Force-Based Control for Robot-Assisted Retinal Vein Cannulation

- This project aims to modify the Eye Robot (ER) control algorithms for assisting retinal vein cannulation (RVC).

- **What Students Will Do:**
  - New control mode(s) to aid cannulation (C++)
  - Artificial retinal vein phantom, single subject experiments and statistical analyses (MATLAB)

- **Deliverables:**
  - Software: C++ code
  - Retina vein phantom
  - Experimental setup
  - Experimental results

- **Size group:** 2 people
- **Skills:** MATLAB, C++

- **Mentors:** Berk Gonenc (bgonenc1@jhu.edu), Iulian Iordachita, Russell Taylor

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**Diagram:**

1. Detect Venous Puncture
2. Hold the Needle Fixed

- Use a force-sensing needle
- Develop software (C++)
- Conduct experiments on artificial phantoms

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