



International Vet Exchange Program [IVEP]

# Colorado State University



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To Colorado State University, from March 10 to March 18, 2019

## Overview of Activities of Colorado State University

In 2018, five undergraduate students (2nd and 3rd year) were sent to CSU-CVMBS. In CSU Veterinary Teaching Hospital, these students mainly observed small animal hospital and experienced clinical rotation in the specialized discipline. Students also visited the Diagnostic Center and Translational Medicine Institute, and experienced virtual anatomy using virtual reality. In addition, they visited an animal shelter in Denver. Unfortunately, they weren't able to visit a large-scale slaughterhouse due to bad weather. On the last day, a CSU-CVMBS undergraduate student took them to old downtown to spend time with each other. I hope students could realize the difference in veterinary education between Japan and United States through this opportunity and will look for development in them from this experience.

## Student Exchange Program with Colorado State University

Colorado State University (CSU) is a global research university which was established in 1870 as Colorado Agricultural College. Similarly, Hokkaido University, established in 1876 as the Sapporo Agricultural College, resembles closely the chronology of CSU. In addition, Fort Collins where CSU is located is famous for its local craft beer, another common trait with Sapporo city known for its Sapporo beer.

Colorado State University College of Veterinary Medicine & Biomedical Sciences (CSU-CVMBS) is currently ranked in 13th place on the global QS ranking of veterinary medicine

programs and is also ranked as one of the top 3 veterinary schools in the United States along with UC Davis and Cornell University. Furthermore, basic science research is also a strong point of CSU-CVMBS. Notable achievement was established especially in the fields of radiation biology/radiation therapy, environmental toxicology and infectious diseases. An MOU was signed between CSU and Hokkaido University in March 2017 as a beginning of collaborative effort between the two universities. Since the kick off symposium in July 2017 held in Sapporo, faculty and students have begun fruitful interaction.

In this program, five to six selected 2nd or 3rd year undergraduate students are sent to CSU-CVMBS for about one week every year. Students will have the opportunity to

visit the CSU veterinary teaching hospital, diagnostic center and animal shelter and have contact with CSU veterinary students. Through this, students can understand the difference in veterinary education between Japan and United States. Finally, the aim of this program is to foster our students into becoming highly competent human resources, capable of joining global advanced veterinary care in consideration world standards in the future.

This program is supported by the Gen Kato Fund established by Dr. Gen Kato, Hokudai University graduate in 1956, who is the director of Daktari Animal Hospital Tokyo Medical Center. He eagerly supports young veterinary students to bud as veterinarians who can assume the pillars of the future in veterinary medicine of Japan.



# To Colorado State University ①

## Nozomi SHIOHARA (3<sup>rd</sup> year)

### Day 1 3/11

We visited the Veterinary Teaching Hospital (MedicalCenter) of CSU on the morning of first day. CSU animal hospitals are equipped with the latest facilities such as Cancer Centers, Diagnostic Centers, and Research Centers called TMI (Translational Medicine Institute) on a large site centering on a medical center which is a teaching hospital. TMI has opened just months ago, and there are a lot of up-to-date research facilities. The Medical Center was divided into many departments such as Surgery, Inter medicine, Oncology, Dental Oral Surgery, Anesthesiology, Ophthalmology etc.



And there are many staffs such as doctors, VTs, students in each department. I got the impression that Medical Center is highly specialized. Not only doctors but also VTs are belonging to a department for many years, so VTs are highly specialized like doctors. In addition to the large size of hospital, its teams were specialized higher and have larger number of staffs than Japanese hospital. Also, I was really surprised that many large facilities are established by donation. In the afternoon, we visited Critical Care Unit (CCU) in the Medical Center. There are emergency room and ICU and CCU treats many patients around the clock, mainly for critically ill patients. Facilities were prepared to respond promptly to severe patients because there are many examination tables and operating tables, dialysis units, respirator etc. We could observe some cases on this day.

### Day 2 3/12

On second day, we visited Internal medicine in the Medical Center. We followed CSU students, and I could actually see how CSU students are doing in the hospital. The first case was a cat with hyperthyroidism. Questionnaires and basic examinations (inspection, palpation, auscultation, etc.) are conducted by students. The results were shared by meeting with the doctor in charge, and the doctor provided additional information and advice. After that, the doctor explained the symptoms and treatment to the owner. The patient was kept and a student was performing examinations such as blood collection while cooperating with VTs and the



doctor in the treatment room. Before the test results came out, the second case (a cat with kidney disease) was interviewed and basic tests were conducted. It was impressive that students were active in all cases. There was a clinical conference from the evening. The students reported details about the case of the first visit that they were in charge of the day and shared it with other students and veterinarians.

