

(For JSPS Fellow)

Form B-2
(FY2018)

Date (日付)
06/26/18 (Date/Month/Year: 日/月/年)

Activity Report -Science Dialogue Program-
(サイエンス・ダイアログ事業 実施報告書)

- Fellow's name (講師氏名): Mel Hainey, jr. (ID No. P17366)
- Participating school (学校名): Fujishima Fukui Prefectural High School
- Date (実施日時): 22/06/18 (Date/Month/Year: 日/月/年)
- Lecture title (講演題目) Crystal Growth and Engineering: Like Playing with Really, Really Small Legos
- Name and title of your accompanying person (講義補助者 職・氏名)
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- Lecture format (講演形式):

◆Lecture time (講演時間) 40 min (分), Q&A time (質疑応答時間) 30 min (分)

◆Lecture style (ex.: used projector, conducted experiments)

(講演方法 (例: プロジェクター使用による講演、実験・実習の有無など))

Slides on Projector, Models of Crystals shared with students, Single-crystal and multi-crystalline silicon ingots shared with students. Demonstration of crystal growth using demo kits.

- Lecture summary (講演概要): Please summary your lecture 200-500 words.

The lecture focused on several questions about crystal growth. In particular, the definition of a crystal, including single crystal, polycrystalline, and amorphous structures was given. Along with the definition, ball-and stick models and polycrystalline and single-crystalline ingots were shared with the students. Several general methods for crystal growth including precipitation, freezing/casting, and vapor deposition were defined and examples of each process were given. For example, the students were given a recipe for making rock candy via precipitation of sugar crystals from solution. Finally, several applications of crystal growth, from protein crystallization to identification of high-pressure crystalline phases associated with meteorite impacts, to semiconductor epitaxy. This section include discussions about blue LED technology and introduced my research, growing GaN on glass for micro LED applications.

- Overall advice or comments to future participants in the program (今後の講師へのアドバイス):

I think the example presentations on the JSPS website are far too complex for high school students, particularly first and second year students. I was able to discuss the lecture slides with some of the students in my laboratory to ask them about what high-school students would be able to understand. I would strongly recommend that future participants discuss with undergraduate and masters students in their labs as well. This will greatly assist them in matching the content of their lectures to the level of the students

- Other noteworthy information (その他特筆すべき事項):

I would recommend the JSPS and school representatives more clearly indicate the level of the students attending the lecture. The difference in knowledge between a first and third-year student can be quite large. This information can help JSPS Fellows design their talk to discuss research at an appropriate level.

- Impressions and comments from the accompanying person (講義補助者の方から、本事業に対する意見・感想等がありましたら、お願いいたします。)