

(For JSPS Fellow)

Form B-5

Date (日付) 19/06/2017
(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): Andreas Dechant (ID No. P15324)
- Participating school (学校名): Fujishima High School
- Date (実施日時): 08/06/2017 (Date/Month/Year: 日/月/年)
- Lecture title (講演題目): Statistical Physics – All about Probability
- Name and title of your company (同行者 職・氏名)
N/A
- Lecture format (講演形式):
 ◆Lecture time (講演時間) 50 min (分), Q&A time (質疑応答時間) 10 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))
Presentation on projector, simple tabletop experiment

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

After introducing myself to the students, I started my presentation with my own motivation to become a scientist. I explained to them that the general goal of physics is to understand the reality around us. In theoretical physics, this is done by constructing simple models of a complicated reality and then trying to understand these models.

I then told to the students what statistical physics is about. For this purpose, I used a simple tabletop experiment showing how two initially separated amounts of water (one colored blue with ink) start mixing on their own. When I asked them why this happens, I was surprised that one of the students already knew the answer. I explained to them how we can understand this effect by using a very simple thought experiment and basic mathematics: The fact that the water mixes, and that we can never observe the opposite behavior (un-mixing), is simply because the state where the ink is spread evenly is much more probable than finding all the ink on one side. Determining the probability with which things happen is at the heart of statistical physics.

In the last part of the talk, I told the students about my home country, Germany. I gave them some basic facts about Germany and compared them to Japan. I then asked the students what they think is typical for Germany and told them some things that are typical but not so well known. I also told them a bit about my hometown, Augsburg.

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

Don't try to put too much content into your lecture. Speak slowly and clearly.

Ask the students (and also their teachers) questions. Japanese students can be very hesitant to talk to you in English, but they can actually do it quite well.

Try to do some simple experiment. It really captures the students' attention and they may be much more willing to ask questions themselves.

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

- Impressions and opinions from a company (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。)

N/A