Progress Report #6

Interactive Touchscreen for Rhesus Macaque

BME 200/300

10/17/2025

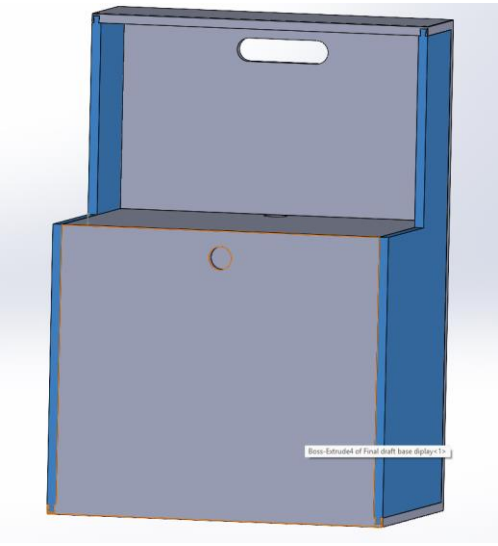
Team Members: Logan Olivera (co-leader), Kalob Kimmel (co-leader), Jackson Stewart (communicator), Andrew Dirkse (BSAC), Sameer Bhatt (BWIG), Charlie Fischesser (BPAG)

Project Statement: To design a modular, raspberry pi based interactive touchscreen, with a corresponding liquid dispensing to observe and understand the cognitive function of complex neural systems.

Current Project Status: The project is in the development/ research/prototyping phase. The electronics/software components are completed for the prototype. The CAD design for the case is finished, and the latching mechanism is in progress. Research regarding the touchscreen display is complete. Currently software/hardware integration is underway.

Difficulties/Questions: No overarching difficulties in the present state of the project.

Current Design:



Materials and Expenses:

Item	Description	Manufacturer	Mft Pt#	Vendor	Vendor Cat#	Date	QTY	Cost Each	Total	Link
Electronics										
Raspberry Pi Model 3 B+	Advanced Raspberry Pi used to send out signals for motor controller	N/A	SC0073	UW Makerspace	SC0073	9/15/2025	1	$45.00	$45.00	https://www.raspberrypi.com/products/raspberry-pi-3-model-b-plus/
Wiring	Wiring to connect Raspberry Pi	N/A	N/A	UW Makerspace	N/A	9/22/2025	1	$1.00	$1.00	
Micro SD	Store Research data for researchers	N/A	N/A	UW Makerspace	N/A	9/15/2025	1	$4.00	$4.00	
Motor Controller	Connects to Raspberry Pi to initiate pump	Hiletgo	3-01-833	Amazon	3-01-833	9/22/2025	1	$10.99	$10.99	https://www.amazon.com/dp/B00WSN98DC?ref=ppx_yo2ov_dt_b_fed_asin_title_
Mechanical										
A300BXS- Pump	Pump to push fluids	Anko	A302BX-300-S	Anko	A302BX-300-S	9/15/2025	1	Gifted	$0.00	ANKO A300BX-S | OEM Peristaltic Pump | Serial Control | Brushless DC | Models to 1700 mL/min
								TOTAL:	**$60.99**	

High Level Team Goals for Next Week: The main goal for the following week is to continue working on testing for circuitry and prototyping for the case. Smaller goals for the week include SolidWorks testing and latching mechanism prototyping. Other documentation for this week includes regular lab archive work and the next progress report.

Individual Progress:

Logan Olivera – This week I was sick for most of the week and was not able to make too much progress. I worked with Jackson and we have begun brainstorming the power bank of the system and how that will work.

Kalob Kimmel – This week I made the progress report, I watched videos of cad testing, I played around with the mechanical portion testing, and I made a ½ scale prototype.

Sameer Bhatt – This week I created a CAD model for the latching mechanism along with doing some online shopping to find a latching mechanism that could be online.

Jackson Stewart – This week I researched the basics of circuitry to fully understand how each component works. I also researched power supplies to narrow down what we will need to buy. I was introduced to a circuit simulation software called LT Spice that will be very helpful for making our circuit.

Andrew Dirkse – This week I helped to finish the preliminary report, documented and explained the code for the software, and attended the BSAC meeting, contributed, and took notes. I also scheduled times to get my machining training.

Charlie Fischesser – This week I was able to help Kalob work on a cardboard prototype and researched how we will work with aluminum to bend into the desirable shape for our design.

Individual Goals (next week):

Logan Olivera – For the upcoming week I plan to begin testing the hardware/software and begin calibration of all that. Furthermore I also plan to look more deeply into the power system we will use, probably a wall connection, convert to dc and then just voltage and current management.

Kalob Kimmel – In the next week I plan to get the next progress report set up, continue mechanical prototyping, and work on more testing in cad.

Sameer Bhatt – Next week, I want to prototype the model I created and compare it to simply buying it online.

Jackson Stewart – Next week I hope to find a power supply to buy and to send it to Charlie and our client to get it ordered. I also want to look more into LT Spice to actually create our circuit in the software to simulate it.

Andrew Dirkse – In the next week, I plan to do machining training (finishing up all my training) and meet with Logan to integrate the hardware and software components.

Charlie Fischesser – Next week, I hope to purchase some aluminum materials and update the expenses sheet with all current purchases.

Timeline:

Project Goal	Deadline	Progress	Date Completed
Contact Client and Meet	9/13/25	100%	9/8/25
Research	N/a	N/a	N/a
Order Material	N/a	N/a	N/a
Product Design Specification	9/18/25	100%	9/18/25
Design Matrix	9/26/25	100%	9/26/25
Preliminary Presentations	10/5/25	100%	10/3/25
Preliminary Deliverables	10/8/25	100%	10/10/25
Show And Tell	10/31/25	30%	N/a
Final Poster Presentation	12/5/25	N/a	N/a
Project Fabrication	12/10/25	N/a	N/a
Final Deliverables	12/10/25	N/a	N/a