

(For JSPS Fellow)

Form B-5

Date (日付)

26/01/2017 (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): Timothy Day (ID No. P16089)
- Participating school (学校名): Shizuoka Kita Junior High School
- Date (実施日時): 26/01/2017 (Date/Month/Year: 日/月/年)
- Lecture title (講演題目): (in English) Developmental Biology: Understanding how we are made
(in Japanese)
- Lecture summary (講演概要): Please summary your lecture 200-500 words.

The presentation was broken into two parts: in the first part I spoke about some aspects about my culture in America, especially in Pennsylvania in the eastern part of America and the Great Lakes region. I tried to show aspects of America which may be interesting to students who can later visit! I then spoke about my early career development and education on my path to science. I talk about the major components of developmental biology, including morphogenesis, differentiation, patterning, and gene expression. As much of developmental biology utilizes manipulations of DNA for investigations, I next make an introduction to the central dogma of genetics, namely DNA is converted to RNA, which is then converted to protein, which creates a biological effect. I show how we use the mouse model organism to research how stem cells or primitive cells differentiate into tissues which have various functions, and why it is important to be able to use model organisms as a substitute for humans. I detail the effect of the removal of the gene β -catenin on the differentiation of bone from stem cells (progenitor cells). I then show my current research investigating interactions between the mother's uterus and the fetus, and how it can affect development. To study this our group has developed a method to create 3D models of *in vivo* and *in utero* tissues with high accuracy. I show the students 3D reconstruction of internal organs such as the heart, and how its vasculature can also be mapped. This method can then be used to analyze internal structures of organs or tissues which, if removed by hand would become distorted or destroyed. This method is currently being used to analyze the morphogenesis of newly implanted blastocysts into the uterus.

- Language used (使用言語): English
- Lecture format (講演形式): Powerpoint

◆Lecture time (講演時間) 100 min (分), Q&A time (質疑応答時間) 15 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))

Used Projector

◆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))

I prepared a glossary of terms used in the presentation in English, and had them translated to Japanese

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

None

◆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。):