（For JSPS Fellow）

Form B-5

Date（日付）
　14/1/2014　　　（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）：　CHA PEI CHIENG　　　　　　　　　　　（ID No.　P12422　）

- Participating school（学校名）：　福井県立　高志高等学校(Fukui Prefectural Koshi High School)

　- Date （実施日時）:　　　　2014 年 1 月 11 日（土）　　　　　　　（Date/Month/Year:日/月/年）

- Lecture title（講演題目）：（in English）　**Genetics, Epigenetics, and my works in identifying genes that influence general intelligence *(g)* through epigenetic mechanisms**

　　　　　　　（in Japanese）　遺伝学、エピジェネティクス、および認知機能におけるエピジェネティクスの役割

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

My lecture was divided into three parts. Firstly, I introduced about myself and talked about my country Malaysia because some of the students who attended the lecture will be having a school trip to Malaysia in March. In the second part of the lecture, I talked about fundamental knowledge on genetics and introduced to the students several advances in genetic technologies that revolutionized genetic studies. In the third part I explained our strategies to identify genes that are influencing general intelligence. Below is a brief summary of my lecture.

Genetic information stored in DNA determines how we look like, how we think, and whether or not we will develop a disease. However, now we know that even identical twins who shared 100% similar genome differ in many ways, like hair color, susceptibility to diseases, height and general intelligence. These differences could be due to epigenetic changes (heritable changes in gene activity that are *not* caused by changes in the DNA sequence). In my current study, we trained genetically identical mice to explore mazes and we identified mice that performed very well and mice that did very badly. We then examined and identified genes that expressed differentially in brains of those 2 groups of mice. Since all mice are genetically identical, differences in gene expression in mice most likely is due to epigenetic modifications, such as DNA methylation. Now we are trying to find out the differences in pattern of DNA methylation among the two groups of mice by using next generation sequencing technology and to determine how those differences could lead to variation in gene expression and subsequently general intelligence of mice.

- Language used（使用言語）:　　English

- Lecture format（講演形式）:
　◆Lecture time（講演時間）　　60 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））
　　　Powerpoint and 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 provided simple Japanese explanation whenever necessary with assistance from the Biological teacher of the high school. During the break between the presentation and Q&A session, the teacher has also kindly helped students to understand my presentation.
　◆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。）: