

BME Design: Progress reports

Title: Microvascular Channel Bioprinter shutoff valve

Date: 12 February 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	Manufac-turer	Mft Pt#	Vendor	Vendor Cat#	Date	#	Cost Each	Total	Link
Category 1										
									\$0.00	
									\$0.00	
Category 2										
									\$0.00	
									\$0.00	
								TOTAL:	\$0.00	

Major team goals for the next week

Next week's individual goals

- Dominique
 - Work on IRE improvements
- Ana
 - Start first draft for report
 - Work on CAD design and final prototyping tasks
- Sophie
 - Continue work on 3D modelling a locking mechanism
 - Print an IRE out of the Flexible 80A resin to test rotatability
 - Continue preliminary report and research on how to write a scientific paper
- Steph
 - Divide report & work on it
 - Continue research on materials to use for IRE
 - Work on implementing updated materials for IRE
- Mahathi
 - Finalize preliminary report
 - Continue research on Electronics and Arduino
 - Have a semester plan

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															
Deliverables															

Progress Reports	X	X													
Prelim presentation															
Final Poster															
Meetings															
Client															
Advisor	x														
Website															
Update	X	X													

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

Previous week's goals and accomplishments

- Ana
 - Met with client & advisor; gave preliminary presentation
 - Researched potential journals for the final report
 - Team meeting
- Dominique
 - Team meeting
 - Research potential journals for final report
 - Prelim presentation + client and advisor meeting
- Steph
 - Met with client & advisor; gave preliminary presentation
 - Researched potential journals our paper could be based on
 - Met with team to discuss directions the project may go in
- Sophia Speece
 - Met with client and advisor for preliminary presentation and early design feedback
 - Met with team to assign tasks
 - Began preliminary report
- Mahathi
 - Met as team to talk about goals for this semester
 - Researched potential articles for preliminary report
 - Did some research on changes to optimize arduino code

Activities

Name	Date	Activity	Time (h)	Week Total (h)	Sem. Total (h)
Mahathi	2/10 2/12	Team meeting Journal research	1 2	3	6
Steph	2/06 2/09 2/10	Team & Client meeting Journal research Team meeting	1 0.5 0.5	2	6
Dominique	2/6 2/10	Prelim presentation + client meeting Team meeting and research	1	1	>1

Sophie	2/06 2/10 2/12	Client meeting and advisor presentation Team Meeting Preliminary Report work/research	1 0.5 0.5	2	5.5
Ana	02/10	Research journal and other publication platforms for the final report Started to brainstorm testing protocols	3	3	5.5