

様式 A-1

年 月 日

サイエンス・ダイアログ 実施報告書

1. 学校名: 松本秀峰中等教育学校
2. 講師氏名: Dr.Tongil KO
3. 講義補助者氏名: 則竹敦博 様
4. 実施日時: 2026 年 6 月 6 日 (土) 14 :00 ~ 16 : 00
5. 参加生徒: 1 年生 10 人、 2 年生 11 人 (合計 21 人)
備考: 科学部の生徒と希望生徒
6. 講義題目: How do we discover new drugs?
7. 講義概要: 講義は2Session から成り、Session1 では出身国のこと、自身の研究内容のイントロダクションも兼ねて How do drugs cure diseases?など薬についての基本的な情報や歴史が紹介されました。休憩を挟み、Session2 では最先端の技術や自身の研究内容について紹介され、最後は What next?で締めくくられました。
- 8.
9. 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 80 分 質疑応答時間 15 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 ・ ☐無 (どちらか選択ください。)
使用教材: 生物の教科書および本校教員作成の教材
10. その他特筆すべき事項:

Form B-2

Date (日付) 23/6/2026

(Date/Month/Year: 日/月/年)

Must be typed

Activity Report -Science Dialogue Program-

(サイエンス・ダイアログ 実施報告書)

1. Fellow's name (講師氏名): Tongil Ko (ID No. P24727)
2. Name and title of the lecture assistant (講義補助者の職・氏名)
Atsuhiro Noritake, PhD Student
3. Participating school (学校名): Matsumoto Shuho Secondary School
4. Date (実施日時): 6/6/2026 (Date/Month/Year: 日/月/年)
5. 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) 75 min (分), Q&A time (質疑応答時間) 15 min (分)
 - ◆ Lecture style (e.g., 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
6. Lecture title (講義題目):
Researching New Therapies Around the World
7. Lecture summary (講義概要): Please summarize your lecture within 200-500 words.

As part of the JSPS Science Dialogue program, I delivered a lecture to high school students introducing the process of drug discovery and the role of scientific research in developing new medicines. The presentation aimed to make biomedical research accessible to a general audience by combining historical examples, personal experiences, and current research topics.

The lecture began with an overview of disease, discussing how illnesses can arise from bacteria, viruses, genetic mutations, and autoimmune disorders. Historical approaches to treating disease were then introduced, including traditional remedies and the discovery of important medicines from natural sources. The stories of quinine and penicillin were used to illustrate how drugs have been discovered through both observations of nature and unexpected scientific findings.

The presentation then transitioned to modern drug discovery. Students were introduced to the concept that proteins perform many essential functions within cells and that medicines often work by binding to proteins and changing their activity. Using a lock-and-key analogy, I explained the

challenge of identifying molecules capable of interacting with specific biological targets. The concepts of high-throughput screening and the enormous size of chemical space were discussed to highlight why new technologies are needed to discover future medicines.

A major focus of the lecture was the research conducted in Professor Suga's laboratory at the University of Tokyo. Using simplified analogies, I introduced mRNA display technology and explained how it enables the screening of billions to trillions of molecules to identify potential therapeutic candidates. The pathway from an initial discovery to an approved medicine was also discussed, including clinical trials and the challenges associated with drug development.

Finally, I shared my personal educational journey from Brazil to the United States and Japan, as well as my experiences as a researcher. The lecture concluded with encouragement for students to remain curious, embrace mistakes as part of learning, and consider pursuing careers in science. Through this dialogue, students gained an introduction to both the scientific process and the people behind scientific research.

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

The lecture went very smoothly. The teachers were very extremely helpful, especially Takasu-sensei, for setting up the room, projector and making us feel welcomed. The students also demonstrated maturity, remained focused during the whole talk, and made for an engaging Q&A session. Although, it took a couple of minutes for them to warm up during question time, they eventually asked many questions from organic chemistry to my experience as a researcher.

9. 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。):

Comments from Noritake-san:

I was particularly impressed by the high school. The students for the science club were very interested in pursuing scientific research in the future. Several students even came to me to ask questions about my own experience as a researcher. I think this program gave the students a great experience that will motivate them to study English and science.



What are diseases?

- Your body is a machine, but machines break occasionally
- Diseases occurs when normal processes stop working properly
- Example: Cold, Flu, COVID, etc.

