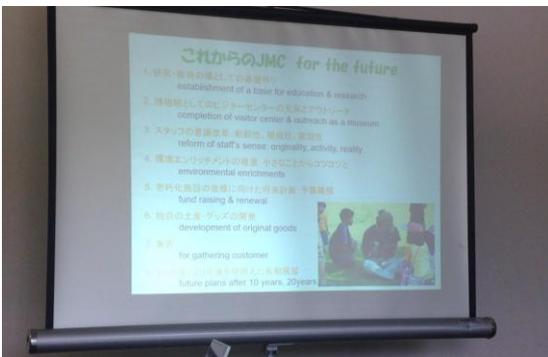


**Research Activity Report**  
Supported by “Leading Graduate Program in Primatology and Wildlife Science”

2017. 07, 11	
<b>Affiliation/Positio</b>	Wildlife Research Center/D1
<b>Name</b>	Mi Yeon Kim

<b>1. Country/location of visit</b>
PWS Zoo/Museum Course at JMC
<b>2. Research project</b>
Understand the importance of Zoo/Museum and experience working as a zoo keeper at Japan Monkey Center.
<b>3. Date (departing from/returning to Japan)</b>
2017. 07. 08 – 2017. 07. 10
<b>4. Main host researcher and affiliation</b>
Prof. Idani Genichi, Wildlife Research Center of Kyoto University & Japan Monkey Center
<b>5. Progress and results of your research/activity</b> (You can attach extra pages if needed)
Please insert one or more pictures (to be publicly released). Below each picture, please provide a brief description.
<p>I attended Zoo/Museum Course at Japan Monkey Center (JMC) was supported by PWS. Here, students from both Primate Research Institute and Wildlife Research Center came together to learn about the importance and the role of Zoo/Museum in scientific community and to public. We also experienced what it is like to be a zoo keeper in Japan Monkey Center.</p> <p><b>[July 08, 2017]</b></p> <p><b>Introduction of Japanese Primatology and Japan Monkey Center:</b> Professor Idani gave a lecture on the history of Japanese Primatology and Japan Monkey Center (JMC). Here, we were learned of the Japanese primatology pioneers who played critical role in building primatology. The lecture also focused on the history of JMC and how it came to be what it is now. One of the points that Prof. Idani made were on the current problems that is the center is facing. As a zoo/museum, he pinpointed certain issues in JMC that could be improved. The African and Asia monkey apartments were too small and over-crowded, reproductive control is impossible, and cages were over-aged. He also mentioned the problem of too many zoos and aquariums around Japan as one of modern problems faced by many zoo around Japan. There are issues in captive animals but the future plan of JMC is set to make only improvements. One of perks of this course is the fact that international students were paired with Japanese students who could provide immediate translation/interpretation. Power points were in English and Prof. Idani also spoke in English, however when he had to explain in Japanese my partner was able to translate it for me. This made the class engaging and educational.</p>
<div style="display: flex; justify-content: space-around;">   </div>
<p><b>Tour of Zoo:</b> As a group, we toured around JMC to observe different primates that were showcased. As an international student, and someone who participated in the Inter Lab, I was able to get a better understanding of the exhibition of the help of fellow partner, Japanese students and Curator Ohbuchi. I particularly had many questions about the environment enrichment. For example, as monkey apartments in JMC is over-crowded I wondered the possibility of sending some individuals to open or semi sanctuary. I learned the issue of transferring an animal to another facility is an extremely complicated issue as JMC wants to provide a significantly better environment for the</p>

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sent animal. I was also able to learn about the future plans in JMC to make a semi open exhibition with another species of monkeys and another plan to include horn beetle at the pet zoo.

**Introduction of museum and specimen/anatomy:** Curator Shintaku gave students lecture on the importance and a critical role the museum play in science, education and history. He talked about the basic role of museum in scientific community and elaborated on the type of works that is acquired as a curator. We also learned about the possible use of the collections in science through study of skeleton (ex. Study of primate skull evolution) and also the importance of accurate identification and classification. This is important because one mistake that could have been made in the past is very hard to correct especially with a lost specimen. This lecture was another reminder that the most important details are basic ones and keeping a good track of whereabouts.

