

Monitoring Implant Functionality via Doppler Sensor

Team 22: Brennan Golab, Caetano Chequer, Mark Brittain, Marlon Rodriguez, Stephen Schwartz

Project Mentor: Dr. Sule Ozev

PROJECT BACKGROUND

- Hydrocephalus

 <u>accumulation of CSF</u> leads to increase in intracranial pressure.
- Shunting treatment
 — <u>high failure rates</u>. • Over 70% within 10 years.
- Developed by ASU Research Team.



PROBLEM STATEMENT

- Traditional monitoring methods of shunting systems <u>cannot</u> be used for the PDMS duckbill valve.
- Functionality testing must be <u>accurate</u>, <u>safe</u>, and ideally cost-friendly.
- Doppler ultrasound sensors have welldocumented effectiveness in measuring blood flow.
 - Goal: implement an <u>existing</u> doppler sensor to assess functionality of <u>new</u> valve model.

Lab Assistance: Daniel Gulick



of the PDMS duckbill valve using doppler technology.