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（For JSPS Fellow）

Form B-5

Date（日付）
12/03/2014 （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）: Wen-Ya Ko （ID No. P13096 ）

- Participating school（学校名）: 高田高等学校 (TAKADA HIGH SCHOOL)

- Date （実施日時）: 12/03/2014 （Date/Month/Year:日/月/年）

- Lecture title（講演題目）: （in English） Genetics of modern human origins and adaptation
（in Japanese）

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

Genetics of modern human origins and adaptation

Summary

It is only about a decade after the completion of the first human genome. The Human Genome Project (HGP) began officially in October 1990. It costs nearly 3 billion US dollars and took more than ten year to accomplish this seemingly mission impossible – just in time to celebrate the 50th anniversary of James D. Watson and Francis Crick's discovery of double-helical structure of DNA. The official news was released by the six world leaders in April 2003 (U.S., U.K., Japan, France, Germany, and China). The level of accomplishment was compared with those great scientific achievements in human history such as Apollo moon landing, and splitting the atom. Today, the cost of sequencing one human genome can be as low as only $1000 US dollars. At the Center for Genomic Medicine of Kyoto University, I and many scientists are working hard to analyze more than 3000 human genomes with high hopes that we will be able to decipher some of the many mysteries that were written in our own life of books which in fact are nothing more but a long sequence of DNA codes assembled by only 4 letters – A, G, C, and T. In this lecture, I talked about some of my own stories as being a scientist. I started by briefly introducing my country – Taiwan and how the beautiful nature of this island has inspired me to study evolution. Why scientific thinking is intellectually fascinating and has motivated me to become a scientist. I then introduced the current development in studying the origin of modern human and the underlying methods for studying the evolution of modern human genomes and our closely relatives (*i.e.,* Neanderthals and Denisovans). I also shared with students my real-time preliminary discovery at Kyoto University on studying the genetic origins of Japanese people. Finally, I discussed briefly about the importance of understanding evolutionary adaptation and human genetic origins in studying human genomes on which to build the science and medicine of the 21st century. After the lecture, we have a 20-minute discussion on some topics relevant to the talk such as what is species? Is species as a natural unit or a human-made term? Is species a discrete biological unit or there is continuity between species?

- Language used（使用言語）: English (translated into Japanese by Dr. Maiko Narahara)

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- Lecture format（講演形式）:

◆Lecture time（講演時間） 90 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））

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））

assisted by Dr. Maiko Narahara who provided Japanese explanation

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

Dr. Maiko Narahara

◆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。）:

Dr. Maiko Narahara mentioned that she enjoyed the trip and the lecture is helpful for those students who are interested in studying science.