

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) Megha Gopal

Title of Project Investigating Substrate Mechanics and ALD TiO₂ for DPSC Differentiation

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?
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.

☒ Yes ☐ No

3. Describe the independence and creativity with which the student:
a. developed the hypotheses or engineering goals for the research project

My research involves studies of the mechanical properties of PB and its interaction with dental pulp stem cells. The research presented by Megha involved modifying the surface using Atomic Layer Deposition. This research raised the question about the interaction between chemistry and mechanics in stem cells transduction, which took it an extra step beyond my work on just mechanics.

- b. designed the methodology for his/her research project

Megha learned spin film deposition and heard about atomic layer deposition from a speaker to the students this summer. She then combined concepts and came up with the experimental design.

- c. analyzed and interpreted data

She analyzed all her data, including the mechanical measurements of the cells on the substrates and was able to interpret the results.

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Student's Name(s) Megha Gopal

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.

Megha spun cast the samples, cleaned the si wafers, and operated the UHV system where she annealed them. She then plated the cells, performed the modulus measurements with the AFM, and analyzed the data. She also fixed the cells for confocal imaging and prepared the samples for RT-PCR. The RT-PCR was performed by a hospital core facility, but she analyzed the data. The ALD was done at BNL for her since she could not enter the facility till she is 18.

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

☒ Yes

☐ No

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

She worked together with a graduate student and a scientist from the CFN-BNL nanofacility.

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.

Miriam Rabinovich
Supervising Adult's Printed Name

[Signature]
Signature

Prof.
Title

Stony Brook University
Institution

1/24/2020
Date Signed (must be after experimentation) (mm/dd/yy)

60 Willow
Address

Email/Phone