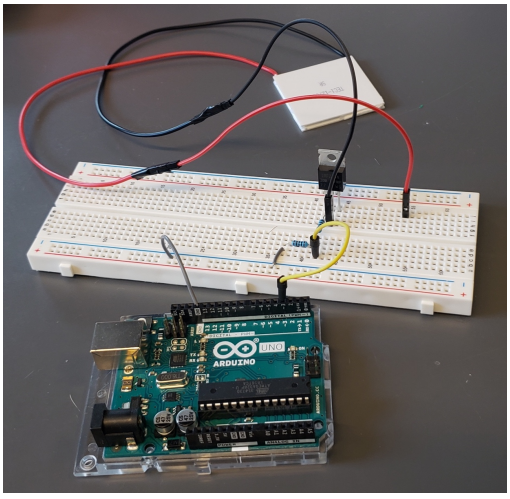
Figure 1. Odor-Guided Thermotaxis Assay (OGTA) for quantifying *Anopheles gambiae* attraction to olfactory stimuli. (A) Diagram for circuits 1-3 and their components for OGTA assembly. Circuit 1: Peltier element; Circuit 2: Thermistor; and Circuit 3: LED array. (B) Assembled OGTA positioned within a semi-field flight cage arena with attached ducting for odor delivery, heated landing platform surrounded by a ring of infrared LEDs and infrared sensitive camera positioned over the platform using a stand to quantify mosquito landing behavior. The circuits in (A) are placed inside a black container and switches are added to the circuits to turn on and off the Raspberry Pi, LED array and Peltier element.

Circuit 1

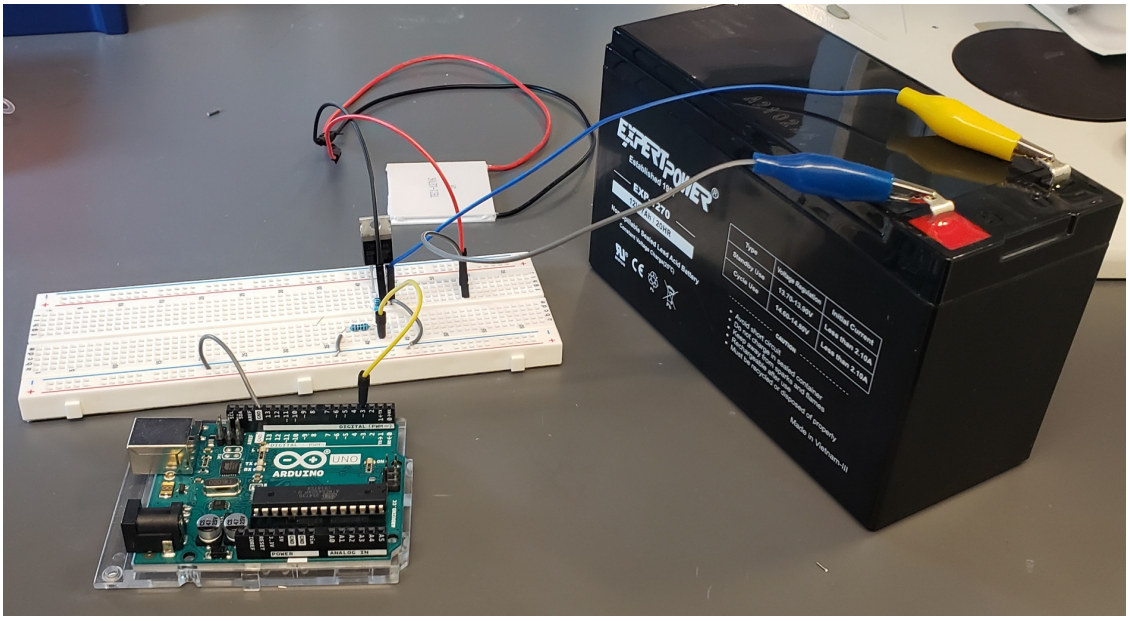
Connect digital pin 3 of the Arduino to a 1KΩ resistor and the resistor to the gate of the Mosfet.
Connect a second 1KΩ resistor to the previous resistor and then to ground



Connect the black wire of the PE to the drain pin of the Mosfet.
Connect the red wire of the PE to the positive terminal of the battery using an alligator clip.
Connect the negative terminal of the battery to the source of the Mosfet.
Connect the source of the Mosfet to the ground pin of the Arduino.

