06/06/2021 16:00-16:45 via Zoom

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# **MEETING MAIN POINTS**

## Getting easier and cheaper version of optical mouse sensor

**Current state:**

* Hard to get sensors from optical mouse’s in small quantities;
* Similar sensors from Pimoroni, available soon:
  + Previous sensor (8cm min) <https://shop.pimoroni.com/products/pmw3901-optical-flow-sensor-breakout>
  + The one we are waiting for (1.5cm min) <https://forums.pimoroni.com/t/request-new-floor-tracking-sensor-based-on-pmw3901-breakout/14360> (for specs : <https://www.pixart.com/products-detail/74/PAA5100JE-Q> )

**To do:**

* Try sensor from cheaper mouse to see if also reads infrared (Future work)
* Keep an eye on sensors from Pimoroni to see when available (MR)

## Integrating two optical mice

**Current state:**

* Not sure how the two are integrated into the computer to control the mouse cursor;
* Not sure how to get the raw readings from a mouse

**To do:**

* Contact labs that have built trackball systems with two orthogonal mice to ask how they’ve done this (SF, LY – **higher priority**)
* Try getting input from optical mouse with Arduino (AM)
  + <https://www.arduino.cc/en/Tutorial/MouseController>

## Synchronizing different inputs

**Current state:**

* Can do using Bonsai by exporting the timestamps, at the moment in different files, and overlap them – best short term solution
* Can do using microcontrollers – possible long term solution

**To do:**

* Output all to same csv file (or zip? See previous project, link below) (SF – **higher priority**)
  + <https://github.com/Sussex-Neuroscience/rodent-tracking/tree/master/software/bonsai>
* Overlap files to see if match is good enough and overlap is straightforward (SF – **higher priority**)

## Building stimulus for glow-worms (LED array)

**Current state:**

* LEDs already available;
* 3D printed parts partially designed, not printed;
* Missing LED controller

**To do:**

* Get scad files for mini-microscope – structure to move LED array up and down (Future work)
  + [https://www.thingiverse.com/thing:77450](https://www.thingiverse.com/thing:77450%20)
* Design simpler versions for structure to move LED array up and down and rotate (SF, EM, MR – **higher priority**)
  + <https://www.makerbeam.com/>
* Try Maxime’s LED driver board an Arduino Due (AM – **higher priority**)
* Order LED driver board (24 channels) and an Arduino Due if Maxime’s work (SF)
  + <https://thepihut.com/products/adafruit-24-channel-12-bit-pwm-led-driver-spi-interface-tlc5947>
  + <https://store.arduino.cc/arduino-due>
* 3D print designed parts (AM – **higher priority**)
* Mount LEDs into 3D printed array (AM – **higher priority**)