



There are a wide variety of exchange programs for young people at different levels. TMDU students and young researchers improve their skills by participating in training programs abroad.

Reports of TMDU Students in the World

Report 01

The Most Valuable Six Months of My Life



Tetsuji Furukawa
4th year student, School of Medicine
Project Semester in the U.K.



DURING PROJECT SEMESTER, I was given the opportunity to do research in Imperial College London (ICL). I chose the laboratory in the Department of Surgery and Cancer at St. Mary’s Hospital. This hospital is famous for Alexander Fleming who discovered the world’s first antibiotic substance penicillin, and the professor of my laboratory, George Hanna, is a well-known authority on upper gastroenterology. I was highly honored to be a member of his research group at one of the best hospitals in the world.

What I first surprised me in the laboratory was the variety of nationalities,

from countries such as Italy, China, Brazil, Greece, Cyprus and Taiwan—so very different from laboratories in Japan which feature a few nationalities at most. Thanks to this diversity, we were able to share different opinions about research and discuss a variety of issues on the project every day.

I was so happy that I could conduct research with the awesome people at this laboratory. They were so kind to me, giving me constructive opinions and enthusiastic encouragement when my experiments didn’t go well. Sometimes I got stressed out but I was able to achieve my projects thanks to the



In front of Kensington Palace

support of my daily supervisor and other members of the laboratory. It was one of the greatest experiences in my life.

One of the most impressive experiences in London was to observe a surgery performed. I was excited since I had never seen a surgery before even in Japan. The surgeon performed operations every week and I was able to observe his gastric surgery. He kindly gave anatomical explanations while performing surgery to both me and other ICL medical students. Furthermore, he told us that he learned his



With TMDU students (2019)

With my lab members

method of surgery when he was in Japan. He also said that he admired Japanese surgeons. At that moment, I felt proud of Japan and pleased to hear that. I would like to express my gratitude to him for showing us his great skills.

Throughout the research program, I

was always thinking how lucky I was to be able to do research in that laboratory. To be honest, I was anxious before going to London as it was my first time to visit Europe. However, TMDU has had the exchange program with ICL for more than ten years, and the accompanying support system helped me to live

life comfortably in London. I was able to improve my English skills through discussions with my supervisor and writing up the final report. I would like to thank all the people who were involved in this program and I hope this program will continue to benefit future students.

Report 02

Six Months on the Other Side of the World



Yoshihiro Sawaguchi
4th year student, School of Medicine
Project Semester in Chile



With another international student from Italy

SEVENTEEN THOUSAND KILOMETERS and over 20 hours of flight. That is how far Chile is from Japan, where I spent six months for my Project Semester.

The University of Chile is a public university founded in 1842. It is located in the capital of Chile, Santiago, and has lead Latin America in various fields, from science technology to art. I had the opportunity to conduct research under the guidance of Dr. Miguel O’Ryan in one of the laboratories in the Program of Mycology and Microbiology.

I undertook two research projects, one about norovirus and the other about astrovirus. These two viruses are the leading causes of gastroenteritis, which is frequent and often fatal for infants. The aim of the research was to describe the molecular epidemiology of astrovirus in a suburb of Santiago, Colina, and to confirm the presence of norovirus recombinant (GII.P16/GII.1) for the first time in Latin America. As I had no

background in studying these viruses, I spent the first month studying by reading articles and presenting what I learned to the professor. The research taught me the methodology of epidemiological studies and how to perform the genotyping of the viruses.

The research itself went relatively smoothly and I was able to obtain data without much difficulty. However, I struggled with communication since in Chile the people speak Spanish. Although my professor and some other researchers were fluent in English, most of the people who I worked with could not speak English very well.

As a result, I had no choice but to try to communicate in Spanish with them. As the saying goes, “When in Rome, do as the Romans do.” I tried hard every day and after much effort I was able to discuss everything about my research in Spanish. It was definitely one of the most challenging periods of my life, but I feel confident and proud of

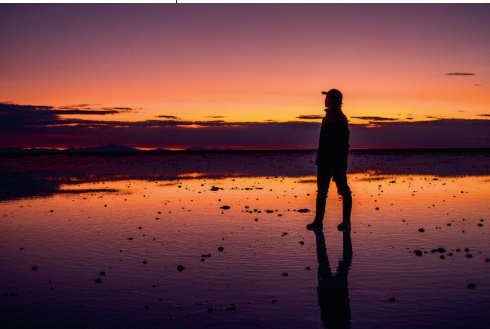
what I was able to achieve during my stay there.

