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) Matthew Murno

Title of Project Optimizing Strength and Impermeability of Martian Sulfur Concrete Building Structures

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

      Matthew approached me in the summer of 2019 about his project. At that point, he had the idea for the research project and had formulated a list of goals. It was his idea to use sulfur and regolith to make Martian concrete.

   b. designed the methodology for his/her research project

      He designed the methodology for the project mainly on his own. I provided him with standard test procedures for some of the experiments and he developed the mix designs for the sulfur concrete with my guidance.

   c. analyzed and interpreted data

      Matthew performed the initial data analysis on his own. We spoke several times after this to clarify some of the observations.

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Student's Name(s) Matthew Murno

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.

Matthew visited the civil engineering laboratory at Manhattan College several times to conduct this research. He developed the mix designs for the sulfur concrete based on my guidance. In the laboratory he mixed, prepared, and later demolded the specimens made of sulfur concrete. He performed all of the experiments needed to calculate the density, percent air voids, and absorption of the specimens. He observed as I performed the compression tests on the specimens using a concrete compression machine.

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)?

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.

Daniel Hochstein	Assistant Professor
Supervising Adult's Printed Name	Title
Signature	
Manhattan College	12/11/19
Institution	Date Signed (must be after experimentation) (mm/dd/yy)
4513 Manhattan College Parkway, Bronx NY 10471	(718) 862-7177
Address	Email/Phone