

(For JSPS Fellow)

Form B-5

Date (日付)

29/07/2014 (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): Sanna Nystroem (ID No. P 19831228)

- Participating school (学校名): Okinawa Prefectural Kyuyo Senior High School

- Date (実施日時): 25/07/2014 (Date/Month/Year: 日/月/年)

- Lecture title (講演題目): (in English) The Microbiota and *Helicobacter pylori*

(in Japanese)

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

About myself and Sweden:

I started by introducing myself and talked about what I'm doing in Japan and for how long I have been here. Then I talked a bit about my home country Sweden, about how is it not as cold as people usually think, that it's famous for for example IKEA, Skype, Zlatan Ibrahimovic, ABBA, aurora borealis and such things. I compared the sizes and populations of Sweden/Stockholm and Japan/Tokyo. Finally I compared the school systems of Sweden and Japan.

My research:

I went on to "my research" by introducing the immune system, the different cell types with their different roles and the difference between the innate and the adaptive immunity. I also used an animation to explain the basics about how an immune response is initiated and bacteria is cleared,

Next I introduced the different pathogens (bacteria, virus, parasite and fungi) by giving examples of diseases you can get from each group and showing their different sizes on a scale. Then I focused on bacteria by talking about their different shapes and their history (how they were discovered and how it was understood that they can cause disease). I ended the bacteria part by saying that now the research focus is much on the "friendly bacteria" - the microbiota.

I introduced the concept of microbiota and talked about how much of these bacteria we have in our bodies (1.5-2 kilos, 10 times more bacteria than human cells) and what the microbiota is important for (energy balance, digestion, vitamin production, protection against pathogenic bacteria and regulation of the immune system). I used a picture to explain how the microbiota protects against pathogenic bacteria and what happens if the microbiota is lacking or disturbed. I talked about the many ways the microbiota can be altered (diet, lifestyle, hygiene and antibiotics)

and the types of problems and diseases you can get if the microbiota is disturbed. I put extra focus on how the microbiota may be one of the causes of the increasing levels of allergies, asthma and obesity.

I went on to what you can do if you have gotten a disturbed "bad" microbiota (new diet, probiotics, prebiotics and fecal transfer). I gave an example of effective fecal transfer where mice get slim if they get microbiota from a slim person and fat if they get the microbiota from an obese person and how this work also with people and can be a treatment for many diseases.

Finally I introduced my second research topic *Helicobacter pylori*, the history of this bacteria and how it can cause gastric ulcers and gastric cancer but also can protect from allergies and asthma. I tied it all together by explaining how the microbiota can be one of the reasons why *Helicobacter pylori* affect different individual differently and how this is what I aim to study in Tokyo.

I finished with some last words about it's fun to be in the research field.

- 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)(+60 min talking to the students afterwards)

◆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

◆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))

Got help to translate some of the words in the PowerPoint + sending in vocabulary list

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

None

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

I discussed the content and presentation a lot with the English and biology teachers at the school

- 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。):