

様式 A-1  
(FY2025)

2026 年 1 月 21 日

## サイエンス・ダイアログ 実施報告書

1. 学校名： 富山県立富山高等学校
2. 講師氏名： Dr. Ekaterina SANGATI
3. 講義補助者氏名： 豊川 航 先生
4. 実施日時： 2026 年 1 月 21 日 ( 水 ) 14:40 ~ 16:40
5. 参加生徒： 1 年生 32 人  
備考：人文社会科学科の生徒
6. 講義題目：「生きている・知的である」とするものは何か。またそれをどう研究するか。
7. 講義概要： 講師の現在に至るまでの経歴、母国の紹介、研究内容についての紹介
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 100 分 質疑応答時間 10 分 (休憩 10 分程度)
  - 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、質疑応答、グループディスカッション
  - 3) 事前学習  
有 ・ 無 (どちらか選択ください。)  
使用教材：事前学習プリント(講義の概要を英語でプリントにしたもの)
9. その他特筆すべき事項：

Form B-2  
(FY2025)  
Must be typed

Date (日付)  
28/01/2026 (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): Ekaterina Sangati (ID No. P24012)

- Name and title of the lecture assistant (講義補助者の職・氏名)

Dr. Wataru Toyokawa

- Participating school (学校名): Toyama Prefectural Toyama Senior High School

- Date (実施日時): 21/01/2026 (Date/Month/Year: 日/月/年)

- Lecture title (講義題目):

What makes something alive or intelligent? \_\_\_\_\_

- 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) 100 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))

I used the project to show my slides, conducted discussions and wrote students' points on the blackboard, had them vote on different answers (to facilitate participation), answered their questions, conducted a live behavioral experiment (a demo I made for this lecture). \_\_\_\_\_

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

In the first part of this lecture, I shared my journey between philosophy and cognitive science, starting from the questions I used to ask in high school (Who am I? What is the meaning of life?) and moving to how I perceived these questions addressed in different fields, how they became more specific, and how I keep searching for answers. Together with the students, we then reflected on whether specific examples of different systems (a rock, a candle, a bacterium, a plant, a robot, a dog) can be considered alive and cognitive (intelligent, conscious, goal-directed). We discussed how some examples are tricky but the way we position these systems has consequences. For example, our answer as to whether a robot or a ChatGPT can truly love us depends on whether we think it's a cognitive agent. I briefly introduced a specific theory that argues that life and cognition are inseparable. In the second part of the lecture we scaled up to group phenomena and collective intelligence. We discussed whether a flock of birds or an ant colony are a single entity or a group of many entities and what it would mean to say that a group can be a cognitive system. At the end, I conducted a live demo in which the students jointly controlled an object in the game, striving to keep it in the safe zone. This activity is similar to a

group of people moving a mikoshi shrine together without letting it topple over. The students reflected on what was difficult and how their performance in the game could be improved. The overall theme of the lecture was adaptive behavior from single-celled organisms to social systems.

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

Because the students can be shy to share their reflections or ask questions in English, I found it most effective to elicit their participation by simple votes on different options. It was also helpful to have a Japanese speaking colleague who understands my research to translate when it was needed.

- 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。):

高校の初年度から科学の最先端に触れられるのは素晴らしい機会だと思います。私たち科学者としても、これ以上無いアウトリーチの機会ですから、今後もぜひ続けていただきたいです。