### Day 3 3/13

Because the weather was bad due to Blizzard on this day, we changed the original schedule and experienced the VR material of anatomy in the hotel room. Thanks to VR, it was possible to observe muscles, nerves, blood vessels, bones, etc. as real samples without using actual samples. After that, we visited the CSU's veterinary anatomy facility. The facilities such as the specimen room and the dissection room were overwhelmingly larger than Japan, and we could observe the latest facilities.

### Day 4 3/14

On the fourth day, we visited the surgery in the medical center. As in internal medicine, we followed the CSU students. Basically the same as in internal medicine, students conducted interviews and basic examinations, and the doctor explained to the owner after the meeting with students. It was impressive that the students were actively working in surgery as well.

### Day 5 3/15

On the fifth day, we moved to Denver and visited the animal shelter "Dumb Friends League (DFL)." All the facilities such as rooms for receiving animals, cage rooms, examination rooms, treatment rooms and operating rooms were fully equipped. Usually, 3 to 4 veterinarians work for DFL, and they have been treating or operating animals with abnormalities. After that, I visited Solutions Veterinary Hospital, a clinic of DFL. Low-income owners can also treat pets, as this hospital costs only about one-third the cost of a regular hospital due to donations from individuals and organizations. There are two cars for cats and dogs, and they go to places where low-income people live on holidays, and are treating many cats and dogs. I thought it was a great facility with an equal animal well fair.

Through this CSU dispatch program, although it was a short period of one week, I was able to learn many things such as the developed specialist doctoral system in the United States, the difference in curriculum with Japan, animal welfare, the importance of English skills, etc. . I thought that I would like to encourage further study by making the most of this valuable experience in the future. Finally, I would like to thank Mr. Gen Kato and Gen Kato Fund for giving me this kind of dispatch program opportunity, and the leading teachers who helped for a week, and all the people who took care of me in Colorado. Thank you very much



# To Colorado State University ②

## Chisaki TAKEDA (3<sup>rd</sup> year)

I applied for this program because I wanted to know the differences between the veterinary medicine of the USA and that of Japan.

The members who visited Colorado State University (CSU) are three professors and three second-year students, two third-year students of Hokkaido University. We planned to visit CSU Veterinary Teaching Hospital (VTH) and animal shelters, a meat packing company. But the meat packing company tour was cancelled because of the blizzard.

First day, we arrived at Denver Airport, then, we went to Fort Collins which is home to CSU by bus. The Rocky Mountains are located in Colorado state and there is Fort Collins on the east of Rocky Mountains. The state is full of nature. We stop by the bottom of the Rocky Mountains on the way to Fort Collins. We can see the beautiful scenery.

Second day, we visited VTH. In the morning, Dr. Hackett explained the facility and we looked around it. Many people welcomed us. I was surprised because it was very big compared to the animal hospital of Hokkaido University. In the afternoon, we visited Critical Care and Urgent Care department. The CSU fourth-year students took part in the hospital work. They asked the owners about their pets, then did the tests and treated them. I felt the CSU students were more active than Japanese students.

Third day, we visited Internal Medicine department. We, Hokkaido University students, saw the medical record in advance. We were divided into four groups and worked with a CSU student at VTH. Dr. Fukushima, a resident in CSU VTH, explained the diseases to us and helped us a lot. In the evening, we had dinner with CSU students.

Fourth day, in the morning, we experienced the VR of Anatomy in the hotel room then visited the CSU Anatomy facility. On that day, the blizzard struck Colorado and we couldn't go to the animal shelter and the meat packing company.

Fifth day, in the morning, we visited surgery department. The head explained surgery education and training in CSU and Dr. Tokunaga, a resident in CSU, translated his explanation. After that, we were divided into two groups and followed a CSU student. In the afternoon, we visited Clinical pathology and Radiology department.

Sixth day, we went to the animal shelter, Dumb Friends League, in Denver. It was a very big and clean facility. It also has the animal posts, the buses for doctor's visit and their clinic. The animals can have treatment less expensively than usual there. I heard that donations helped the animal shelter managing its activity. I think the USA people are more interested in animal welfare than Japanese. In the afternoon, we had free time in downtown Denver. We had lunch and bought souvenirs, walked around, took pictures, and so on.