At the same time, I was astonished by the language skills of the other international students I interacted with at the University of Chile. As I talked with them, I found out that the majority of the students knew three or more languages. They all could speak English in addition to their mother language, and were learning a second or third foreign language. This was something I doubt I would have experienced had I chosen to do my research in an English-speaking country.

One of the most impressive experiences I had besides doing my research was when I participated in a gynecology class. While the class was in session, unexpectedly a majority of students suddenly left the class. I asked my friend why they left the class and he told me that it was a form of protest



With the other members of my laboratory



At Uyuni Salt Lake

against the professor who committed sexual harassment at the hospital the year prior. I was surprised by the way the Chilean students protested the incident, how they thought about such

things, and the cultural differences between Chile and Japan.

Throughout these six months, I learned that it is not enough just to know English. I also learned much about how a

developing country struggles to become a developed country. In the future, I want to utilize both English and Spanish skills for working in California as an emergency doctor.

Report 03

My Experience in Finland



Kyoka Noda
3rd year student, School of Health Care Sciences
Study Program in Finland



IN AUGUST AND September, 2019, I participated in a study program in Finland. I learned so many things through lectures at Seinajoki University of Applied Sciences, visits to facilities, and shadowing in a hospital. I would like to introduce three things that especially impressed me.

First, I learned about lahihoitaja. In the educational curriculum, lahihoitajas learn about nursing and care for handicapped people, elderly people and children, pharmacy, and rehabilitation in the first and second years. In the third year, they choose one of eight study programs, such as children care, care of elderly people, mental health, foot care, and so on. After graduation, they can work at various places, for example, a hospital, kindergarten, or elderly home. The work Lahiohtajas do is very similar to that of registered nurses. I was surprised because I had not expected that they would be able to give so much medical care. Prior to the lecture, I had

thought that their training was wide yet relatively shallow, so now my image of lahihoitaja has changed. I think lahihoitaja is a very flexible occupation.

Second, I was impressed with how effective, efficient, and coordinated is the division of labor in Finland. When I visited a health care clinic, I was surprised that all nurses and physical therapists have their own room, and see patients earlier in the process than do the doctors. It is a good system because patients can receive care early thereby reducing the cost of medicine. Recently in Japan nurses have begun to handle outpatient services, but it is still far from the norm. I think it would be a giant step forward for these services to become more common in Japan as well.

Finally, I admired the effective use of technology in the medical field, especially the Kanta and Kela cards. Kanta is a national archive of health information. Only the individual and medical



Wearing traditional Finnish dress

workers can access the archive information. The Kela card, which is mandatory nationwide, has a security number. For instance, patients can obtain medicine just by showing their Kela card and the card enables doctors to check all previous prescriptions, thereby avoiding unnecessary duplication. It is more reliable than drug notebooks. I think this system not only protects the health of patients but also reduces national medical expenditure.

Additionally, medical equipment is embedded with advanced technology. In the ICU at Seinajoki Central Hospital, lighting adjusts automatically in order to support patients' natural circadian rhythms, thus preventing delirium. I noticed that it was important to take into consideration how to improve hospital design. Furthermore, in ICU and emergency ward, all nurses have smart phones, and alerts from the monitoring devices are automatically directed to the phones so that nurses can respond immediately to unusual signs from patients. All of this smart use of technology was fascinating to me.

I found many similarities and differences between Finland and Japan, which made me interested in seeing nursing within a larger context. Through this study program in Finland, I gained a lot of invaluable experiences. I would like to express my gratitude to all the people who supported this program.



With faculty members and student tutors at Seinajoki University of Applied Sciences

Report 04

My Experience in Thailand



Marino Shibuya
3rd year student, School of Health Care Science
Study Program in Thailand



I PARTICIPATED IN a short-term overseas training program in Chulalongkorn University for 10 days during summer vacation. In this program, I visited King Chulalongkorn Memorial Hospital and National Blood Center and did laboratory work for four days. The laboratory work consisted of transcriptome data mining, cell culture, analysis of hippocampus using confocal immunofluorescence microscope, rat behavioral analysis, and realtime data analysis. I rarely use confocal immunofluorescence microscope so having the opportunity to use it was invaluable for me.

Professors and students at Chulalongkorn University treated us so kindly. They took us to and from the airport. In addition, they took us to Ayutthaya by van on the weekend, and they treated us to a meal almost every day. On the final

day, they held a farewell party and put beautiful traditional costumes on us. Through this program, I made a lot of friends with whom I am still in contact with them on social media.

The most surprising thing was the number of PhD students. It turned out that nine of the twelve students belonging to my laboratory were PhD students. At TMDU, more than half of medical technologist students go to the master's course but rarely continue on to the doctoral program. In addition, it takes students at TMDU about three years to obtain a doctoral degree, while at Chulalongkorn university it takes students more than three years. I suspect they might be acquiring more knowledge and skill for research. One other thing that surprised me is that students at Chulalongkorn University can



Lunch with members of my laboratory



Wearing traditional dress

see a university hospital doctor for free—which no doubt is very helpful for students.

