

2025 年 1 月 17 日

サイエンス・ダイアログ 実施報告書

1. 学校名・実施責任者氏名: 京都府立城南菱創高等学校 坂田幹雄
2. 講師氏名: Dr. Rani Boons
3. 講義補助者氏名: Ms. Izzat Rafidah
4. 実施日時: 2025 年 1 月 10 日 (金) 11:45 ~ 12:35
5. 参加生徒: 1 年生 39 人、 2 年生 1 人、 3 年生 1 人 (合計 41 人)
備考: 普通科の生徒
6. 講義題目: INSIGHTS IN THE LIFE OF A SCIENTIST
7. 講義概要: ①実験 ②ご自身について ③ご自身の研究内容について
8. 講義形式:
☒対面 ・ ☐オンライン (どちらか選択ください。)
 - 1) 講義時間 45 分 質疑応答時間 5 分
 - 2) 講義方法 (例: プロジェクター使用による講義、実験・実習の有無など)
プロジェクター使用による講義、バイオルミネッセンスの実験
 - 3) 事前学習
☒有 ・ ☐無 (どちらかに○をしてください。)
使用教材 講師の方から事前に送られたキーワードリストやパワーポイントのスライド
9. その他特筆すべき事項:

事前に下見をしたいと希望されたので、12月13日(金)に来ていただき、実験について詳しく打ち合わせを行いました。今まで長い間このプログラムを実施していますが、事前に下見に来られた方は Rani さん以外に一人もいらっしゃいません。生徒たちに興味を持ってもらいたいという熱い思いに感動いたしました。おかげで、生徒たちも大変満足していました。

Form B-2
(FY2024)
Must be typed

Date (日付)
10.01.2025 (Date/Month/Year: 日/月/年)

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

- Fellow's name (講師氏名): Rani Boons (ID No. P23740)

- Name and title of the lecture assistant (講義補助者の職・氏名)
Izzati Rafidah (soon graduating M.Sc.)

- Participating school (学校名): Kyoto Prefectural JonanRyoso High School

- Date (実施日時): 10.01.2025 (Date/Month/Year: 日/月/年)

- Lecture title (講義題目):
Insight in the life of a scientist

- Lecture format (講義形式):
◆ ☒ Onsite ・ ☐ Online (Please choose one.)(対面 ・ オンライン)((どちらか選択ください。))
◆ Lecture time (講義時間) 50 min (分), Q&A time (質疑応答時間) 5 min (分)
◆ Lecture style(ex.: used projector, conducted experiments)
(講義方法 (例: プロジェクター使用による講義、実験・実習の有無など))
Projector - experiment

- Lecture summary (講義概要): Please summarize your lecture within 200-500 words.

The lecture existed out of 2 parts, the presentation and an experiment. The presentation gave an introduction where I lived and my interests, which are related to the choice to go into a scientific direction. That part also included the message that science is very international and English is therefore of high importance. The second part was about the research in our lab and by me. The main topic was bioluminescence, for which a video was used to show more information about bioluminescence. Next we went into the engineering mindset direction, the thinking of what we can do with existing things. Living materials, combining living bioluminescent organisms and material, were discussed. A small quiz was held at the end of the presentation to test whether the students had understood the key points, which was not a great success, however, it gave the opportunity to explain briefly the key take-home messages once more. This was followed by a question & answer session, during which as expected no questions came our direction. However, later on we still got a few questions during or after the experiment. The experiment was divided in two parts; the setup of making hydrogels before the presentation, and the observation after the lecture as the hydrogel had the time to gel. Here they could experience the production of living materials embedding bioluminescent living cells and fluorescent proteins. They could thus put in

practice and observe in real life what they just learned, stimulating a better understanding and triggering their interest in a more fun and effective way.

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

- Impressions and comments from the lecture assistant（講義補助者の方から、本プログラムに対する意見・感想等がありましたら、お願いいたします）:

In the video introducing bioluminescence, a Japanese translation was provided to deepen students' understanding of the science behind bioluminescence. During the experiments and the conclusion section, English-Japanese instructions were also given to enhance comprehension. Lastly, two students were asked to share their comments about the lecture and experiments. Both expressed being impressed and intrigued by bioluminescent plants and organisms, especially when triggering the bioluminescence of dinoflagellates by applying force. One student raised a question about bioluminescence in plants and organisms, specifically asking how to synchronize the bioluminescence system in these organisms and plants.

In summary, the lecture and experiments were successfully conducted. Most students made efforts to understand the English and the science behind bioluminescence. We hope this experience will serve as a motivation for them to become successful scientists on a global scale in the future.

