

(For JSPS Fellow)

Form B-2
(FY2018)

Date (日付)

26/7/2018

(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): Kai Nitzsche (ID No. P17755)
- Participating school (学校名): Koshi High School
- Date (実施日時): 25/7/2018 (Date/Month/Year: 日/月/年)
- Lecture title (講演題目): Non-traditional isotopes in stream ecology
- Name and title of your accompanying person (講義補助者 職・氏名)
Dr. Yoshizaku Kato
- Lecture format (講演形式):
- ◆Lecture time (講演時間) 110 min (分), Q&A time (質疑応答時間) 15 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, showed specimen (rocks, stream organisms, plant litter, periphyton),
asked the students questions in between

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

I started the lecture by introducing myself. I told the students about my hometown and my home country (Germany). I also showed some pictures and provided some information Germany. I asked the students what comes into their heads when they think about Germany. Then, I talked about my scientific career, i.e. why I studied Geosciences, my fields of specialization and why I decided to become a scientist. Here, I also highlighted three important points for a successful scientific career: 1) think interdisciplinary, 2) go abroad and 3) use English.

I then held my lecture. As my research is kinda interdisciplinary, I firstly asked the students for their main interests (e.g. chemistry, physics) because I tried to make the lecture interesting to everybody. Next, I raised up my main research question, i.e. how can we find out if certain metals are transferred from the rock to aquatic insects? I told the students how magnesium (Mg) and calcium (Ca) cycle through the environment (rock-soil-plant-water interactions) and the food chain and how these metals might finally end up in aquatic organisms. I brought some rock specimen and I explained which minerals contain Mg and Ca. Then, I told the students about stream ecosystems and feeding habitats of stream biota. I brought samples of two important food sources, plant litter and periphyton. Finally, I introduced the tool that I am using, stable isotopes. I told them what isotopes are and which notation is used. Finally, I explained how I use isotopes to answer

the research question I stated at the beginning. After the lecture, I showed some aquatic organisms, which I brought with me, to the students and I told them some specific characteristics of these specimen and their names.

- Overall advice or comments to future participants in the program (今後の講師へのアドバイス):

Show many pictures and try to avoid too difficult English expressions. I feel like students did not read my points, they rather listened to my words. Talk slowly and clear. Use Japanese keywords and/or let your accompanying person (definitely bring one!) explain certain things in Japanese. Ask questions in between, though be prepared to not get an answer (students are very shy). The challenge is to break the ice, try to be a bit funny or so. Also do an experiment if possible or bring some specimen.

- Other noteworthy information (その他特筆すべき事項):

Prior to the lecture, the teacher distributed handouts of the slides to the students. I found this quite helpful. Definitely participate in this program, it is a great experience.

- Impressions and comments from the accompanying person (講義補助者の方から、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。)

Since the opportunity to dialogue with senior high school students is rare, It was great experience for me. I felt that showing some specimen and/or brief experiments is quite effective to motivate the students. For effective preparation, the lecturer should be informed about the exact number of audience.