

BME Design: Progress reports

Title: Microvascular Channel Bioprinter shutoff valve

Date: 23 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	
	Replacement CEVIC bottom half					4/22/26	1	1.31	\$1.31	
Category 2										
									\$0.00	
									\$0.00	
								TOTAL:	\$9.21	

Major team goals for the next week

Next week's individual goals

- Dominique
 - Update notebook
 - Complete final deliverables
- Ana
 - Present poster
 - Do the final report and organize documents
- Sophie
 - Present poster
 - Work on final report
 - Complete final notebook
- Steph
 - Present poster
 - Work on Final Report & notebook
- Mahathi
 - Present Poster
 - Finish Final deliverables

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
 - Edited poster
 - Meet with the group
 - Started final report
- Dominique
 - Electronics testing with Mahathi and Ana
 - Met with group and rehearsed presentations
 - Edited poster
 - Data analysis for results section
- Steph
 - Further IRE testing with Sophie
 - Edited poster
 - Met with group
 - Printed poster
- Sophie
 - Worked on assigned sections of poster
 - Additional leak testing
 - Brief 3D model change and print
- Mahathi
 - Finished testing and analysis
 - Met with group to practice poster

Activities

Name	Date	Activity	Time (h)	Week Total (h)	Sem. Total (h)
Steph	19 April	Worked on poster	3	8.5	39
	20 April	Leak testing with Sophie	3.5		
	21 April	Met with group & practiced	1		
	21 April	Sent poster to print & picked up	1		
Dominique	19 April	Electronics testing with Mahathi and Ana	1	5.5	>10
	21 April	Met with group and rehearsed presentations	0.5		
	19-21 April	Edited poster, Data analysis for results section	4		
Sophie	04/20/26	3D modeling and printing	0.25	5.25	36
	04/20/26	Leak testing and poster work	4		
	04/21/26	Team meeting and poster work	1		
Ana	Edited poster	04/19	1.5	3	34
	Meet with the group		1		
	Started final report	04/21	0.5		
Mahathi	Edited Poster	4/20	2	3	35
	Finished results analysis	4/21	1		