**Arterial Coupler Re-Design: Adjustable Stent/Cuff Anastomosis**
Progress Report 1: 1/29/2026

**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:** The team met to get back on the same page after break and reset goals. We met with the client to align on priorities moving forward and checked in with our advisor to discuss where to pick back up with the project and next steps. Preparation for the teams preliminary presentation began and sections were assigned.

**Summary of Weekly Individual Design Accomplishments:**

- Allison (Ally) Rausch:
    - Met with stent R&D engineer from San Fransisco
    - Client meeting (1/28)
        - Took notes
    - Researched radiopacity
    - Researched Pore Wall Apposition
- Jackie Behring:
    - Attended and led client meeting to establish goals for upcoming semester
    - Organized meeting questions and notes
    - Researched micron laser lithography
- Sofia Decicco:
    - Set up new team website for this semester
    - Outlined 402 schedule and upcoming deadlines
    - Reviewed client meeting notes to understand next weeks action items
- Arshiya (Ria) Chugh:
    - Communicated with the client to schedule an initial meeting for the semester
    - Contacted Myiah, who has prior experience with microsurgical device testing
    - Began research on testing and fabrication plans for the semester
- Daniel Pies:
    - Team meeting with client to establish goals for semester

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    - Attend BSAC meeting

**Weekly/Ongoing Difficulties:** No notable difficulties.

**Upcoming Team Goals:** Next week the team is planning to continue researching new topics and solutions. The team will complete assigned sections of the preliminary presentation as well as present to the advisor on Friday.

**Upcoming Individual Goals**:

- Allison (Ally) Rausch:
    - Research floating and drawn filled tube stents
    - Continue material research
- Jackie Behring:
    - Complete preliminary presentation and practice with team
    - Continue to research different fabrication techniques
    - Begin researching different testing techniques
- Sofia Decicco:
    - Identify all resources and manufacturers we can connect with for fabrication
    - Start working on preliminary presentation and rewriting semester goals
- Arshiya (Ria) Chugh:
    - Continue researching fabrication and testing plans
    - Meet with the advisor to gain a clearer understanding of semester goals and deliverables
    - Work with the team to determine semester plans and begin developing the preliminary presentation
- Daniel Pies:
    - Determine semester plans for fabrication, testing, and further design developments
    - Begin work on preliminary presentation
    - Meet with team's advisor to establish timeline and goals for semester

**Project Timeline**

| Project Goal | Deadline | Team Assigned | State of Completion |
|---|---|---|---|
| Initial Research | 1/30 | All | The team will continuously research throughout the semester. |

**Expenses**

| Item | Description | Manufacturer | Part Number | Date | QTY | Cost Each | Total | Link |
|---|---|---|---|---|---|---|---|---|

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| **Component 1** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| **TOTAL:** | | | | | | | | **$0.00** |