

様式 A-1
(FY2023)

令和5年7月31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: 愛知県立西尾高等学校 鈴木 雅文
2. 講師氏名: Dr. Virgile Christian Emile CHARTON (Mr.)
3. 講義補助者氏名: _____
4. 実施日時: 令和5年 7 月 26日 (水) 14 :00 ~ 16 : 00
5. 参加生徒: 3年生 14人、 1年生 8人、 (合計 22人)
備考: 3年理系生徒14名、1年生徒8名
6. 講義題目: 著しい密度変化を伴う反応性流れのモデリングと高速・高精度解析
7. 講義概要: 宇宙工学概要、上記の講義と実験、学生に対するメッセージ
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 90 分 質疑応答時間 約 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、簡易ロケットの推進力実験ワークショップ
 - 3) 事前学習
有 ・ 無 (どちらかに○をしてください。)
使用教材 講師から提示されたの単語リスト
9. その他特筆すべき事項:
予定時間終了後も、厚意で生徒の個別質問に回答して下さった。

Form B-2
(FY2023)
Must be typed

Date (日付)
27/07/2023 (Date/Month/Year: 日/月/年)

Activity Report -Science Dialogue Program-
(サイエンス・ダイアログ事業 実施報告書)

- Fellow's name (講師氏名): Virgile CHARTON (ID No. PE22746)

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

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

- Date (実施日時): 26/07/2023 (Date/Month/Year: 日/月/年)

- Lecture title (講義題目):

How to go and remain into space

- 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) 120 min (分), Q&A time (質疑応答時間) 15 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))

Slide presentation with quizz activity and workshop experiment

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

My lecture aimed to present modern science and the role of researchers through my personal experience. I focused on the international aspect of science, which is required in many research process today.

I started to introduce myself and the country I came from (France). Then, after describing space exploration history and the human beings' benefit from space science, I conducted a thought experiment using quiz and videos to teach the student how to go and remain in space. The goal was to help a fictive Sticky-san to realize his dream of exploring space. The lecture used basic physical principles displayed in a humorous style to retain their attention while exploring physics law using concrete examples. After that, I concluded with a description of a researcher's life (science, publication, peer-reviewing, education, etc.) and the modern science principles: repeatability and reproducibility.

Finally, I performed a workshop with the student where they could use the physics principles learnt during the lecture to conduct a scientific project as a researcher would have. They could measure the travelled distance along a rope of a balloon-propelled "rocket". This experiment

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aimed to study the influence of the rocket nozzle exit size and compare the results with the theory. Four student research teams gathered measurements during this experiment and shared the results. Thanks to this science workshop, students learned to adapt. They understood that science often leads to unexpected results and that failure is also part of the work. I showed examples of great innovation resulting from failure, and the students realized that scientists don't worry about failure; what they do is learning from them.

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

- Impressions and comments from the accompanying person (講義補助者の方から、本事業に対する意見・感想等がありましたら、お願いいたします。):



My resume

Graduate School of Engineering – ISAE ENSMA (Poitiers, 2013-2016)

3 month internship in Aerospace Propulsion and Combustion Laboratory in SNU (Seoul)

PhD thesis on Ice Crystal Icing for Jet Engine (2017-2020)

- Funded by Safran Aircraft Engines
- Issued by ISAE-Supaero (Toulouse)
- Work in collaboration with ONERA



Post-doctoral position in Hybrid Simulation of Rocket Plume Plasma at High Atmosphere (Paris, 2021-2022)



Post-doctoral position in Nagoya University with a JSPS
Fellowship (Nagoya, 2022-2023)