One more thing that impressed me was the sheer number of international students attending Chulalongkorn University. There are a lot of student dormitories for international students around the university. I think the university environment is very accommodating to international students. Also, most students at the university appear to have high English-speaking ability. They can fluently speak not only in basic conversation but also in academic conversation. Whenever I asked a student in my laboratory about their research they gave answers and explanations that were easy to understand. As it is difficult for me to explain my research in English, seeing students close to me in age be able to explain their research in simple-to-understand English really inspired me.

I am confident that this experience will assist me in the future. I appreciate all the support I received from everyone.

Report 05

Invaluable Experience in Boston



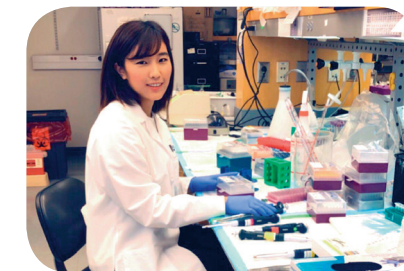
Mio Nakayama
4th year Student, School of Dentistry
Study program in the U.S.



I PARTICIPATED IN basic research activities for three months at Harvard School of Dental Medicine. I visited Dr. Baron's laboratory, which was famous for bone research. During my stay, I was invited to join my supervisor's project (a postdoctoral student from

China) exploring the influence of high circulating Irisin on bone and osteocytes. Irisin is a newly identified myokine produced by skeletal muscles during physical exercise, suggesting an important role in bone remodeling.

At the beginning, I read many papers,



Performing an experiment

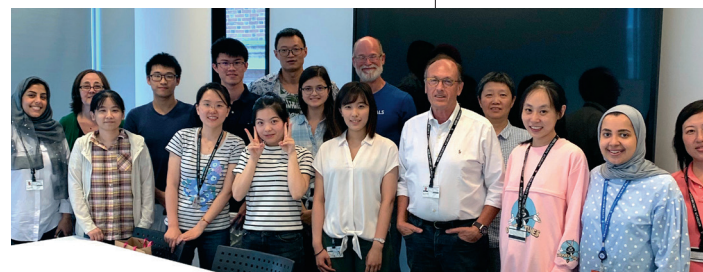
including those published in Japan by Dr. Baron, in order to prepare myself for this project. I discussed what I couldn't understand with my supervisor. While reading papers, I learned an

experiment technique needed for the project. Though I had learned some techniques in Japan, at Harvard I encountered difficulties learning unfamiliar protocols and new, challenging techniques. I found euthanizing mice to be particularly difficult. We had to dissect mice as fast as possible to get fresh samples, but the process was extremely time consuming. After much practice, I was able to do it more quickly. My first month was spent primarily acquiring knowledge and experimental technique.

My main project started the second month there. It was a collaboration with a researcher at DANA-FARBER, a can-

cer institute, where we euthanized mice and obtained bone material. Later we analyzed the mice in our laboratory using the new technique I learned. The Harvard laboratory experience was invaluable because it provided opportunities to learn about career paths from mentors and co-researchers and observe first-hand the environment of a large laboratory on a scope I had never seen in Japan.

It was also my first time to visit the U.S. I was surprised at the rich international environment. In my laboratory, Dr. Baron was from France, and other members came from other countries,



With members of my laboratory

Report 06

My Nine-day Special Experience in Thailand



Yuri Nakahama

3rd year student, School of Oral Health Care Sciences
Study Program in Thailand



IN SEPTEMBER, I visited Mahidol University in Thailand for nine days. I really enjoyed my stay in Thailand and gained a lot of valuable experiences.

In my overseas training, I experienced and learned three major things.

The first is about Thai dental education. At Mahidol University, dentistry students participated in actual treatment in hospitals as practical training. For

example, in the practice of elementary school screening, children were given treatments that are generally performed in dental clinics in Japan, such as removal of tartar, instruction on how to use floss, and application of fluoride. We were also allowed to participate in this training assistance. The children



At community health center



During the actual treatment

such as Italy, China, Saudi Arabia and more. They all had different backgrounds. I really enjoyed talking with them and learned much about their respective countries. As most of them were doctors or dentists, I could ask them about the medical environment and education for dental students in their country. Outside the laboratory, I had dinner and lunch with them. At the end of my stay, they held a farewell party for me, complete with cake, and kindly gave me a card wishing me the best. I had a great time thanks to them.

