Previous Research Notes

Purpose of barcode collection

* Manual data gathering is time consuming and subject to bias
* Relatively lightweight backpacks allow birds to more more freely as if in natural environment
  + RFID tags may be too heavy and expensive
* Easier to test a larger number of subjects for a longer time to improve results
* Keeping subject’s identities separate

Backpack design

* Material - waterproof and tearproof paper; rounded black plastic trays protecting the edge of the barcode; elastic straps
* Birds should be monitored for ill-fitting backpacks and barcode obstructions

Capture Notes

* Barcodes should be at least 20x20px in video or pic
  + Solve by inc resolution, inc tag size, dec distance
* Video more suitable for behaviors that occur over short periods of time; Pictures better for larger areas and lower freq measurements
* RPis used to control image capture frequency
* For Single Board: 1 RPi each fitted with camera module
* Python picamera used to control aspects of photo/video
* Used PinPoint library to generate and track barcodes <https://github.com/jgraving/pinpoint>

Possible Points of Failure

* Feathers or debris obstructing code
* Motion blur obstructing code

Initial Presentation Notes

Metrics to be measured

* Overall movement in enclosure
* Feeding Behavior (duration, frequency)
* Contact with other birds

Data to be gathered

* Bird and camera ID
* Time of capture
* X and y pos of birds
* Orientation of bird