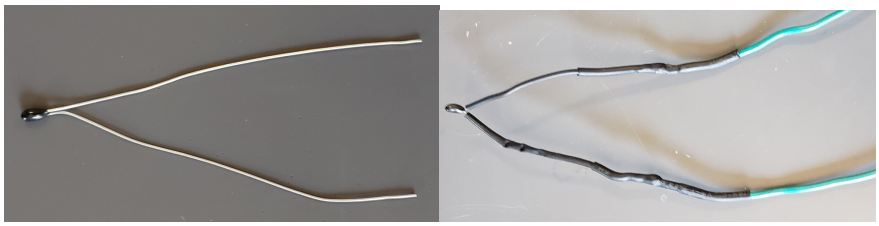


Finished Circuit 1:

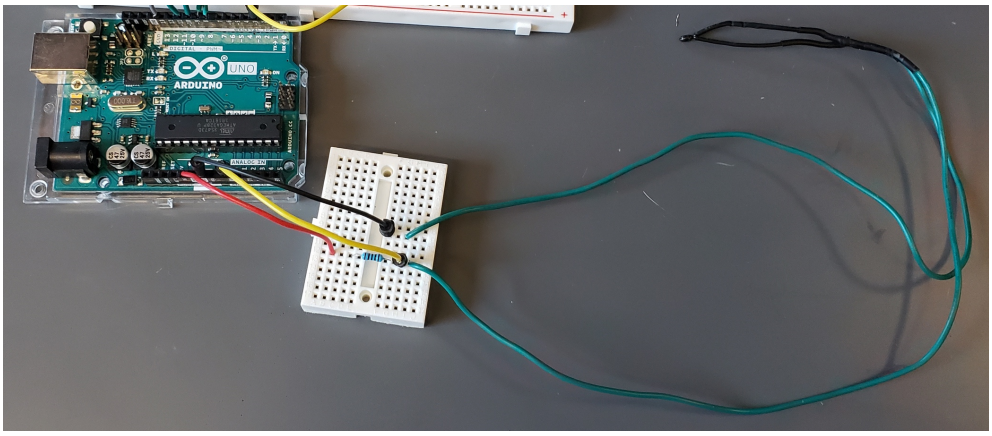


Circuit 2

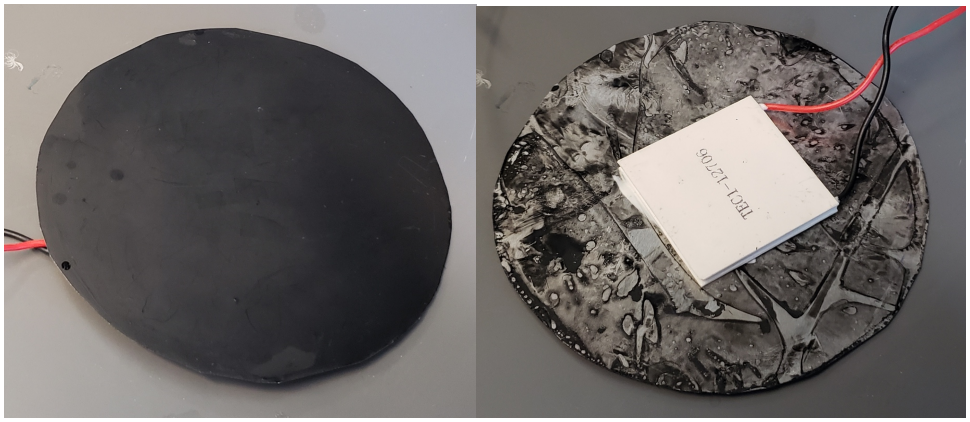
Solder thermistor (left) to longer wires (green, completed assembly right).



