

Form B-2
(FY2022)
Must be typed

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): _____ Nora Carlson _____ (ID No PE21015 _____)

- Name and title of the lecture assistant (講義補助者の職・氏名)

- Participating school (学校名): _____ Shiga Prefectural Hikone Higashi High School _____

- Date (実施日時): _____ 11/07/2022 _____ (Date/Month/Year: 日/月/年)

- Lecture title (講義題目):

_____ How I became a scientist & what I study _____

- Lecture format (講義形式):

◆ Onsite ・ Online (Please choose one.) (対面 ・ オンライン (どちらか選択ください。)

◆ Lecture time (講義時間) 45 min (分), Q&A time (質疑応答時間) 10 min (分)

◆ Lecture style (ex.: used projector, conducted experiments)

(講義方法 (例: プロジェクター使用による講義、実験・実習の有無など))

Use projector, learning activity with students _____

- Lecture summary (講義概要): Please summarize your lecture within 200-500 words.

I am a scientist who studies animal behaviour. I am from a small town in the US called Bainbridge Island in Washington state. One of the things that many people don't really understand about the US is how big it is, spatially, geographically, climactically. I didn't start out as a scientist, my first degree was language (Japanese & Chinese), and it wasn't until after I spent a year teaching English in Japan, I decided to go back to school for science. From the beginning I was interested in studying how animals communicate, and during my undergraduate and PhD I studied how birds communicate about danger. I then studied sociable weavers in South Africa, and starlings in Germany. Now I study how birds communicate with other species about predators here in Japan. To understand what I study it is important to know that birds communicate with sound in many different ways (e.g., syrinx, percussion, feathers, beaks, and air sacks). They also communicate for many reasons (e.g., territory, breeding, navigation, communication, coordination, predator avoidance, and predator harassment). I study predator harassment also called mobbing. This is where a prey species will see a predator, call and begin to harass it, which also calls together many other species. These groups are interesting as they often include many different species and the calls they make contain information about

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predators. Individuals share this information and I have done research in the past to try and understand these mobbing groups better. I found that only some species in these groups are important, meeting three specific criteria (producing predator threat information, being reliable in how they communicate, and being listened to by multiple other species). I also found that this information is used differently depending on where it comes from. Birds that eavesdrop will put predator threat information in their calls only when it comes from a reliable source (i.e., hear a predator's call), but not when it comes from an unreliable source (i.e., another species' calls) even though they understand this information. What I am studying now is how all of the species in the group use and respond to this information. I am using playbacks of mobbing calls to study how different species respond to the mobbing calls of one another. I use this information to create networks to see how species interact. I have found that in these groups, relationships between species are not equal. Some species (e.g., coal tits) will help many other species (e.g., varied tits), but these species may not help them in return. Some species (e.g., long-tailed tits) get help from all the other species but help none in return. Additionally, I found that different species are attracted to each playback, suggesting that some eavesdropping species like the calls of one species over another. Also, when species show up at a mobbing event, they may assist some species during mobbing (e.g., coal tits), while they simply observe other species (e.g., Japanese tits).

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

I did an activity with the group to help them better understand more about sound and how we study it. IN the first part they have to match different sounds to the animals that make them. This introduces them to the many very different sounds that animals can make. The second part of the activity teaches them how we study sound using graphs of sound called spectrograms. Like the first part they need to match the sounds, but this time they have to match the sounds to their spectrograms. This teaches them how to read a spectrogram the way bioacousticians like me do.

- Impressions and comments from the lecture assistant (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。):

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Questionnaire

Please fill out the following questions so that we can take advantage of your impressions in enhancing the JSPS Science Dialogue Program.

- Fellow's name (講師氏名): Nora Carlson (ID No. PE21015)
- Participating school (学校名): Shiga Prefectural Hikone Higashi High School
- Date (実施日時): 11/07/2022 (Date/Month/Year: 日/月/年)

1. What motivated you to participate in the "JSPS Science Dialogue" program?

I enjoy teaching students and showing them how exciting science can be. This was a perfect opportunity to do just that.

2. What did you do to make your lecture easily understandable for Japanese students?

I used many illustrations of exactly what I was talking about, used simple language, included words alongside what I was discussing, and tried to include Japanese where I could

3. If you have any advice how to facilitate communication with Japanese students, please describe it.

I would advise talking slowly and clearly, using my body language to emphasise what you are talking about, add descriptions and examples of what you are talking about, use images to explain what you are talking about, and try to find multiple ways students of all levels of English can interact with what you are talking about (e.g., activities they can do without having to use a lot of English, lots of pictures, simple text on slides to help understand the main points, etc.).

4. What were your impressions of participating in this program?

I enjoyed participating and would love to do it again. I think it would be especially helpful in future to have a bit more guidance for the introduction and information about your country bit, as I have never really talked about that type of thing.

5. In what ways do you think the students benefited from the program?

I think that they got an idea of what doing science may be like, and what some of the options there are for them to do science. Also it let them have fun learning about a new topic and hopefully got them excited about continuing to learn about science.

6. Was it meaningful in terms of your fellowship activities? If yes, please describe in details.

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I think it was in that outreach to students and the community is very important. My research comes from public funds and I think the public should understand and get to engage with what science is funding. I think that every time scientists get to connect with the public, they get more excited about what scientists do, and it becomes more a real thing than something from a science fiction movie. This makes it more real, and hopefully also makes them more likely to believe that science works – something the pandemic has shown us is important when coming up with solutions for problems that affect everyone like illness and climate change.

7. Would you like to give another lecture again if you are requested? (If yes, please let us know when it would be convenient for you.)

I would love to give another lecture. I am done with my field work until the end of this fellowship, and so any time is feasible until October.

We appreciate your kind cooperation, and wish you every success in your research.