

Below follow the updates from the week of 9/21:

Based on feedback from Professor Klaesner, we have edited the design specifications to be more precise. The bolded/highlighted bullets are the ones which we added to this week.

Product Specifications:

- Artery Diameter: 7-10 mm
- Thickness of artery: ~0.5mm
- **Max force/area for arterial failure: 300 kPa to 450 kPa**  
([http://ibrc.osu.edu/wp-content/uploads/2014/05/Agah\\_Manuscript\\_2014.pdf](http://ibrc.osu.edu/wp-content/uploads/2014/05/Agah_Manuscript_2014.pdf))
- Diameter of operating incision: 2 cm
- Average volumetric flow rate of suction pump: 40-60 mL/min
- **Weight/Trace of clamp: 53 -70 grams (taking the average of weight of clamps of a similar nature)**
- **Clamp thickness: 2.8 mm tip width (anticipated from previous vascular clamp designs: <https://www.teleflexurgicalcatalog.com/pilling/product/354730-debakey-pediatric-clamp>)**
- Material used: either titanium or stainless steel
- Cost: Name of CNC machine shop -- Ron Casey Total Titanium
- Right vs Left Handed: Either works
- Specific procedure used for bypass/shunt: Sano shunt/BT shunt
  - Sano shunt used more often
  - BT shunt causes more problems because of larger pulmonary blood flow
- AVOID PRESSURE OF ~100 mmHg

Articles for similar Cooley Clamps.

- <https://www.sklarcorp.com/cardiovascular/cardiovascular-clamps/6-1-2-cooley-multi-purpose-clamp-45d.html>
- <https://www.sklarcorp.com/cardiovascular/cardiovascular-clamps/7-cooley-derra-anastomosis-clamp-medium.html>
- <https://msurgery.ie/vascular-anastomosis>
- <https://catalog1.bd.com/media/instructions/36-4949F-impress.pdf>

Reflecting on the lectures, we wanted to integrate some ideas we learned this week.

- The team hopes use the SMACCable framework to hone in on the project details with our client next time. Specifically, we hope to hammer out the ways to measure the success of our device. This also includes defining testing protocols for the device.
- The team has set up regular meetings outside of class: some to discuss project updates and to delegate work and others to discuss feedback for the group. The feedback will be set up into two

categories: project-related and communication-related. We also hope to take the personality test that indicates if we are drivers, analyticals, amiable, and expressive

Questions:

- What are good ways we can gauge feedback from group members?
- For client: Are the max force/area, weight of the clamp, and clamp thickness metrics in the correct range?
- For client: what are different test cases for the device?