I visited sightseeing place in Boston on my holidays. There were many famous places, for example, Museum of Fine Arts and Freedom trail. I usually went out with medical students from Taiwan in my laboratory.

My experience in Boston was invaluable. I am determined to make use of my experience there in my future career as a dentist.



With Thai students

were very friendly and cute. I was able to interact a little with them by teaching them simple Japanese, like “Arigato”.

Second, I learned about Thai dental treatment. After visiting various facilities, I was surprised to learn that dental treatment in Thailand was at a level not much different from that in Japan, or even better. The most impressive of these facilities was a clinic that provided a large volume of dental aesthetic treatment to foreigners. In this clinic, cleaning, sterilization, and packing of instruments were performed in a single set of treatments. The clean area was managed very strictly. This can only be done because the hospital is very large, which is difficult in a small dental clinic

ic in Japan. I imagined that foreigners would be pleased to receive treatment in such a well-managed clinic.

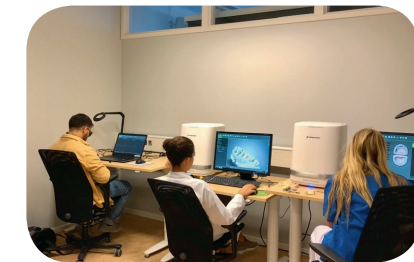
There were plenty of opportunities for me to speak English. Although I’m not particularly good at speaking English, I enjoyed communicating and interacting with Thai students.

Finally, I learned a lot about the cultural aspects of Thailand. I experienced

various activities, sightseeing and shopping. My favorite in particular was Thai food. I really like to try unfamiliar foods, especially exotic dishes sold by street vendors, various delicious sweets, and fruits that are not accessible in Japan.

Overall, through this overseas short-term training program, I was able to have many invaluable experiences. I

gained a lot of knowledge, so I hope that I can use that new knowledge in my future career as a dental hygienist. I would like to thank all those involved in this overseas training, teachers who sent me overseas, the professors and family members who took care of me in Thailand, and students from the School of Dentistry at Mahidol University who kindly made contact with us.



Designing teeth using CAD

Report 07

My Overseas Stay in Sweden



Kimika Nakajima

3rd year student, School of Oral Health Engineering
Study program in Sweden



I PARTICIPATED IN a dental technology course in Sahlgrenska Academy at Gothenburg University (Sweden) from September 7th to 28th, 2019. While it was a short stay, I really learned a lot.

Firstly, I was surprised to learn that each procedure in the laboratory work class entailed many different aspects. I struggled to even grasp a hand piece engine. Just getting used to Swedish machines and tools was confusing and almost impossible at first. But in the end I figured things out and actually found such strange differences quite interesting. Of course, when I came back to Japan I had to relearn how to use the tools here! Naturally, I learned many things from my conversations with the university students about dental technician matters in Sweden. They were very kind and reached out to me early on. Thanks to them my lab work was fun. I felt like they always cared about me. When I was having difficulty, they

immediately gave me a helping hand. It was very heartening.

Secondly, I was very happy to be able to visit a dental material company and hospitals. I went to Dentsply Sirona Atlantis in Mondal. Ms. Sugata showed me around the company office and factory lab. She is the only Japanese in the office there. I learned much about implants, procedures, materials, machines, and people there. However, the most impressive thing is that there are job opportunities for non-Swedish people such as Japanese. Ms. Sugata working at the company showed me that it was possible to work abroad. It really encouraged me to set my own goals and to think about my future career.

I went to two hospitals in the university. One is Branemark Center, the other is University Hospital.

Branemark Center is named after the researcher, Professor Per Ingvar Branemark, who invented implant technology.

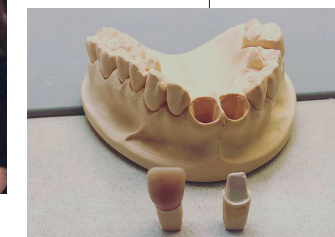
gy. He was a professor of the university. I had the opportunity to observe implants being used for dental treatment. Unlike Japanese insurance which does not cover implants, Swedish national health insurance covers implant treatment fees for any and all teeth. In fact, I heard the more teeth you had treated, the more insurance support you received. I was very impressed with dentistry in Sweden.

Because I was the only Japanese student in residence at Gothenburg, I had to learn overseas survival skills. Wherever I went, I had to do everything myself. This experience forced me to grow up mentally. Also, seeing people working outside Japan is really valuable to think about my future career. I am interested in working abroad, so living in Sweden helped me form connections outside Japan for the future.

I greatly appreciate with this opportunity. It is a lifetime treasure for me.



Farewell dinner with my close friends at the university



Waxing up for emax