

(For JSPS Fellow)

Form B-5

Date (日付)

11/10/2014 (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): Brian Carlton (ID No. P13781)
- Participating school (学校名): Nirayama High School
- Date (実施日時): 10/10/2014 (Date/Month/Year: 日/月/年)
- Lecture title (講演題目): (in English) Geotechnical Engineering: Site Response Analysis
(in Japanese) 地盤工学: サイト応答解析

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

First I spoke about the United States and compared it to Japan so the students would have some context. Then I spoke about my home town of Seattle, Washington, and talked about famous people, landmarks, and companies of Seattle. Next, I spoke about Washington State University, where I received my undergraduate degree, and the University of California, Berkeley, where I received my masters and PhD degrees. Then I talked about Tokyo Institute of Technology, where I am currently doing a post-doc, as well as my particular laboratory. Next, I explained why I became a geotechnical engineer. The second half of my talk was devoted to geotechnical engineering. First I talked about how earthquakes are created and the theory of plate tectonics. I then explained that the earthquake source, path, and site are the three things that influence shaking due to earthquakes. Next I defined the amplitude, duration, and frequency content of earthquake ground motions and explained why they are important to earthquake engineers. I then described that all things have a natural frequency, and the effect of resonance. I gave examples of resonance in engineering by showing videos of the Tacoma Narrows bridge collapse, and the swaying of the Millennium Bridge in London on its opening day. Finally, I showed examples of site effects in earthquake engineering from the 1967 Caracas Earthquake, the 1985 Michoacán Earthquake, and the 1989 Loma Prieta Earthquake.

- Language used (使用言語): English

- Lecture format (講演形式):

◆Lecture time (講演時間) 56 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))

I used a projector to show a PowerPoint presentation as well as short films

- ◆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 was assisted by a masters student in my laboratory who helped explain the more technical aspects of the talk in Japanese to the students, after I explained them in English

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

 Mr. Ryu YAMANAKA

- ◆Other noteworthy 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。):

同行させていただきました山中です。英語にもかかわらず、韮山高校の生徒の皆さんが熱心に講義を聞かれていたのが印象的でした。クラス全員の前で、慣れない英語を使って質問することに緊張している様子でしたが、これから英語に触れる中で徐々に慣れていって頂ければと思います。

我々も皆さんがどこまで物理学の知識があるのかわからず、半ば手探りでの講義でしたが、理数科の方々だけあって十分な素地をもっていらっしゃったようで助かりました。今回は研究のほんの入口だけ紹介しました。少しでも興味を持って頂けると嬉しく思います。短い時間ではありましたが、皆様の今後のご活躍に少しでも寄与できれば幸いです。