

BME Design: Progress reports

Title: Microvascular Channel Bioprinter shutoff valve

Date: 9 April 2026

Client: Dr. David Dean

Advisor: Dr. Paul Campagnola

Team:

- Dominique Gooden - *Co Team Leader*
- Steph Vigmond - *Communicator*
- Mahathi Karthikeyan - *formerly BSAC; now Co-Team Leader*
- Sophie Speece - *BWIG*
- Ana Toscano - *BPAG*

Problem statement

Facilitate rapid switching between bioprinter input devices so that microchannels have rapidly decreasing diameter. Also come up with a shutoff mechanism to prevent excess fluid flow from valves.

Brief status update

Difficulties / advice requests

N/A

Current design

See design matrix. In progress.

Materials and expenses

Item	Description	Manufacturer	Mft Pt#	Vendor	Vendor Cat#	Date	#	Cost Each	Total	Link
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Category 1										
	Flexible 80A IRE print					2/18/26	1	3.06	\$3.06	
	CEVIC locking mechanism					2/18/26	1	0.32	\$0.32	
	CEVIC locking mech - updated					2/19/26	1	0.24	\$0.24	
	Updated servo & CEVIC holder					2/26/26	1	0.15	\$0.15	
	Clip and Gear					3/17*26	1	0.13	\$0.13	
	Small KSMs					3/17/26	1	4.00	\$4.00	
	CEVIC Servo Connector with tapped holes					3/18/26	1	0.18	\$0.18	
Category 2										
									\$0.00	
									\$0.00	
								TOTAL:	\$7.90	

Major team goals for the next week

Next week's individual goals

- Dominique
 - Support testing and data collection as needed
 - Update notebook journal entries
- Ana
 - Support testing and data collection
 - Start preparing for poster presentation
 - Update notebook journal entries
- Sophie
 - Begin preparing for poster presentation
 - Final edits to 3D models and prints
- Steph
 - Analyze results from testing for poster presentation
 - Edit executive summary
 - Make any final design changes
- Mahathi
 - Final testing results and finish lab archives
 - Prepare for poster presentation

Timeline

Task	Jan	February				March				April					May
	29	5	12	19	26	5	12	19	26	2	9	16	23	30	7
Project R&D															
Empathize															
Background...	X	X													
Prototyping															
Testings					X	X	X		X						
Deliverables															
Progress Reports	X	X	X	X	X	X	X	X	X	X	X				
Prelim presentation		X													
Final Poster															
Meetings															
Client		X		X		X									
Advisor	x	X	X	X	X	X	X	X	X	X					
Website															
Update	X	X	X	X	X	X	X	X	X	X					

Filled boxes = projected timeline
 X = task was worked on or completed

Previous week's goals and accomplishments

- Ana
 - Contributed to executive summary
 - Tested with team prior spring break
- Dominique
 - Contributed to executive summary
 - Researched power specifications for new motor
 - Tested with team prior to spring break
- Steph
 - Integration testing (1)
 - Worked on executive summary
- Sophie
 - Integration testing
 - Executive summary
- Mahathi
 - Integration testing and executive summary

Activities

Name	Date	Activity	Time (h)	Week Total (h)	Sem. Total (h)
Mahathi	27 March 4/7/26	Testing Worked on executive testing	3	3	30

Steph	27 March 6 April	Integration testing Worked on executive summary	1.5 1	2.5	26
Dominique	27 March 7 April	Testing with team Worked on executive summary + research	1.5 1.5	3	>10
Sophie	03/27/2026 04/07/2026	integration testing Executive summary	1 1	2	25.5
Ana	27 March 4 April	Integration test Worked on executive summary	1.5 2	3.5	27.5