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（For JSPS Fellow）

Form B-5

Date（日付）
13/12/2013 （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）: Elina Staaf （ID No. PE13543 ）

- Participating school（学校名）: Chiba Municipal High School, Chiba

- Date （実施日時）: 12/12/2013 （Date/Month/Year:日/月/年）

- Lecture title（講演題目）: （in English） Cellular effects of mixed beams of radiation

（in Japanese） 混合放射線場の細胞への影響

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

The presentation had two parts. In the first part I talked about Sweden and my career in Science, how I became a researcher. I also gave the students some good advice for their career, if they want to go into research. Then we had a break, for questions, and to stretch our legs. In the scientific part I presented results from my previous PhD project "Cellular effects of mixed beams of radiation". I introduced the students to different types of ionizing radiation (X-rays and alpha particles), the concept of "linear energy transfer" and "relative biological effectiveness". Next, I presented how the DNA is packaged in the cell nucleus and how ionizing radiation can induce DNA damage. Different ways for the cell to repair DNA damage, and what can happen if DNA breaks are not properly repaired were presented. After that I introduced the concept of "mixed beams" where you have more than one type of radiation at the same time (which occurs, for example in space). Here it was also time for the concepts of additivity and Synergism, if radiation adds up as expected, or interacts to produce more damage than we expect. I showed them pictures of my exposure facility for alpha particles and X-rays, and talked about the different methods I applied to analyze DNA damage after exposure to only X-rays, only alpha particles or both together. The presentation of the actual results was rather short and I only showed the most interesting images. After a short "summary" slide I finished the presentation by re-iterating the career advice.

The main challenge was to keep the students interested and alert, and get them brave enough to start asking questions. The short break was very good for both, because some students came up to me and started to ask things. We also did a little stretching exercise together, where you stand up and then touch your head, shoulders, knee and toe in sequence, faster and faster. It was fun, and the students were more alert after the short exercise. Some students stayed after the presentations to ask more questions, which was very nice.

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- Language used（使用言語）: English, wirh Japanese translation for the questions

- Lecture format（講演形式）: Powerpoint

◆Lecture time（講演時間） 90 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））

used projector, answered questions, talked privately wirh some students after the lecture

◆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））

assistance by accompanied person, who also translated the scientific slides

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

Ryuichi Okayasu, Ph.D.

◆Other note worthy information（その他特筆すべき事項）:

The high school could print only in black and white, and the handouts I could have adapted better to this

- 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。）:

この様な program は国際化の推進に良いと思いました。たとえば放医研には JSPS 支援の他にもしばしば international visitor があるので、そのような人々にも機会を与えられたらと思いました。
実際の Elina さんの講演は、生徒たちとの交流が始まると、彼らも親しみを覚え、とてもいい交流ができ良かったと思います。一部の生徒はとても英語ができました。

日本の国際化が遅れている中で、大いにこのような、program を推進していただきたいと感じています。

放医研・国際オープンラボラトリー サイエンティフィックセクレタリー (コロラド州立大学客員教授)
岡安隆一