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（For JSPS Fellow）

Form B-5

Date（日付）
23/10/2015 （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）: Alexander Tomoaki Taguchi （ID No. P14415）

- Participating school（学校名）: Kamaishi High School

- Date （実施日時）: 9/10/2015 （Date/Month/Year:日/月/年）

- Lecture title（講演題目）: （in English） How Magnets Have Changed the World We Live In

（in Japanese） 磁力が身近な世界に与える影響

- Lecture summary（講演概要）: Please summary your lecture 200-500 words.

I lectured on how magnets and electromagnetism have influenced the fields of science and engineering. First, I talked about myself and my home (Arizona, United States of America). Then I asked the students to talk a little bit about themselves to get them used to speaking in English. After this, I discussed my motivation for becoming a scientist, emphasizing that I want to make a beneficial impact on the world, and that the most important aspect of science is communication and collaboration. The first science topic was MRI (Magnetic Resonance Imaging). I showed MRI scans of vegetables and humans. MRI is like getting an X-ray scan, but the resolution is much better in an MRI compared with X-ray. Next, we discussed how magnetic resonance techniques can also be used to determine the 3D structure of molecules. I focused the discussion on the structure determination of protein molecules. For the experiments, I had the students build two types of motors. The first one was very simple, and required only a battery, a magnet, a screw, and a wire. The second type of magnet I had them build was more complicated, involving a delicate copper wire loop. In the end, all of the students were successful in building the motors. Finally, I talked about how magnetotactic bacteria build magnets in their bodies to orient themselves with respect to the Earth's magnetic field. The students seemed to have fun and a couple of them asked questions during question time.

- Language used（使用言語）: English

- Lecture format（講演形式）:

◆Lecture time（講演時間） 100 min（分）, Q&A time（質疑応答時間） 10 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））

I used a projector for a PowerPoint presentation and conducted experiments

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◆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））

No interpretation needed

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

◆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。）: