

BME Design: Progress reports

Title: Microvascular Channel Bioprinter shutoff valve

Date: 30 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 | Manufac-turer | Mft Pt# | Vendor | Vendor Cat# | Date | # | Cost Each | Total | Link |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------|--------|-------------|---------|---|---------------|----------------|------|
| 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 | |
| | HobbyPark Waterproof RC Servo 25KG High Torque Metal Gear Digital Servo for 1/12 1/10 RC Car Truck Buggy Programmable 2BB Control Angle 180° HV (Coreless Motor) | | | | | 4/10 | 1 | 29.97 | \$29.97 | |
| | | | | | | | | TOTAL: | \$39.18 | |

Major team goals for the next week

Next week's individual goals

- Dominique
 - Finish final report section
 - Finish individual notebook section
- Ana
 - Make sure final report is ready to submit
- Sophie
 - Finish final deliverables
- Steph
 - Finish deliverables
- Mahathi
 - Finish report
 - Update Lab Archives
 - Clean out locker

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 | X | X | X | X |
| Prelim presentation | | X | | | | | | | | | | | | | |
| Final Poster | | | | | | | | | | | | | X | | |
| Meetings | | | | | | | | | | | | | | | |
| Client | | X | | X | | X | | | | | | | | | |
| Advisor | x | X | X | X | X | X | X | X | X | X | X | X | X | | |
| Website | | | | | | | | | | | | | | | |
| Update | X | X | X | 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
 - Presented poster
 - Finished my section of final report

- Dominique
 - Presented poster
- Steph
 - Presented poster
- Sophie
 - Poster presentation
- Mahathi
 - Presented Poster'
 - Finished Feedback Fruits

Activities

| Name | Date | Activity | Time (h) | Week Total (h) | Sem. Total (h) |
|-------------|----------------------|------------------------------------------------|-----------------|-----------------------|-----------------------|
| Steph | 24 April | Poster presentation | 2 | 2 | 41 |
| Dominique | 24 April | Poster presentation | 2 | 2 | >10 |
| Sophie | 04/24/2026 | Poster presentation and rewards ceremony | 3 | | 39 |
| Ana | 24 april 26 april | poster presentation Finish final report | 4 | 4 | 37 |
| Mahathi | April 24 | Poster Presentation | 2 | 2 | 34 |