After the lecture, we learned how to identify different parts of primate skeleton and arranged them in a correct order. Curator Shintaku first taught us the anatomy of Japanese monkey and as a partner we arranged one set of skeleton ourselves. As we tried to guess about the age, sex, and cause of death from the skeleton we learned about important markers that could be used for individual identification and life history. The hidden third molar, shape/condition of pelvis, and condition of spinal joints indicated a young female primate. The monkey was 8 year old female. Then, as a group we visiting the back yard of JMC looking through all type of collections and all the behind work that goes in maintaining a museum and a center.

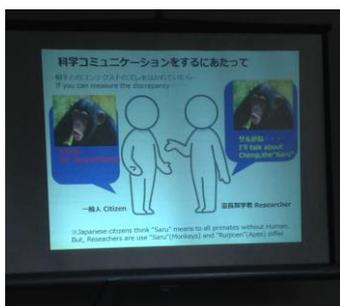


[July 09, 2017]

**Science communication:** Prof. Ohbuchi gave us a lecture on science communication. Communicating science to people outside of scientific community is very important. One of the goal of science communicator is to increase “science literacy” in the public. This means to help people understand science, ability to write and read science and how to use science. However, it does not mean for individuals to gain more and only scientific knowledge but to have science thinking.

There are many roles that science communicator plays in different institutes. The core of different roles in different settings they are transferring scientific information to the public and sometimes give feedbacks to scientist. In doing so it is very important understand the educational and cultural background of the audience. This will help decrease miscommunication and help to transfer correct scientific knowledge to the public.

**Work/Education of Zoo:** Curator Akami gave us a lecture on visitor study in Japan Monkey Center. Studying the behavior patterns of visitors and their demographic can help with maintaining the zoo/museum. Also, through studying the visitors, the effect of zoo can be looked into as well. There were many ways of studying visitors including survey, interview and observation. As a group, we went outside to observe real visitors at the zoo to understand main interest of visitors with specific species of primate. For each group we were able to observe, we collected estimated age & sex, duration of visiting Monkey Valley, and their conservation. We were able to observed one visitor group at monkey valley. It was a family of Father and a baby boy. They stayed at the exhibition for four minutes and they mostly talked about the sign and the quiz, which was translated into their movement, going back and forth between signs.



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**Work experience as a Zoo Keeper: (African Monkey Apartment)** We were introduced to the two zoo keepers, Ms. Tsujiuchi and Mr. Okumura, at the African Monkey Apartment. First we went around with the main keeper learning about every species that were exhibited in this section. I was able to learn a lot about their living conditions and future plans to help the captive individuals. In most species that were being kept had some enrichment plan going on improve living quality. For example, there were couple cages with only one individual of certain species and they were on different type of plans. The mandrill came to stay in this section by himself was a formal alpha who because tired and old (Picture 1). For his safety he was removed from the group and was placed in a cage by himself. However, the JMC was in process of making a male group which to put these individuals together. Angolan colobus monkey was living by himself in the result of gradual loss of his family and because he could not join a group of another species of colobus monkey (Picture 2). In Japan, there are three other angolan colobus monkey in Kumamoto, and JMC was trying to bring them together. Another monkey individual was a male guinea baboon who bit himself so bad giving him open wound (Picture 3). Because he was only one of his kind, the zoo keepers tried to put him into another group. However, the stress of group living with other species he self-mutilated. Therefore, now he was being kept by himself for his safety. Currently, because modern medicine has harsh side-effects on the animal, Chinese herb medicine is being used to help him with stress. Through this run through on each captive individuals I learned all the things that goes into keeping monkeys and the measurements that were being done to help each one of them.

After the introduction, we went inside of a Taraboang monkey’s cage and rebuilt their living habitat (Picture 4 & 5). First we took down tree trunks and re-built the living area with old and new tree trunks. This was to re-arrange them in different patterns to create something new for the individuals. We also placed branches with leaves and planted trees on the ground. The purpose of this was to create a similar living area with their natural mangrove habitat. Before such kind of living area was introduced the group fought with each other a lot, but it decreased after such living habitat to distract individuals from others. The actual zoo work gave me a better understanding and insight into that is actually happening behind the bars. Also, it taught me how different the zoo keeping work is.