Connect the 5V pin of the Arduino to the 1KΩ reference resistor.
Connect the resistor to the analog pin A0 of the Arduino and one pin of the thermistor.
Connect the other pin of the thermistor to a ground pin on the Arduino.

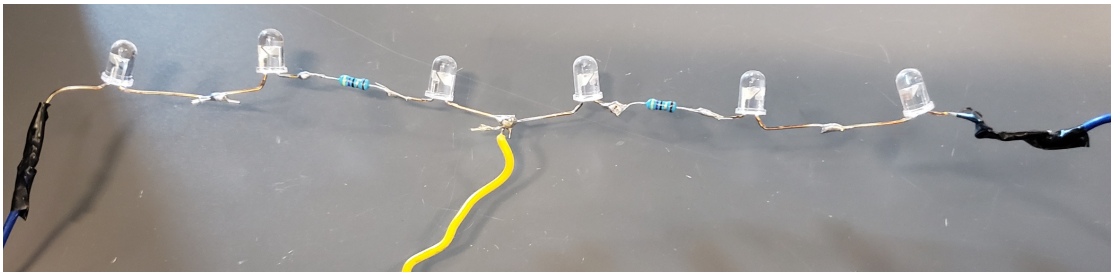


Paint the aluminum sheet with black flat paint and glue the aluminum sheet to the hot side of the PE using thermal conductive glue.



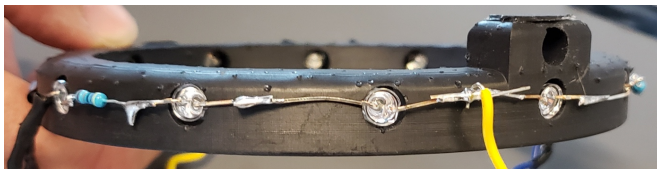
Circuit 3

Solder 3 infrared LEDs in series with a 47Ω resistor. Use the LED frame as a reference for the spacing between LEDs. Repeat the circuit 3 more times.

