

Regulated Research Institutional/Industrial Setting Form (1C)

This form must be completed AFTER experimentation by the adult supervising the student research conducted in a regulated research institution, industrial setting or any work site other than home, school or field.

Student's Name(s) Anushka Rajagopalan

Title of Project Determining the influence of stent deployment on thrombus formation in patient-specific

To be completed by the Supervising Adult in the Setting (NOT the Student(s)) after experimentation:

(Responses must be on the form as it is required to be displayed at student's project booth; please do not print double-sided.)

The student(s) conducted research at my work site:

1. Did you or your proxy (e.g. graduate student, postdoc, employee) mentor or provide substantial guidance to the student researcher?

☒ Yes

☐ No

a. If no, describe your and/or your institution's role with the student researcher and his/her project (e.g. supervised use of equipment on site without ongoing mentorship and sign below.

b. If yes, complete questions 2-5.

2. Is the student's research project a subset of your ongoing research or work?

☐ Yes

☒ No

Use questions 3, 4 and 5 to detail how the student's project was similar and/or different from ongoing research or work at your site.

3. Describe the independence and creativity with which the student:

a. developed the hypotheses or engineering goals for the research project

The original concept was a side-project I wanted to include with my research, however the goal/methodology was further developed with discussions/brainstorming sessions with the student. He was able to find resources/articles to refine the methodology and was able to tailor the goals to address relevant medical concerns. Her contribution was to incorporate the patient specific models since the idealized models did not result in any notable deposits in the initial testing. She has an excellent research thought process/able to redirect the research.

b. designed the methodology for his/her research project

This was entirely her contribution. She researched older manuscripts attempting similar procedures and developed, through trial and error, the methodology. Clotting enzymes, ratios, constant temperature and adaptation of an older heart model we had in the lab was her contribution. She was very independent. Data collection was limited due to safety/risk of x-ray imaging. However, she contributed the idea of a fixed placeholder for the samples in our data analysis.

c. analyzed and interpreted data

I provided training and direction on the advanced software we needed to process the CT images, but the procedure to process the initial proof-of-concept images was determined by Anushka. I instructed her on the use of a script to process images and she processed all the data. Anushka drew the conclusions of the study. She determined a linear correlation between deposit concentration and stent eccentricity. She also pressed for high speed image evaluation of the lesion motion after the initial conclusion was determined to further her argument.

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Student's Name(s) Anushka Rajagopalan

4. Detail the student's role in conducting the research (e.g. data collection, specific procedures performed). Differentiate what the student observed and what the student actually did.

I guided her with the same level of mentorship I have provided to undergrad and junior grad students in the lab. I taught her basic laboratory and engineering skills, allowing her to develop and refine a methodology for the research. She conducted the experiments and processed the data. She was able to conduct the clotting experiments, develop the methodology, prepare and clean the equipment, run the code/software, and interpret the data. She also ran the left heart simulator for the high speed camera images. I had to acquire the CT images of the post-experiment models (safety risk) and I wrote the code to process the images; this contributed to the significant portion of the research which she observed. I was very pleased that she was able to do most of the research independently.

5. Did the student(s) work on the project as part of a group?

If yes, how many individuals were in the group and who were they (e.g. high school students, graduate students, faculty, professional researchers)?

☐ Yes

☒ No

I attest that the student has conducted the work as indicated above and that any required review and approval by institutional regulatory board (IRB/IACUC/IBC) has been obtained. Copies are attached if applicable.

I further acknowledge that the student will be presenting this work publicly in competition and I have communicated with the student research regarding any requirements for my review and/or restrictions of what is publicized.

Brandon Kovarovic



PhD Candidate

Supervising Adult's Printed Name

Signature

Title

Biomedical Engineering Laboratory, Stony Brook Hospital

11/02/19

Institution

101 Nicolls Road, Stony Brook, NY

Date Signed (must be after experimentation) (mm/dd/yy)

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Address

Email/Phone