Cardiac Pacing

1. Cover glass slides with adhesive aluminum on the left and right sides, leaving an inch of glass in the middle.
2. Place and adhere electrode wires on both sides.
3. Place a dollop of conductive gel along the inside edge of each aluminum strip making sure not to allow any into the gap.
4. FlyNap for 3-5 minutes, 5 flies per slide. Up to 5 slides can be assayed in a single group of anesthetized flies. Note the sexes and keep sexes separated for assay.
5. Orient the slide with the electrode wires facing up. Place the heads of the flies on the left and place the wings over the head in the gel, ensuring the anterior most segment of the abdomen is visible. There should be 5 flies separated by sex per slide.
6. Pull the gel from the other side so it is just touching the posterior side of the flies. The gel should look like five distinct lines. Spreading with a pipet tip is typically helpful.
7. Visualize the beating hearts prior to electrical shock.
8. Set the square wave stimulator to 50 volts, 8 hz and 30 ms duration, and connect the electrode wires with the red (positive) on the left and black (negative) on the right.
9. Set a timer for 30 seconds and shock the flies using the continuous switch.
10. Visualize during the shock through twitching of the flies or bubbling at the edge of the aluminum strip to ensure the slide and stimulator are functioning as expected.
11. Record % failed within 30 seconds of shock and % recovery within 2 minutes.
    Failure is the instances of an arrested heartbeats = no contractions
    Recovery is the percentage of arrested hearts that restart contractions