

Senior Undergraduate/Graduate Research Intern
Enabling affordable, accessible, high quality cataract surgery globally

We are a cross-disciplinary team of engineers and ophthalmologists from the Whiting School of Engineering and School of Medicine who are seeking to address a significant gap in cataract care by enabling affordable high quality cataract surgery in low- and middle-income countries (LMICs). We are collaborating with stakeholders across Johns Hopkins, such as the Applied Physics Lab and Wilmer Eye Institute, as well as international organizations such as the Seva foundation and the Aravind Eye Care System in India (the world's largest eye care system).

We would like to involve an undergraduate or graduate student researcher in this highly translational project to support optimization and validation of a handheld cataract surgery device. The researcher would be involved in the following activities and receive academic credit, learn the biodesign process, work with engineers and ophthalmologists, and receive mentorship on translation of medical devices:

1. Develop and execute experiments to verify design requirements
2. Compile, evaluate and disseminate results in collaboration with the team
3. Develop prototypes for usability and bench-top testing
4. Assist in developing test models for verification studies
5. Assist in prototype optimization through regular design discussions backed with experimental data and design requirements
6. Assist in conducting usability studies at the Wilmer Eye Institute
7. Assist in compiling, evaluating and summarizing key ideas and takeaways of relevant research articles. Such key points will go towards experimental design and/or product design.
8. Assist with relevant patent searches

The person should have the following skills:

1. An understanding of or strong interest in the design process utilized in medical device innovation
2. Experience with benchtop research, either through a lab or via engineering classes

Nice to have:

1. Experience in running experiments investigating key aspects of prototypes for product development
2. Rapid prototyping skills, including CAD - as shown from experience in prior projects.
3. Experience in the customer discovery process and evaluating the use of medical products through experiments

If you are interested in this position and are able to provide up to 10 hours per week, please contact Joshua de Souza (jjds@jhu.edu) and Kunal Parikh (ksp@jhu.edu) with your resume.