

(For JSPS Fellow)

Form B-5

Date (日付)

10/12/2016 (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): Luca SCHWEIGHAUSER (ID No. PE16007)
- Participating school (学校名): Tokyo Metropolitan Hibiya High School
- Date (実施日時): 25/11/2016 (Date/Month/Year: 日/月/年)
- Lecture title (講演題目): (in English) From Dyes to Molecular Machines – A Brief History of Modern Organic Chemistry  
(in Japanese)
- Lecture summary (講演概要): Please summary your lecture 200-500 words.

The lecture was divided into three parts. In the first part, I described my path to becoming a scientist, my life as a scientist and about my home country. The second part of the lecture was dedicated to the development of dyes, their function, chemical structure and the connection to various modern topics in chemical research. We conducted an experiment using a pH indicator to illustrate how color and chemical structure are connected. The lecture concluded with a question/answer session during which the students asked many interesting questions – scientific and non-scientific.

#### Abstract of the scientific part:

Chemistry developed within the 19th century to a major industry sector. Some of the earliest products chemical companies produced were dyes for textile industry. In addition to their aesthetic appeal, dyes have a number of functional applications and this has been a key driver for modern research. For example, single dye molecules can be used as light sensitive molecular switches. Assembling large number of such switches could pave the way towards the development of complex devices such as molecular computers. Research is being conducted to explore many other applications, for instance, light switchable drugs or materials.

- Language used (使用言語): English
- Lecture format (講演形式):
  - ◆Lecture time (講演時間) 60 min (分), Q&A time (質疑応答時間) 30 min (分)
  - ◆Lecture style (ex.: used projector, conducted experiments)

(講演方法 (例: プロジェクター使用による講演、実験・実習の有無など))

We used a projector, the blackboard and conducted an experiment.

- ◆ Interpretation (ex.: assistance by accompanied person, provided Japanese explanation by yourself) (通訳 (例: 同行者によるサポート、講師本人による日本語説明))

Satori KOWASHI provided Japanese explanations and translated questions.

- ◆ Name and title of accompanied person (同行者 職・氏名)

Satori KOWASHI, M1 Student, The University of Tokyo

- ◆ Other note worthy information (その他特筆すべき事項):

- Impressions and opinions from accompanied person (同行者の方から、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。):

参加者が高校一年生、二年生だったこともあり、適宜日本語解説を加え、専門的な内容を噛み砕いて説明しました。参加者は講義を熱心に聞き、英語にも関わらず、内容を十分に理解しているようでした。こうした講義を通して、高校生が大学の研究に興味を持ち、進路決定に役立てていただければ幸いです。