

Research Activity Report
Supported by “Leading Graduate Program in Primatology and Wildlife Science”

2017. 04, 12

Affiliation/Position	Primate Research Institute/D1
Name	Raquel Costa

1. Country/location of visit

Kyoto (Kyoto City Zoo); Otsu (Center for Ecological Research); Inuyama (Primate Research Institute and Japan Monkey Centre)

2. Research project

Interdepartmental Exchange 2017

3. Date (departing from/returning to Japan)

2017. 04. 04 – 2017. 04. 09 (4 days)

4. Main host researcher and affiliation

Department of Biological Sciences, Kyoto University

5. Progress and results of your research/activity

Day 1 (04/04/2017)

We began the Interdepartmental Exchange experience with Welcome Lecture, including several oral presentations of Kyoto University (KU) students on their current projects. After the lectures, students and Professors came together in a Welcome Party. We took this opportunity to meet and interact with new students from other centres in KU.

Day 2 and 3 (05-06/04/2017)

For health reasons, I was not able to participate in the second and third day of the Interdepartmental Exchange experience.

Day 4 (08/04/2017)

We started the day with a visit to Kyoto City Zoo. We were guided through the zoo's public space and backstage as well. We were presented with the unique opportunity to visit two rooms with two different purposes: one for dissection of medium and small animals and another for the care and treatment of the resident animals. We also visited the museum with skeletons and preserved animals and could hear from the keepers themselves about the animals' husbandry and zoo management.



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Figure 1 and 2. Animals in public exhibition in Kyoto City Zoo: elephants playing (left) and adult giraffe (right).



Figure 3 and 4. Gorilla paintings in great apes visitor house (left) and zoo staff explaining the veterinary routines and conservation programs in the Zoo (right).

Later after lunch, we set out to the Centre for Ecology Research. This centre is used not only by KU students and researchers but it is open to any scientist studying Ecology related topics, such as aquatic and tropical ecology, plant-animal interaction and molecular analysis. We were welcomed by the Centre Director, Dr. Nakano, and then attended the presentations of three young researchers who presented the general view of their research topic. Later on, we could visit several laboratories and learned possible research questions and methods for each facility: Stable isotope analysis system, CER forest, Symbiotron and a laboratory relating to the cultivated field for the study of *Arabidopsis*.



Figure 5. Students being conducted throughout the CER laboratories.



Figure 6. Symbiotron explanation.

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Figure 7. Ongoing experiment on spider mites, Symbiotron laboratory.

Day 4 (09/04/2017)

In the fourth day, we visited the Primate Research Institute (PRI) in the morning and the Japan Monkey Centre (JMC) in the afternoon. In PRI, we were welcomed by Prof. Yumoto, who kindly presented the history of Primatology in Japan, telling the story of Dr. Kinji Imanishi and his students in 1940s. Unlike other industrialized countries, Japan has a combination of two vital factors for the study of primates: an important part of its territory is evergreen and its natural fauna includes an endemic primate species, the Japanese monkey (*Macaca fuscata*). In Koshima Island, Dr. Imanishi observed evidence of pre-culture in these monkeys, starting a new era in Primates Research. Back in Inuyama, due to the effort and dedication of Dr. Imanishi and colleagues, the Primate Research Institute was established in 1967. This institute is until our days, one of the most important centres for Primatological research in the world, covering several areas of the field, such as biology, behaviour, cognitive and socio-ecological features of primates, aiming also to uncover the human mind and its evolution.

After the presentation, we were divided in groups and guided to several sections of PRI. First, we observed two resident groups of Japanese macaques and learned the basic on their daily routine. We observed two groups, separated physically to prevent genetic hybridization, since both groups have different origins. Following that we visited the Museum, where we had the opportunity to observe several replicas of hominids species, nonhuman primate species, chimpanzees' existing tools (sticks for algae scooping from pond) and a touch screen with cognitive tests similar to those presented to chimpanzees. Next, we visited the , where we observed Akira's group performing cognitive tests in touch screens, namely, short-term memory tasks, such as to remember the sequential order of numbers short-term memory tasks, consisting in memorizing the sequential order of numbers.

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Figure 8. PRI resident chimpanzee in the sky lab.

We then headed to JMC, First we were given a talk on JMC history that correlates with the history of Primatology in Japan. JMC was established in October, 17th, 1956 by the Dr. Imanishi. JMC has proved to be more than a zoo. Since the opening, JMC has been a popular centre for public education and awareness, promoting research, conservation and welfare. In April 2014, JMC become ‘Public Interest Incorporated Foundation’, directed by Professor Matsuzawa. JMC is home to more than 1000 primates of 66 different species, from lemurs to great apes. It incorporates also a museum directed by Prof. Yamagiwa. The museum has a database (Captive Primate Collection, CAPriCo) of more than 6,300 specimens’ remains (skeletal, formalin-preserved brains, organs and parasites). We were allowed to visit this museum, in addition to visit the veterinary rooms to get a deeper experience of the Park.



Figure 9 and 10. Squirrel monkey (left) and Monkey Valley surrounded by Sakura (right).



Figure 11 and 12. Siamangs family (left) and the Captive Primate Collection (right).

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Figure 13 and 14. Fetus and baby macaque preserved in formaldehyde.

Resume

This course made me understand the general University organization and grant me some clues on my role as a student. I was surprised with the variety of fields and topics that are currently covered by the research centres and I was exposed to the several opportunities of research. It became very clear the intention of promoting pioneer research and international cooperative work. As a new doctoral student, in the very beginning of my research (and career), meeting different scientists with different research topics and perspectives, is both inspirational and encouraging. In particular, I made some contacts and got to know the facilities that I may get the chance to work in the future. This is for me very important as I wish to develop a multidisciplinary research to get a broader knowledge of my focus species and therefore, collaborative work with scientist of different fields is essential. In my opinion, the course was very well prepared and organized. We were always on schedule and organizers were always very attentive to students' needs and difficulties.

6. Others

Acknowledgments

I want to thank the organizing committee, Professors, zoos' staff and senior researchers for the wonderful experience. Specially, I am very grateful to Akiyama-san and Sakai-san, who supported and helped me when I felt sick. Their support and kindness was very important in that difficult moment. I also want to thank PWS program for logistical and financial support.