

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) Julianne Lampert

Title of Project Epitaxial Growth and Characterization of a Novel (001) Cd3As2 Thin Film on a Lattice M

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

I provided background on Julie's research topic. She further studied literature to define her hypothesis and finalize her research goals for the project. During the project, I noticed Julie's independence and creativity.

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

I offered a general framework of the methods used for her research. Julie customized the methodology based on her research goals.

- c. analyzed and interpreted data

I initially showed Julie how to analyze data using Python. Afterward, Julie customized the code to meet her research objectives.

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Student's Name(s) **Julianne Lampert**

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.

Under my supervision, Julie learned how to use Atomic Force Microscopy, X-Ray Diffraction, Hall Bar preparation in the Clean Room, Physican Properties Measurements using Dynacool, and Molecular Beam Epitaxial thin film growth. She independently operated much of this equipment under direct supervision, documented the data, and came up with a unique interpretation of the results. She was driven and curious to understand the operating mechanism of the equipment.

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)?

The lab group consisted of two post-doctoral researchers, two graduate students, and one undergraduate student.

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.

Manik Goyal

Supervising Adult's Printed Name

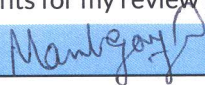
University of California, Santa Barbara

Institution

Santa Barbara, CA 93106

Address

Signature



Graduate Student

Title

08/03/19

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

manikgoyal@ucsb.edu

Email/Phone