

様式 A-1
(FY2024)

2024 年 11 月 14 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: お茶の水女子大学附属高等学校
2. 講師氏名: Dr. Irene FRIZZA
3. 講義補助者氏名: なし
4. 実施日時: 2024 年 11 月 14 日 (木) 15:30 ~ 16:30
5. 参加生徒: 1 年生 7 人、 2 年生 3 人、 3 年生 0 人 (合計 10 人)
備考: 希望者
6. 講義題目: Robots: Our New Friends!
7. 講義概要: ヒト型ロボットの柔軟な足部分の開発
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 30 分 質疑応答時間 30 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
 - 3) 事前学習
有 (どちらかに○をしてください。)
使用教材 講師から提供された講義スライド
9. その他特筆すべき事項:

Form B-2
(FY2024)
Must be typed

Date (日付)
15/11/2024 (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): Frizza Irene (ID No. P24707)
- Name and title of the lecture assistant (講義補助者の職・氏名)
Asako Kaneko, teacher
- Participating school (学校名): Ochanomizu University Senior High School
- Date (実施日時): 14/11/2024 (Date/Month/Year: 日/月/年)
- Lecture title (講義題目):
"Robots: Our New Friends!"
- 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) 40 min (分), Q&A time (質疑応答時間) 20 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))
used projector
- Lecture summary (講義概要): Please summarize your lecture within 200-500 words.

In my lecture on robots, I introduced high school students to the basics of robotics—explaining what robots are and the unique role of humanoid robots that are designed to look and move like humans. I shared how robots can be helpful in challenging or dangerous environments, such as fire zones, deep seas, or even in space, where they can take on tasks that are risky for humans.

I focused on inspiring the girls in the audience. I shared my personal journey as a female researcher, discussing some of the challenges women may face in science and engineering. I emphasized that although it's not always easy, perseverance, confidence, and support from mentors can make a big difference. I encouraged them to pursue their interests bravely, reminding them that they, too, can overcome obstacles. By sharing my experiences, I hoped to show them that they have the potential to achieve great things in any field they choose.

Finally, I talked about my research on designing and building flexible robotic feet, which help robots walk more naturally and handle different surfaces. I showed how I created channels inside

the foot using wax molds and silicone, baked it to form hollow spaces, and wrapped it in strong materials like kevlar to prevent expansion. Adding arches and a small camera allowed the foot to mimic human movement and scan the ground for better stability. Through videos and examples, I demonstrated the complex process of developing this robotic foot, which can adapt its stiffness to different surfaces.

◆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。):



My Journey into Robotics

- My name is Irene and I'm a researcher in robotics.
- As a young girl, I was fascinated by robots, but I never imagined I would one day build them.
- Today, I work on developing technologies that could change the way we live and work with robots.
- However, my journey hasn't been without challenges.