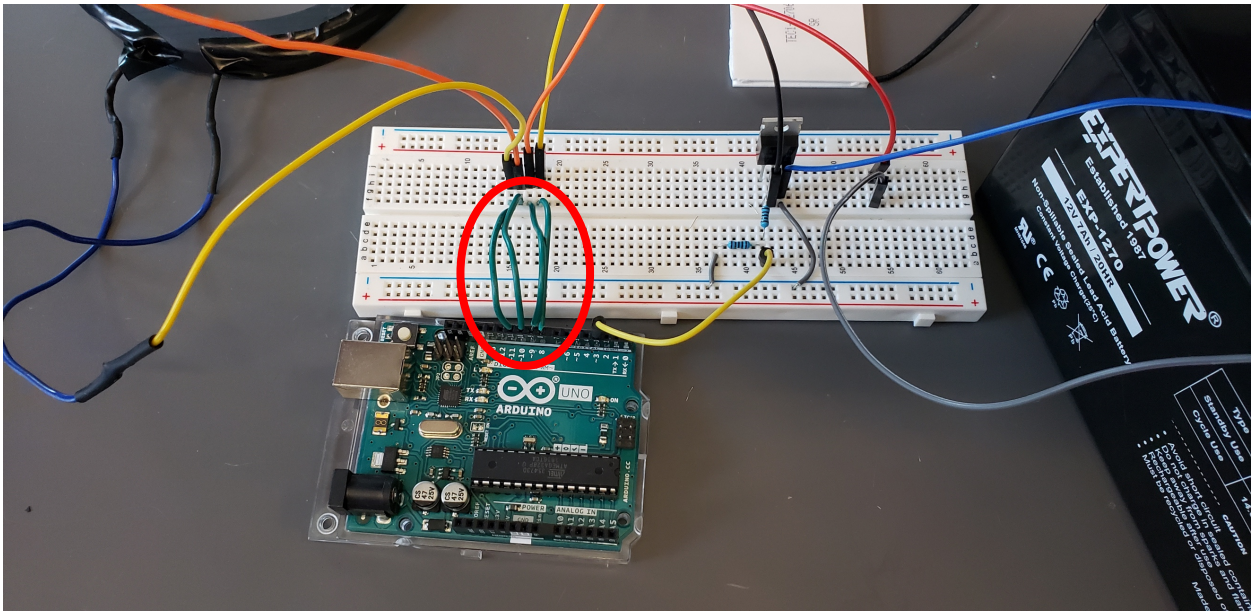


Note: In this particular circuit the resistor is soldered to the LEDs instead of attached to the breadboard as seen in Fig. 1. Two series LED circuits can share the same ground wire (yellow).

Secure the LED circuits onto the LED frame with electrical tape.

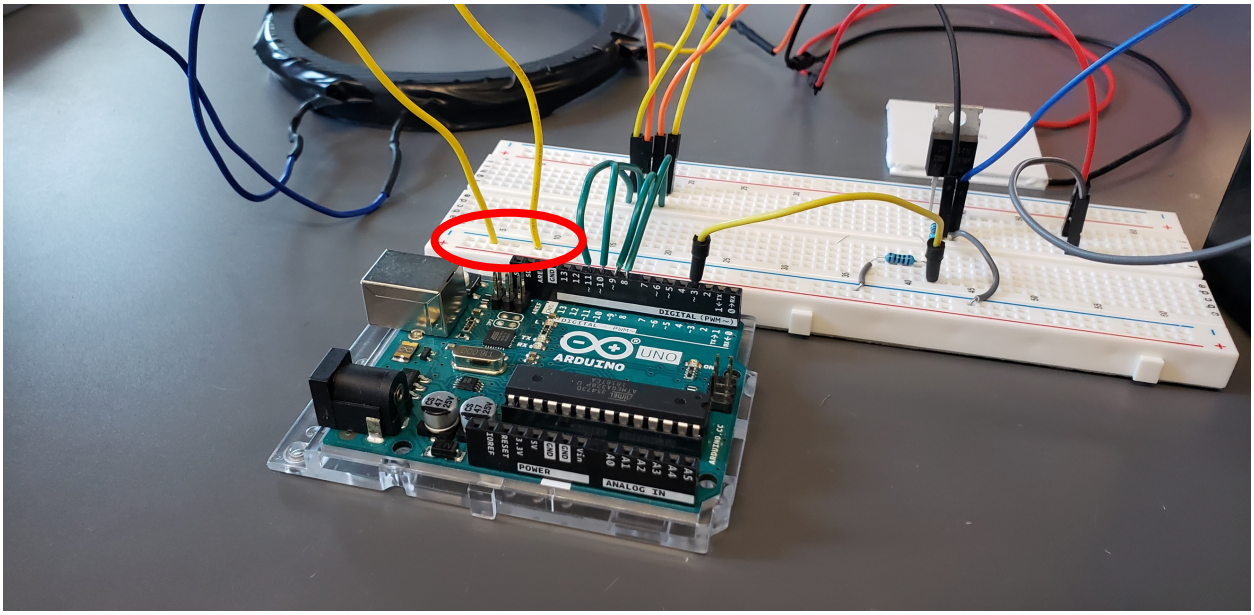


Connect the wires leading to the anode of the LEDs to pins 8-11 of the Arduino (green wires).



Connect the cathodes of the LEDs (yellow wires) to the common ground channel of the breadboard.

v



Connect the common ground channel of the breadboard to the Arduino ground.