Last day, we spend time with a CSU student. We went to downtown Colorado and she introduced the town to us. It was the day before St. Patrick's Day so there was a festival. Many people wore something green. We enjoyed it.

In this program, I had many good experiences. Actually, I haven't decided my future profession yet, but I think this experience will help me think of the future. I want to thank many people helping us. And I do thank Mr. Gen Kato for providing this opportunity.



CSU VTH



CSU students



# To Colorado State University ③

## Mari IKEHATA (2<sup>nd</sup> year)

I participated in the International Vet Exchange Program to the Colorado State University, where I visited various CSU's facilities, had a VR experience about anatomy and visited the animal shelter and so on. It was a short time of one week, but I had a valuable experience.

On the first day of the program, I visited several CSU's facilities and the Critical Care/ Urgent and Emergency Care at the Veterinary Teaching Hospital. The Translational Medicine Institute was particularly impressive among several facilities, and I knew it was a new facility just completed two months ago to help human and animal health work together. I saw the room which had many operating tables for education. I was also surprised the situation that teachers in the operating room could answer questions from students



the state of being explained at the VTH

watching the situation on a screen in a lecture room. I realized that the student education at the CSU was very advanced. At the VTH I was inspired by my first visit to an animal hospital overseas, but in addition to the lack of knowledge about cases, technical terms were spoken in English, and it was difficult for me to keep up with the conversation. However, I think it was a valuable experience to improve my motivation to study in the future.

On the second day of the program, I visited the Internal Medicine at the VTH. I saw the process from interview to examination; students in the fourth grade asked owners about pets' medical history on their own, then discussed their disease names and treatment policies with the residents, told owners about them, and did some tests in actual. I felt that the education policy was very different from that of Japan because the students were mainly involved in the process. I realized that there was an education system expected to improve each student's diagnostic skills because students could have a one-on-one discussion with the residents and got feedback from the faculty and other students at the end of the day. I felt that it was difficult to keep up with the conversation, but the Japanese resident of the CSU explained it to me and I could deepen my understanding.

On the third day of the program, due to the arrival of the blizzard, the original tour of the food packer was canceled. That's why I had a VR experience about anatomy at the hotel and visited the CSU's anatomy facilities and so on. I felt the advantage of a VR was that we could see the organs in 3D and see the parts many times that were difficult to understand from 2D. At the CSU's anatomy facilities, I visited the anatomy room, and it was found that each operating table was equipped with a computer, and that various ideas were made to make it easier for students to understand.

On the fourth day of the program, in the morning, I visited the Surgery at the VTH. In the afternoon, I received explanations about the various testing devices used in the Clinical Pathology and then visited

the Radiology for the diagnostic imaging. As in the Internal Medicine, diagnosis was made primarily by students in the Surgery. I saw a lot of cutting-edge devices in the Clinical Pathology. I also found some devices that were difficult to see in Japan. For example, I was surprised the automatic dyeing device. As for the diagnostic imaging, I hadn't learned it in class yet, so it was almost impossible for me to understand from the images. However, it was once again realized that understanding of the characteristics of each animal through images was important to various diagnoses.

On the fifth day of the program, I visited the Dumb Friends League which was the animal shelter in Denver and the Dumb Friends League Hospital which was the animal hospital. In the animal shelter, I knew there was an established system that involved the process from animal pickup to testing and finding new owners. Posting websites on the Internet and holding lectures at public facilities make it easy for the public to understand the shelter. I felt that the idea of animal welfare was spreading widely.

Generally speaking in Japan, animal protection centers may not have a very clean image, but I realized that the animal shelter was quite clean and human and animal welfare was improving. In the case of the animal hospital, this hospital is designed for low-income people, and a system has been established to reduce medical costs so that people can live better lives with animals in any situation. I was surprised at the difference from Japan when I learned that the animal hospital's efforts were widely known and supported by a large number of people, and donations were collected and that the management of the animal hospital was successful.

Above I've been talking about the five-day activity. I think it was a very valuable experience. At the beginning of the program, I

was disappointed at my lack of knowledge because the technical terms were spoken in English and I could not seem to keep up with the conversation. However, as I followed the days, I was able to hear the words I learned before and I felt that I understood more and more little by little. There were times when I felt that visiting animal hospitals overseas was a little too early at the end of second grade, but after the five days, I think this experience was very important for me to think about my future as a veterinarian. I learned what I needed to learn from now on and the world like this was spreading as a veterinarian.

