

様式 A-1
(FY2025)

令和8年 1月 25日

サイエンス・ダイアログ 実施報告書

1. 学校名: 栃木県立佐野高等学校
2. 講師氏名: Dr. Smundu Darshana
3. 講義補助者氏名: 岩井 優祈
4. 実施日時: 令和8年 1月 23日 (金) 14:50 ~ 15:50
5. 参加生徒: 1年生 74人、 2年生 64人、 年生 人 (合計 人)
備考: 全員、文系 選択者
- 6 講義題目: Geospatial Modeling of Wetland Ecosystem Services in Global Cities and Possible Solutions
7. 講義概要: 世界の大都市における湿地生態系サービスのシナリオモデリングと潜在的解決策
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 50 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:
6. その他特筆すべき事項:
 - ・高校生でも分かりやすいように図や実物を利用し、比較的易しい英語でゆっくり丁寧に説明していただきました。
 - ・補助の方も適度な解説を入れていただいて、生徒はより理解が深まったようです。

Form B-2
(FY2025)
Must be typed

Date (日付)
06/02/2026
(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): ATHUKORALA ARACHCHIGE SUMUDU DARSHANA
(ID No. P24301 _____)

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

Assistant Prof. Yuki Iwaki, University of Tokyo, Japan

- Participating school (学校名): Tochigi Prefectural Sano High School, Japan

- Date (実施日時): 23/01/2026 (Date/Month/Year: 日/月/年)

- Lecture title (講義題目):

Monitoring Changes in Wetland Ecosystem Services in Global Cities and Possible Solutions

- 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) 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))

Using projector. Furthermore, I used the world globe to show the locations of selected cities and important places. To explain carbon storage in urban wetlands, I used two plants and demonstrated the concept practically. This approach helped students understand how urban wetlands store carbon and why wetland plants are important.

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

Darshana Athukorala, PhD¹

¹JSPS Postdoctoral Research Fellow,

Institute of Life and Environmental Sciences,

University of Tsukuba,

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Summary

On January 23, 2026, I had the privilege of participating in the Science Dialogue program at Tochigi Prefectural Sano High School, Japan, an initiative supported by the Japan Society for

the Promotion of Science (JSPS). The program encourages Japanese high school students to develop scientific curiosity and global awareness by interacting with researchers from around the world. My presentation focused on “Monitoring Changes in Wetland Ecosystem Services in Global Cities and Possible Solutions.”

The session started with a friendly introduction to help students feel comfortable. I shared my academic journey as a geo-environmental scientist, highlighting my childhood, high school years, undergraduate education, master’s and PhD studies (Japan), as well as my research experience at leading national research institutions in Japan. The core of the presentation addressed the scientific principles and practical importance of protecting urban wetlands. I explained key topics such as rapid global urbanization, what urban wetlands are, why they are important, the relationship between urban development and wetland loss, and what actions can be taken to protect them.

My research integrated state-of-the-art remote sensing technologies for the long-term monitoring of urban wetlands and their ecosystem services. These approaches aimed to support sustainable urban wetland management, enhance ecosystem services, and improve the well-being of urban residents. To support the theoretical understanding, I conducted a practical demonstration using remote sensing and GIS, based on case studies from Niigata, Japan, and Colombo, Sri Lanka—both globally important urban Wetland Cities designated under the Ramsar Convention. I explained how long-term urban wetland changes can be detected using satellite-based remote sensing data, as well as recommendations for conservation.

I also introduced carbon storage change detection in urban wetlands, explaining the four main carbon pools: above-ground biomass, below-ground biomass, dead organic matter, and soil carbon, and how total carbon storage is estimated. During the lecture, I asked several questions, and the students responded very actively, demonstrating strong focus and engagement throughout the lecture. In the final remarks, I shared a motivational message, encouraging students to believe in themselves, work hard, and never stop learning.

The students’ enthusiasm and interest in science showed that the program inspired future researchers. I sincerely thank JSPS and its entire team, Tochigi Prefectural Sano High School, the University of Tsukuba (Professor Dr. Morimoto Takehiro, Emeritus Professor Dr. Yuji Murayama), Assistant Professor Dr. Yuki Iwaki (University of Tokyo, lecture assistant), and all participating students for their warm welcome and cooperation. This experience was an important milestone in my academic career and showed how science communication can connect cultures and inspire the next generation of scientists.

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

The lecture was very interactive, and both students and teachers enjoyed it. High school teachers attended the session together with their students. After the lecture, many students asked thoughtful and interesting questions about my research. They wanted to know why the loss of carbon storage in wetlands is harmful to the environment, why carbon is important, and even what kind of plants are the best.

I was very happy to see the strong interest and enthusiasm from both students and teachers.

Their questions clearly showed their curiosity and willingness during the lecture I presented. Overall, the experience was enjoyable and meaningful. It allowed me to share my research and personal experiences, while encouraging students to think globally, improve their English communication skills, and work hard toward their future goals.

- 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。):

I am Assistant Professor Yuki Iwaki, and it was a great honor to participate in the JSPS science dialogue program as a lecture assistant for Dr. Darshana Athukorala's lecture. From the preparation stage through the lecture, I used my language skills to support the lecturer and assist with the teaching materials.

More than 130 students attended the lecture and showed strong interest in scientific research. The students enjoyed the session, actively answered questions, and remained fully focused throughout the lecture.

As part of my role, I provided introductory explanations of remote sensing concepts to help bridge the students' understanding. This presented a meaningful challenge: making specialized scientific terminology accessible to beginners while preserving the excitement of modern Earth observation technology.

Finally, I sincerely thank JSPS and the lecturer, Dr. Darshana Athukorala, for giving me this meaningful opportunity to be involved.



Self-Introduction (自己紹介)

Slide content including text and images related to self-introduction.

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