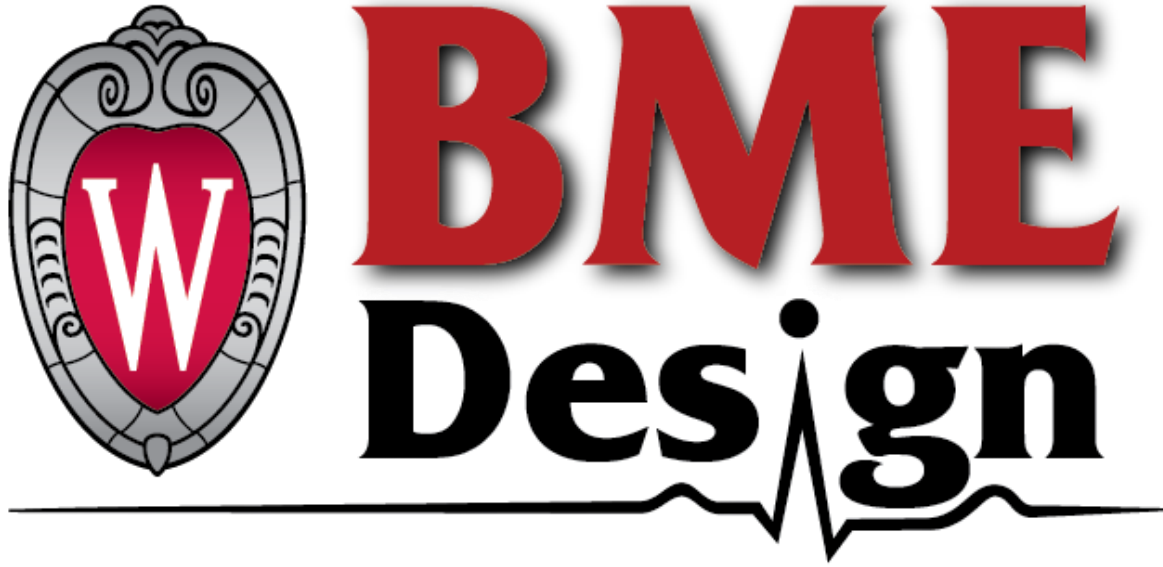




Progress Report #9

Interactive Touchscreen for Rhesus Macaque

BME 200/300

11/7/2025

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 prototyping phase of the project is underway.

Electronics/software integration is complete – testing is needed. A power system is being developed. Prototyping of the systems box is underway, and printing is complete.

Difficulties/Questions: Little experience with power systems across the team so this must be heavily researched.

Current Design:



Materials and Expenses:

Item	Description	Manufacturer	MFR P#	Vendor	Vendor Cat#	Date	QTY	Cost Each	Total	Link
Electronics										
Raspberry Pi Model 3 B +	Advanced Raspberry Pi used to input signals from touchscreen and output signals to 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 to motor controller	N/A	N/A	UW Makerspace	N/A	9/22/2025	1	\$1.00	\$1.00	
Micro SD	Store 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 output signals to turn on pump device	Hitlego	3-01-833	Amazon	3-01-833	9/22/2025	1	\$1.00	\$1.00	https://www.amazon.com/dp/B00WSN98DC?ref=ppx&th=1
Mechanical										
A300BX5- Pump	Pump to push fluids by accepting signals from motor controller.	Anko	A300BX-5	Anko	A302BX-300-S	9/15/2025	1	Gifted	\$575.00	https://www.walmart.com/ip/GreenTouch-8-Inch-Open-Frame-1024x600-HDMI-PCAP-Touch-Monitors-for-Consumer-Retail-POS-and-Hospitality-Markets/1594114325?classType=REGULAR
8 inch GreenTouch Touchscreen	Touchscreen device with high water and impact resistance and USB ports to connect to raspberry pi	GreenTouch	GT-TM080(2C)	Walmart	GT-TM080	10/14/2025	1	\$200.88	\$200.88	
Power										
24V 2A 48W DC barrel power supply (2 Pack)	Power supply to safely power the motor controller, touchscreen, raspberry pi, and pump	Fletergib	N/A	Amazon	B0C65Y34G	10/29/2025	1	\$16.99	\$16.99	https://www.amazon.com/Supply-Adapter-100-240V-Transformer-Connector/dp/B0C65Y34G?th=1
24V 2A DC barrel power supply	Power supply to safely power the motor controller, touchscreen, raspberry pi, and pump	Onerbl	JYH36-1204000-BY	N/A	J3611204000-U	10/29/2025	1	Gifted	\$13.89	https://www.amazon.com/Adapter-Replacement-J361-1204000U-J3611204000U-100-240-50/dp/B0D31FBC9G
								TOTAL:	\$857.76	

High Level Team Goals for Next Week: Begin testing of the electronics and put together a final prototype of the mechanical side.

Individual Progress:

Logan Olivera – This past week I worked on the circuitry (running into issues getting motor to turn on but all signals look good).

Kalob Kimmel – This week I researched into possibilities for 3D printing the case rather than using aluminum. I found that PETG is a good alternative. I also started working on a simpler design after confirmation that we want to separate most electronics.

Sameer Bhatt – This week I finalized the latching mechanism and reprinted the newest model. Along with that, I helped Kalob finalize the mechanical design and did a lot of brainstorming on potential solutions to a few problems.

Jackson Stewart – This week I looked more into circuitry and attended the Tong Distinguished Entrepreneurship lecture.

Andrew Dirkse – I continued to read a book on electronics to get more background knowledge and discussed circuitry with Logan.

Charlie Fischesser – This past week, I mainly worked on updating the expenses sheet with all purchased materials. I also attended the Tong lecture. Finally, I was able to do more research about parts of the project I was confused about, specifically the raspberry pi device.

Individual Goals (next week):

Logan Olivera – In the following week I plan to begin testing the circuitry and make sure the pump outputs as expected (having issues with this right now so making a focus).

Kalob Kimmel – In the next week I plan to help print out a new prototype for the case design. I also plan to look deeper into 3D printing options like petg. Finally I plan to stress test the case in cad to confirm that it will be viable as petg or other material.

Sameer Bhatt – Next week I hope to 3D print another mechanical prototype along with working with Kalob to consult with staff about potential risks or limitations to our design.

Jackson Stewart – Next week I want to start testing the device with Andrew and Logan and learn more about how our circuit works to be able to better explain it.

Andrew Dirkse – Next week I want to continue reading about electronics, meet with the electrical and mechanical teams again to discuss power, and attend the BSAC meeting and advisor meeting.

Charlie Fischesser – Next week, I plan to help Kalob and Sameer with 3D printing the new designs. I also plan to help with the power supply and determine a secondary pump option in case we can't get the pump to work.

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	100%	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