

(For JSPS Fellow)

Form B-5

Date (日付)

10/03/2016 (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): Francis SHAND (ID No. P15113 )
- Participating school (学校名): Shizuoka Prefectural Kakegawa Nishi High School
- Date (実施日時): 08/03/2016 (Date/Month/Year: 日/月/年)
- Lecture title (講演題目): (in English) Cancer and the Immune System  
(in Japanese) 癌と免疫の関わり
- Lecture summary (講演概要): Please summary your lecture 200-500 words.

After a brief introduction by the accompanying person (Mr TSUKUI), I presented the lecture in the following six sections:

*1. My home town: Melbourne, Australia*

I showed photos of Melbourne, then compared the population and size of Japan and Australia and talked about the demographics of Australia.

*2. My career*

I presented a brief overview of my career including primary school, high school, undergraduate study, graduate study and overseas exchange.

*3. Immune cells in the blood and bone marrow [activity]*

Microscope slides of mouse blood were sent to the school in advance of the lecture and the students examined them with their teachers. I discussed the different cells that the students could see in the blood. I then organized an activity in which the students split into groups of 6 and received a photo of immune cells in mouse bone marrow. I asked the students to classify and count the cells in the photo. I then tabulated the data and prepared graphs during the lecture, explaining the concept of statistical error bars to the students. I asked the students to make a conclusion about their data. I then introduced flow cytometry, another method that we use to classify and count cells in the lab.

*4. Cancer and the immune system*

I used cartoons from the website [www.ono-oncology.jp/contents/patient/immuno-oncology/](http://www.ono-oncology.jp/contents/patient/immuno-oncology/) to

introduce the concept of cancer, the immune system, and how the immune system interacts with cancer. I also introduced different approaches to cancer therapy, and explained the concept of immunotherapy.

#### 5. *Our research: an example*

I explained that scientists aim to answer questions about the world, and that scientists communicate at scientific meetings or by writing journal articles. I briefly introduced the main points from one of my research articles, in which we used fluorescent mice to track monocyte migration from the bone marrow and spleen to tumors.

#### 6. *Questions*

The accompanying person Mr. Tsukui chaired questions from the students. We received some excellent questions about the different types of immune cells and about the success of cancer therapy.

- Language used (使用言語): English

- Lecture format (講演形式):

◆Lecture time (講演時間) 70 min (分), Q&A time (質疑応答時間) 20 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))

Showed PowerPoint slides via projector, conducted activity (~20 min) in which students counted immune cells from photo handouts, and then used the class results to make graphs.

◆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))

Minimal. Accompanying person acted as session chair and encouraged the students to ask questions in both Japanese and English.

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

Mr. Tatsuya TSUKUI, 4th year PhD student, Department of Molecular Preventive Medicine, University of Tokyo.

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

After the lecture, we met the headmaster Mr. Totsuka and heard about the opportunities the students have for international exchange and science education.

- 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。):

日本の高校生はシャイなので、皆の前で質問したり発言することを躊躇します。ただ講義をして質疑応答するだけでなく、やる気のある学生と講師がより進んだコミュニケーションを取る機会があっても良いと感じました(例: 簡単な実験・フィールドワーク等)