Progress Report #5

Interactive Touchscreen for Rhesus Macaque

BME 200/300

10/03/2025

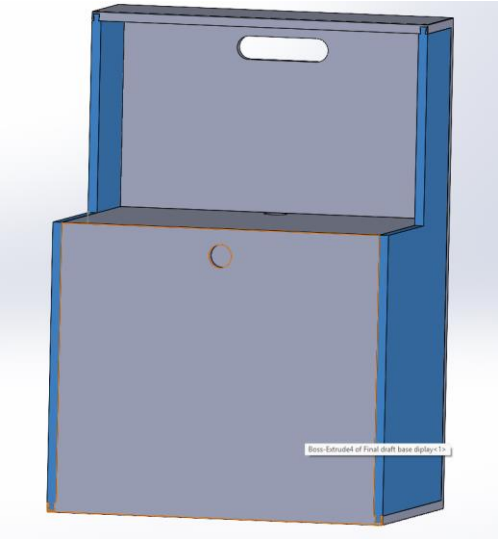
Team Members: Logan Olivera (co-leader), Kalob Kimmel (co-leader), Jackson Stewart (communicator), Andrew Dirkse (BSAC), Sameer Bhatt (BWIG), Charlie Fischesser (BPAG)

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. Raspberry pi circuitry, SSH and VNC setup is complete. Prototyping of the case has started, and testing is on the horizon.

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 start working on testing for circuitry and prototyping for the case. Smaller goals for the week include SolidWorks testing, latching mechanism CAD, and material ordering. Other documentation for this week includes regular lab archive work and the next progress report.

Individual Progress:

Logan Olivera – This week I spent a lot of time working on the report and researching standards/regulations for the upcoming prototyping phase of the project.

Kalob Kimmel – This week I made the progress report, and worked on the preliminary presentation. I did research to help with the base of the prototyping phase. I also continued looking into locking mechanisms.

Sameer Bhatt – This week I mainly worked on the preliminary report and thought a lot about the testing we will have to do. I designed some testing protocols which will be uploaded to lab archives.

Jackson Stewart – This week I worked on the preliminary report and edited the design matrix to make it more complete and more professional.

Andrew Dirkse – The week I took notes on a research article, worked on the preliminary report, edited the PDS, gave feedback to my peers, took notes on the BSAC meeting, and uploaded them to Lab Archives.

Charlie Fischesser – This week I worked on the preliminary report and updated the expenses spreadsheet. I also gave feedback to my peers on Feedback Fruits. I also looked into locking mechanisms for connecting device to cage.

Individual Goals (next week):

Logan Olivera – For the next week I plan to work on software/hardware integration of the system as well as work with my team to get the protoyping phase of the project started.

Kalob Kimmel – In the next week I plan to get the next progress report set up, start working with cardboard prototyping for the case, and try out SolidWorks testing. I will also continue research as needed.

Sameer Bhatt – I want to create the cad model for the latching mechanism for the mechanical prototype and present it to the group on friday to get some feedback.

Jackson Stewart – In the next week, I plan to look heavily into power supplies that we could use for our project. I need to research different types of power supplies and how to link them up to the circuitry safely.

Andrew Dirkse – In the next week, I plan to work with Logan on integrating the hardware and software, reflect on my peers' feedback, and research more competing designs.

Charlie Fischesser – In the next week, I plan to have the client purchase the necessary materials we need at the moment. I also plan to help Kalob with prototyping using cardboard and run SolidWorks testing. I am also planning to continue research when needed.

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	10%	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