Dr. Kato supported this program and he told me a very valuable story about veterinary medicine. I am deeply grateful to him and Gen Kato Fund. During this program many people helped me. I would like to express my appreciation to everyone who were involved in this program.



at the animal shelter



## Mayuko MAEDA (2<sup>nd</sup> year)

### Day 1 3/11

On the first day, we visited some CSU veterinary facilities and saw how they treat and examine animals in the Critical Care and Urgent Care. In the morning, Dr. Tim Hackett took us to CSU Veterinary Hospital(VTH), Flint Animal Cancer Center(FACC) and Translation Medicine Institute(TMI). When it comes to CSU facilities tour, it was impressive that the examination rooms were variously separated depending on animal species. Not to mention for dogs and cats, there are the rooms for exotic animals and animals from a shelter. In addition, keeping a horse as a pet is popular in America, so CSU has a wide variety of equipment for horses. In CSU, they see as many as 6,000 horses in one year. The educational systems for CSU students are also excellent. For example, the students can see the images of the operation or the endoscope in real time and can ask a question to those who perform that operation or endoscope. Another example is that there is a room only for practicing communication to facilitate conversation with any owner.

### Day 2 3/12

On the second day, we visited Internal Medicine and saw the interview to owners and medical treatment. The following is the case I saw.

<Case: Liver enzyme (ALT) elevation 13-year-old Jack Russell Terrier>

There are two causes to elevate the level of liver enzyme. One is that some problem is in the liver itself. The other is that the digestive organ other than the liver is bad and pathogens that transported to the liver through the portal vein cause some problem to the liver. Ultrasound examination showed liver lump, so the former reason is suspected.

In VTH system, CSU students think about the inspection item and the treatment plan by themselves at first after they ask an owner about patient's history and symptom. Then they discuss with the resident about the suspected disease, the treatment plan and so on. After these things are done, they explain to the owner. This system is practical and student-centered, but I think taking a long time for one examination is a bad point.

### Day 3 3/13

On the third day, we experienced anatomical VR teaching system and visited the anatomy research facility. About VR, we can see realistic images of organs and body parts through goggles, and we can catch, draw and enlarge the images using a pair of controllers, so we can see them from all angles. In addition, we can select and emphasize what you want to see such as a blood vessel and a muscle.

### Day 4 3/14

On the fourth day we visited Surgery, Clinical Pathology and Radiology part. The following is the case I saw in the Surgery part.

<Case: Mass at the top of the head , Shunt between the portal vein and the caudal vena cava>

He has a mass at the top of the head and its size gradually increases. He needs to have an operation for his shunt, but considering his age, there is some risks to the operation.

In the Clinical Pathology part, we saw various machines and equipment. There were an automatically staining machine and blood-clotting factor measuring equipment and so on. In the Radiology part, we saw some equipment and an ultrasound examination and received an explanation about some cases.

In CSU, there are many specialized fields, and each field gives medical treatment only for each field. It was surprising that there were nutrition specialists who manage patients' food. Under this system, they can concentrate on only their specialized fields, so the treatments can be better and more careful, but I felt it was a disadvantage that adjusting each schedule and movement to each treatment place is essential.

### Day 5 3/15

On the fifth day, we went to Denver and visited an animal shelter and its clinic. Dumb Friends League is a nonprofit animal shelter which receives around 25 million dollars a year as donation. This animal shelter accepts a variety of animals (not only dogs and cats but also rabbits, turtles, guinea pigs and so on). All animals are kept in proper and clean environment, and their healthy coats make them look nice. Support for owners is provided, so owners can get some advice about their pets' health conditions and can bring them for the examination even after adoption. Most impressive thing in the shelter was After Hours Intake. This is a kind of box people can keep animals in. After Hours Intake was made for those who have some trouble to bring animals to the shelter during the day. They can put animals in the box secretly in the middle of the night.

Dumb Friends League New Clinic develops services for low-income owners. Surgery in this clinic costs one-third of another clinic, and this clinic performs spaying and neutering for free every day. These services are possible thanks to the donation.

Through the 5th day tour, I was impressed by higher-level recognition and large donations for animal shelters.

