

Arterial Coupler Re-Design: Adjustable Stent/Cuff Anastomosis

Progress Report 12: 04/23/2026

Client: Dr. Jasmine Craig

Advisor: Prof. Darilis Suarez-Gonzalez

Team:

- Leader: Jackie Behring
- Communicator: Arshiya (Ria) Chugh
- BWIG: Sofia Decicco
- BPAG: Allison (Ally) Rausch
- BSAC: Daniel Pies

Problem Statement: Microsurgical arterial anastomosis is a cornerstone of reconstructive surgery, enabling tissue transfer and limb salvage. Current techniques are highly time consuming, technically demanding, and are highly dependent on surgeon expertise. Suturing vessels as small as 1 mm can take even the most experienced surgeons 30-60 minutes, extending operating times and jeopardizing tissue viability. Existing stent-based approaches introduce complications by contracting the vessel lumen and lack adaptability across the wide range of vessel diameters encountered in clinical practice. There is a critical need for a biocompatible, adjustable, and easy-to-use device that can reliably reduce operative time while maintaining vessel integrity and minimizing complications.

Brief Team Status Update: Completed assigned sections of the final poster, developed and practiced presentation scripts with the team, prepared for the executive summary, began organizing and dividing the final report, and updated LabArchives with testing protocols and results.

Summary of Weekly Individual Design Accomplishments:

- Allison (Ally) Rausch:
 - Completed sections for Final Poster
 - Wrote final presentation script and practiced with team
 - Planned for executive summary presentation
 - Began work on final report
- Jackie Behring:
 - Completed assigned sections on Final Poster
 - Practiced section with team members
 - Created a script for executive summary presentation
 - Imported the final report and divided sections between members
- Sofia Decicco:
 - Completed testing and results poster sections
 - Worked on executive summary script for judges
 - Made final poster presentation upload to website and canvas
- Arshiya (Ria) Chugh:
 - Completed assigned sections of the final poster presentation
 - Rehearsed the poster presentation with team members
 - Updated LabArchives with the team's testing protocols and results
- Daniel Pies:
 - Completed assigned sections in final poster presentation
 - Practiced poster presentation

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Weekly/Ongoing Difficulties: No notable difficulties.

Upcoming Team Goals: Complete the final report and all assigned sections, finalize individual and team LabArchives entries, prepare deliverables for future teams, and wrap up the semester with a final meeting with the advisor and client.

Upcoming Individual Goals:

- Allison (Ally) Rausch:
 - Complete final report
 - Complete lab archives
- Jackie Behring:
 - Complete assigned sections of final report
 - Update individual and team sections in Lab Archives
- Sofia Decicco:
 - Complete final report
 - Finalize all lab archives updates
- Arshiya (Ria) Chugh:
 - Complete the final report with the team
 - Update both individual and team LabArchives for submission
 - Conclude the semester with a final wrap-up with the advisor and client
- Daniel Pies:
 - Update personal notebook as needed in LabArchives
 - Complete team's final report
 - Organize team deliverables/research for potential future teams to use

Project Timeline

Project Goal	Deadline	Team Assigned	State of Completion
Initial Research	1/30	All	The team will continuously research throughout the semester.
Preliminary Presentation	2/6	All	Complete
Preliminary Report	2/25	All	Complete
Fabrication and Testing	3/27	All	Complete

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Final Deliverables	4/29	All	In Progress
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Expenses

Item	Description	Manufacturer	Part Number	Date	QTY	Cost Each	Total	Link
Component 1								
Micro-Spring	5 mm length, 0.5 mm diameter micro-spring	Kellogg's Research Lab	N/A	02/25/26	1	12.99	12.99	micro-spring
Microsprings	Varying Mandrel sizes (mm): 0.5, 0.9, 1.15, 1.6	Kellogg's Research Lab	N/A	03/23/26	4	8.00	36.99	Varying Mandrel Springs
Metal Shim Kit	Metal shim kit with sheets of stainless steel of varying thicknesses	Home Depot	Internet # 335115252 Model # 2-HDPH005OT053	03/24/26	1	50.30	50.30	Metal Shim Kit
TOTAL:							\$100.28	