

様式 A-1

2026 年 6 月 25 日

サイエンス・ダイアログ 実施報告書

1. 学校名: 山陽学園高等学校
2. 講師氏名: Dr. Matheo López-Pachón
3. 講義補助者氏名:
4. 実施日時: 2026 年 6 月 11 日 (木) 09:55~10:45
5. 参加生徒: 2 年生 13 人、3 年生 25 人 (合計 38 人)
備考: (例: 理数科の生徒)
6. 講義題目: GIANT SALAMANDER
7. 講義概要: オオサンショウウオが嚙まずに素早く食べているのか、その構造的な特徴について
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 40 分 質疑応答時間 10 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)
プロジェクターを使用した講義
 - 3) 事前学習
☐ 有 ・ ☒ 無 (どちらか選択ください。)
使用教材: スライドのハンドアウトをいただき、生徒も事前知識を持って授業を受けました
9. その他特筆すべき事項:

Form B-2

Date (日付) 11/06/2026

(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): Matheo Lopez Pachon (ID No. P25411)
2. Name and title of the lecture assistant (講義補助者の職・氏名)
Takashi Inoue, Teacher, Sanyo Gakuen High School
3. Participating school (学校名): Sanyogakuen High School
4. Date (実施日時): (Date/Month/Year: 日/月/年)
11/06/2026
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) 50 min (分), Q&A time (質疑応答時間) 10 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))
- Interactive lecture using PowerPoint slides, photographs, videos, and research examples. A giant salamander skeleton and visual materials were also used to explain the anatomy, feeding mechanism, conservation issues, and scientific methods applied in the research.
6. Lecture title (講義題目):
Understanding Giant Salamanders through Biology and Fluid Mechanics

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

The lecture introduced high school students to the biology, conservation, and scientific study of giant salamanders. The presentation began with a general explanation of giant salamanders, including their size, habitat, lifespan, feeding behavior, and importance as a protected species in Japan.

The students learned that giant salamanders are ambush predators that wait for prey and use a rapid and efficient attack. Their feeding mechanism was explained through the concept of suction feeding, in which the sudden opening of the mouth creates water movement that carries the prey into the oral cavity. Videos, photographs, and anatomical examples were used to make this process easier to understand.

The lecture also presented my current research, which combines biology, engineering, high-speed video recording, experimental work, and computational fluid dynamics. I explained how computer simulations can be used to study water movement, pressure, and prey motion during feeding. This demonstrated how knowledge from physics, mathematics, biology, and engineering

can be combined to answer questions about living animals.

Conservation problems were also discussed, particularly the hybridization between native Japanese giant salamanders and introduced Chinese giant salamanders. The students were encouraged to think about the importance of protecting native species and understanding the relationship between science and society.

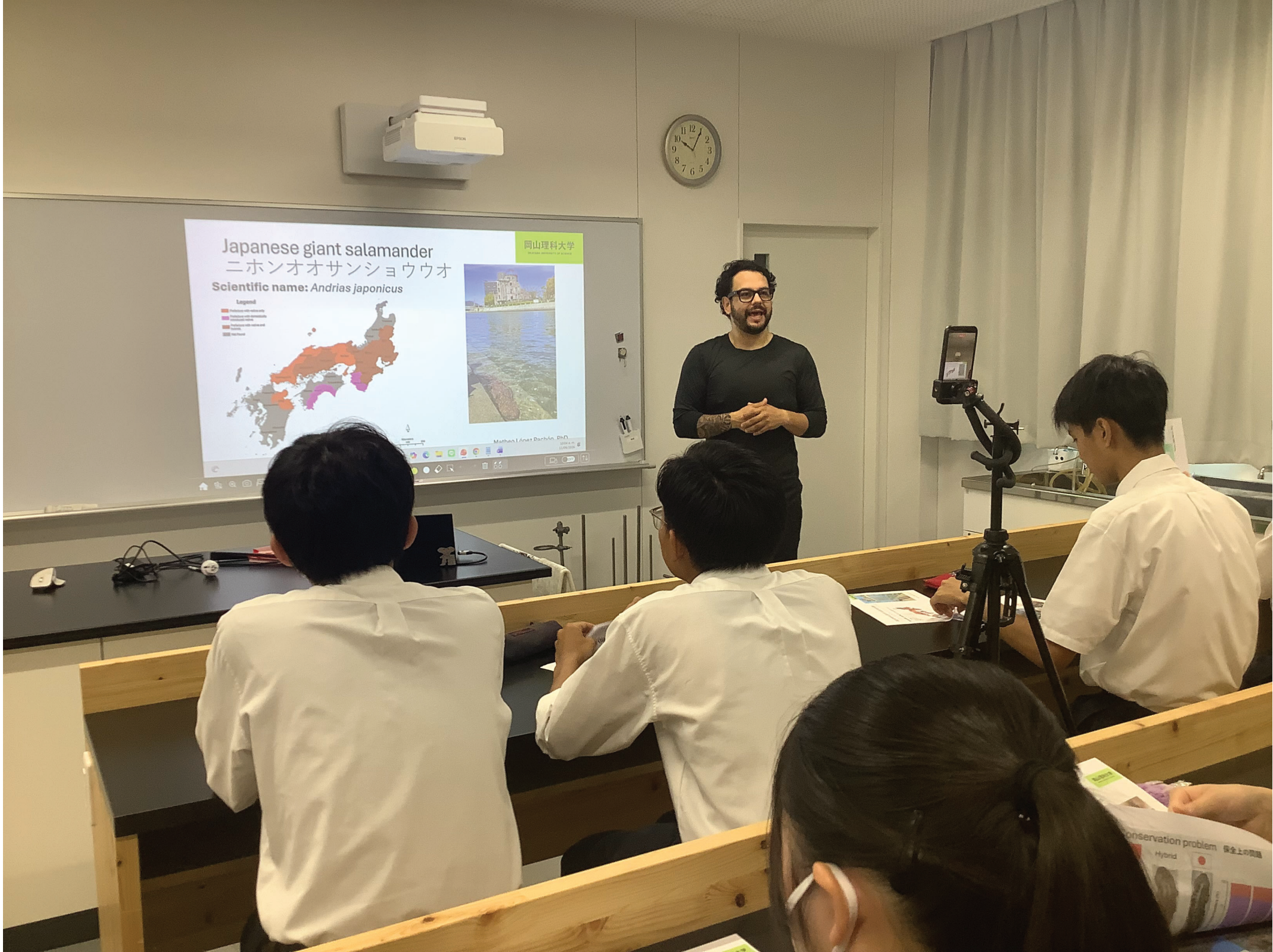
The main objective of the lecture was to show students that science begins with curiosity and that asking simple questions about nature can lead to meaningful research. The session concluded with a question-and-answer period in which students discussed the animals, the research methods, and the experience of working as a scientist in Japan.

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

The students showed great interest and actively participated in the lecture.

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。):

The lecture was engaging and helped students understand how science is applied in real research.



Japanese giant salamander
ニホンオオサンショウウオ
Scientific name: *Andrias japonicus*

岡山理科大学
Okayama University of Science

Legend

- Red: Distribution area in the past
- Purple: Distribution area in the present
- Blue: River
- Green: National park

Mathan Linat Darchin, PhD