Finally, I really appreciate Dr. Gen Kato and Gen Kato Fund giving us this kind of special opportunity.



# To Colorado State University ⑤

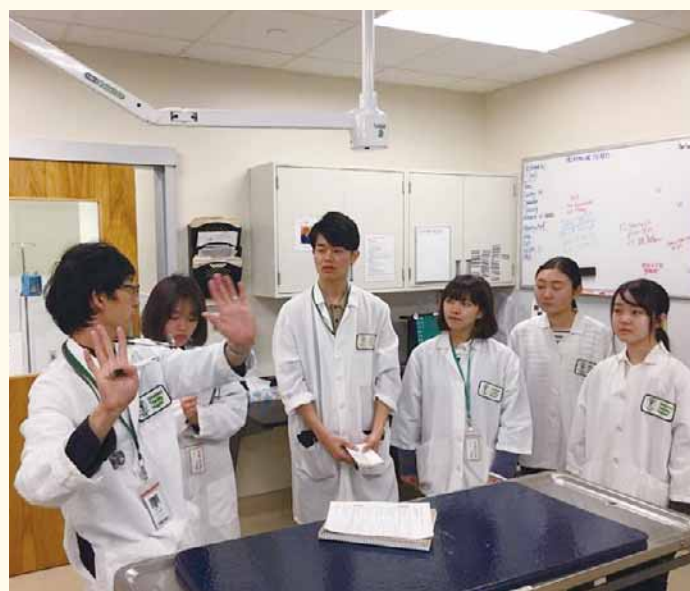
## Hikari SEO (2<sup>nd</sup> year)

Participating in International Vet Exchange Program (IVEP) was a great experience for me. I visited Colorado State University (CSU) for 1 week.

On the first day, we made a tour of CSU. Compared to Hokkaido University, there was far bigger and more facilities for clinical medicine. They had many sections like Urgent Care, Internal Medicine, Clinical Pathology, Anatomy, and so on. Each section has a couple of specialists and students can learn from them. I thought it was a great learning environment. To be a good vet, not only operation technique but also communication skill is important. CSU has simulation rooms for students to practice asking an owner about pet's medical history and symptoms. In there, actor plays a difficult owner and students deal with him. It's a practice to develop communication skills.

On the second day, Dr. Fukushima guided us around Internal Medicine section. In CSU, first students of 4th grade talk to owners and ask about their pets, and then students consult with specialists and talk about medical treatment. I saw a dog who has a disease called Cushing syndrome. When CSU student asked her owner about her, the owner said that she drinks a lot. Then we checked her blood pressure and blood corpuscles. I was surprised that CSU students could talk to owner responsibility, and plan what medical tests to do.

On the third day, we tried an anatomy system using virtual reality. VR is like being in the game. We wear a special head band and list bands. We could touch any part of cattle, pigs and horses and zoom



Lecture of Internal Medicine section by Dr. Fukushima

in and out with our hands. This system will be a useful tool to review anatomy. After that, we visited anatomy section. There was a big anatomy stands and each stand had a light and camera. In the lecture room, there were many skeletal specimens like tiger, elephant, chinchilla and so on. They had also skeleton of human too! In the afternoon, we had planned to go to animal shelter and meat packing company, but we couldn't go because of a blizzard.

On the fourth day, Dr. Tokunaga show us



Pictures of CT

surgery section. I saw an old dog that has many tumors. CSU professors and students did an examination using ultra sound and found tumors. I couldn't make out what it's all about, so I thought it's fantastic to understand what is wrong with her only by using ultra sound. In the afternoon, we visited pathology section and radiology section. In the radiology section, there were pictures of CT and MRI of all patients.

On the fifth day, we visited animal shelters in Denver. They protect missing pets or deserted pets and find owners. I was surprised that 80% of pets are from shelter in America. Actually we could see many people visiting shelter and looking for pets. In Japan we usually buy pets from pet shop, so I hope more Japanese people take animals from shelter as pets. In shelter, they also consult with owners about their pets and make a surgery for low price.



In front of animal shelter

In this program, I could learn many things and it was a valuable experience. By talking with residents, I came to think that I want to learn in America someday. I realized that I am overly ignorant about veterinary medicine, so I will study hard. I want to study English more, too. I would like to thank Dr. Gen Kato and Gen Kato Fund for generous donations and support. Also I would like to thank Dr. Fukushima, Dr. Tokunaga for technical help. Thank you for taking me Colorado.