

Form B-5

Date (日付)

\_\_\_\_\_ (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): Thomas Michael Conrad (ID No. P11076 )

- Participating school (学校名): Mukogawa Women's University Senior High School

- Date (実施日時): 17/09/2011 (Date/Month/Year: 日/月/年)

- Lecture title (講演題目): (in English) For Science! Opportunities and Explorations

(in Japanese) サイエンスを目指して！進路と挑戦

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

My lecture had three parts.

First, I described science as a career, beginning with the activities of scientists. Activities of scientists can be divided into two categories: the discovery of new knowledge and the communication of knowledge. Scientists discover new knowledge by applying the scientific method. Activities to form a hypothesis include staying current by learning about other's research through reading journal articles and attending scientific presentations, and combining others ideas with your own ideas and observations to form a new idea. Second, the hypothesis is tested through experiments. A lot of planning is needed to determine the correct experiments and controls, and event then progress usually depends on a long trial-and-error process to find an experiment that produces meaningful results. Finally, analysis of results may require extensive data processing and use of statistics before deciding whether or not the data agrees with the hypothesis. I next discussed various careers open to scienists. At the bachelor's degree level, I mentioned research assistant/associate, sales representative, and lab support. At the PhD level, I discussed post-docs, professors, research scientists, as well as mentioning alternative careers such as patent lawyer or writer. Finally, I discussed what is involved in PhD education, and gave advice for college study.

Second, I briefly described by PhD research. I began with an introduction of DNA sequences and mutations, genomes, selection, and exponential growth of bacteria. I then introduced the application of high-throughput sequencing in my research, describing the need for deep coverage. I last described the results of studying individual mutations found by sequencing.

Last, I told the students about the United States in terms of the American Dream, defined as the opportunity to pursue and obtain your own personal dream without facing arbitrary obstacles such as class. This began with the historical importance of immigration in the United States, including the first colonists, German and Irish immigration in the 19th Century,

Chinese and then Japanese immigration in the nineteenth century, African American history and civil rights, and current waves of hispanic immigration. Second, I described the importance of education to the American Dream. I show the status and rankings of US education. I discussed the importance of innovation and entrepreneurialism.

After each of the three parts, Hisaji Maki assisted me in a question and answer session lasting about twenty minutes each.

- 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) 50 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 presentation (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))

Hisaji Maki helped interpreted for question and answer sessions

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

Hisaji Maki, Professor

◆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。): 聴衆は中学3年から高校3年までの SSH コースの女子生徒、150人程度であったが、居眠りしたりする生徒は一人もいず、たいへん熱心にかつ興味を持って講演を聴いていた生徒が大部分であった。同行者としてはたいへん驚くと同時に嬉しく思った。受入校の校風や指導のおかげも少なくないと思うが、コンラッド博士の講演はたいへん良く準備されていて、たとえ英語を理解できなくとも話についていけるような工夫がされていた点も大きいと思う。同行者が最初に10分間ほど時間をもらって、講演で必要な知識やイントロダクションを行ったことも役だったかも知れない。質問も活発であったので、受入校の先生方も喜んでいらした。