Picture 1



Picture 2



Picture 3



Picture 4



Picture 5

[July 10, 2017]

**Work experience with primate enrichments:** Curator Watanuki gave us lecture on enrichment in zoos. He explained the difference between animal welfare and animal rights. Here, we discussed about how they are two different concepts however they work together for animals around the world. He taught us on the 5 freedom theory by Webster (1994), and the different type of enrichment activities for both environment enrichment and behavior enrichments. There are physical, food-based, sensory, social and cognitive enrichment in environmental enrichment. When asked about the most important type of enrichment he said for primates maybe social enrichment is most important. However, it is sometimes difficult to provide that particular enrichment therefore they focus on what they can perform at the time. It was also explained how many of behavior enrichment has both positive and negative side as the un-natural behaviors are induced by humans via rewards. He gave us many examples of enrichment that were used in JMC and this included giving a stick for chimpanzee to use as a tool to eat orange juice.

**Work experience as a Zoo Keeper: (African Monkey Apartment)** On the arrival we were able to watch the main keeper give medicine to a colobus monkey using a piece of bread. It was very difficult to give the medicine because even though the bread was a favored food, due to the medicine it was not favored. The sick individual grabbed the bread with the medicine but with couple really small bites, dropped the bread and did not eat. After we worked on the cage of savanna monkey, even though they are called savanna monkey their living habitat is top of a tree. Therefore, we put the trees together for these individuals to climb and we also made the structure stronger than the day before because of the higher body weight of this particular species.

**Lecture on “Introduction to Museology”:** Cruator Takano gave us lecture on the definition and role of zoo that acts as a museum like JMC. He explained that zoo and museum has different roles. Zoo has the role of conservation,

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education, research and recreation, whereas role of museum are collection, research, exhibition, and education. He also discussed how many zoo around Japan has one and only role, recreation. However, JMC acts as both zoo and museum covering all the listed roles. He went into details of how the center participate in the education especially for the surrounding community. They have classes for each grades and also have educational program for teachers. From his experience sometimes what teachers want to learn or take away is what is in the textbook. However, sometimes what is states in the textbook is scientifically incorrect. They are making effort to help update the information in the textbook to teach the modern science to the community.



**Work with veterinary science:** D.V.M Okabe gave us lecture on anesthesia in primates. He explained the history on the use of anesthesia that in the beginning people around the world used herbal medicine to help with the pain (ex. Coca). As the modern medicine improved, medicines or chemicals used became more dangerous. However, through many years of experience/research people have better understanding of what needs to be used. At JMC, there are diverse species of primates, therefore when you giving anesthesia to each individual the proportion of medicine is made according to body mass, and species. The N<sub>2</sub>O machine is in the veterinarian office, therefore it could be used for smaller primates, but for bigger individuals like gorilla they use darts.

The veterinarian showed us how he used the N<sub>2</sub>O machine with ring-tailed lemur who had neuron damage in his leg. When the individual was brought into the office, O<sub>2</sub> was given and then anesthesia was given. After the individual was sedated the wound on the feet was treated and neurostimulation was given on the leg to help with the muscle growth.

**Introduction of research activities:** Prof. Hayakawa gave us a lecture on the research that is being conducted in JMC. One of the benefit of doing research in JMC is the possibility of integrative behavior study with all the species in the center. Because of this benefit they could conduct studies such as gummivore species and their microbiome. There are many collaborations in the center from looking at digestive enzyme to taste receptors. One another benefit of doing research in JMC was the close distance to PRI. This helps researchers to do laboratory work quickly after behavior assay and sampling. He encouraged us to use this facility and opportunity to study primates in JMC.

## 6. Others

I appreciate PWS and WRC for this opportunity and support to attend the Zoo/Museum course at Japan Monkey Center. I would like to thank all the curators at JMC for helping us during the three days of the course. Importantly, I would like to thank all the lecturers (Prof. Itani, Prof. Ohbuchi, Cr. Shintaku, Cr. Akami, Cr. Watanuki, Cr. Takano, D.V.M. Okabe and Prof. Hayakawa) who came out to give us a better insight into Zoo/Museum and the diversity of work/specialties that are necessary for running a Zoo/Museum. I would like show a special appreciation for the zoo keeper Ms. Tsujiuchi and Mr. Okumura at African Monkey Apartment. Thank you for bearing with us and I hope we

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were helpful. The working experience helped me understand how it takes special heart for the animals and dedication to work as a zoo keeper. Thank you.

I would also like to give special gratitude to Prof. Ohbuchi for taking care of everyone in this course throughout the three days. Last but not least, I would like to thank the class members who translated lectures and questions I had throughout the course. Your translation/interpretation made all the difference in this course.