

# TMDU Dental Training Program 2016

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October 6-19, 2016



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Comparative Dentistry  
and Foreign Externship  
Faculty of Dentistry,  
Srinakharinwirot University



Inter-University Exchange Program  
toward Medical and Dental  
Networking in Southeast Asia



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# INTRODUCTION

Inter-University Exchange Program toward Medical and Dental Networking in Southeast Asia “The Dental Training 2016” happens from the cooperation between Tokyo Medical and Dental University and 4 partner universities from Thailand, Vietnam and Indonesia.

Tokyo Medical and Dental University (TMDU) invited dental students from the partner universities including Srinakharinwirot University (SWU), Chulalongkorn University (CU), Universitas Indonesia (UI), and University of Medicine and Pharmacy at Ho Chi Minh City (UMP) to a two-week “TMDU Dental Training Program” between October 6 - 19, 2016, which included not only observing of method in research, visiting basic science lab and dental clinic, attending international symposium but also visiting a dental materials supplier and cultural exchanges.

This program is also a part of Comparative Dentistry and Foreign Externship elective course established for 6th year dental students of Srinakharinwirot university.

The goals of this program are

1. To improve English ability
  - To communicate with overseas dental students and staff in English about general matters and also to promote international discussion and debate about dental professional matters
2. To promote cross-cultural understanding
  - To appreciate and respect for cultural differences (traditional culture, religion, belief and lifestyle diversities) among nations and to accept the differences without prejudice
3. To understand oral health situation and problems of the visiting country
  - To understand oral health situation and dental education systems in Japan
  - To focus on the health needs, prioritization and strategic implementation plans for meeting different nations’ dental health needs under supervision or by themselves
4. Commitment to lifelong learning
  - To get motivated to do life-long learning
5. To get international viewpoints and get motivated to become future dental leaders
  - To cooperate with others and to learn leading roles among national and international dental professional communities





# OPENING CEREMONY



In the morning of October 7, the first time for us visiting TMDU, we attended to the opening ceremony and orientation with other exchange students from Thailand, Vietnam and Indonesia. In this session, the professor came to give a brief welcoming speech and gave us a handbook and program schedule. After a warm welcome speech and introducing staffs, the professor explained about the program and wished us to enjoy and have a great time in Japan. And then, We have learned basic Japanese speaking which was very useful especially greeting, self-introducing conversation and asking questions about foods.





These are examples of Japanese phrases and conversation that we have learned.

For greetings

Examples	Meaning
<i>Hajimemashite</i>	How do you do? or nice to meet you
<i>Watashi wa (your name) desu</i>	My name is (your name)
<i>Tai - kara kimashita</i>	I come from Thailand
<i>Yoroshiku onegaishimasu</i>	Pleased to meet you

For asking about food whether they are pork, beef, ... or not.

Examples	Meaning
<i>Kore wa (pooku, beefu, sakana, yasai, osake, ...) desu ka?</i>	Is this (pork, beef, fish, vegetable, alcohol, ...) ?
<i>Kore o kudasai</i>	I will take this.





## SURVIVAL IN JAPAN & DISASTER DRILLS



After opening ceremony and basic Japanese class, we attended to an emergency drill including earthquake drill and fire drill. At the earthquake drill, we have tried the earthquake simulator and learned to hold the table tightly while it's shaking. At the fire drill, we simulated to be in the smoked tunnels and used one hand to cover the nose and another hand to touch the wall and tried to find the way out safely.







At noon, we enjoyed having lunch with TMDU students including Sumiko, Junya, Poppy, Hiromi and Yuka, who will come to Thailand for exchange program next year in March, discussed about Japanese and Thai cultures, sightseeing and dental student's life. And after lunch, Poppy and Sumiko took us to look around the campus and explained how TMDU students live and learn in the university.





# GLOBAL RETREAT

@ SEMINAR HOUSE, UNIVERSITY OF TOKYO



In the morning of October 8, we went to TMDU to take a bus to the University of Tokyo at Chiba. All Global retreat activities including special lecture, teamwork activity, cultural show etc. will be held at the Kemigawa seminar house, University of Tokyo. We had stayed here for 3 days since October 8-10, 2016.





# GLOBAL RETREAT

## ⌘ SPECIAL LECTURE ⌘

The first day in Global Retreat, Dr. Clive gave us a special lecture. The topic was 'Population Oral Health Insights on The Future Challenges for The Dental Professionals'.

The key content is about taking care of aging patient, which tend to increase each year. Due to an advanced healthcare system, a number of aged patients are increasing and those patients tend to have more teeth than present. Also, the trend of having aged patients who come with chronic diseases and oral health problems is rising. This lesson allows us to prepare ourselves to be a good dentist to take care of our aging patient.



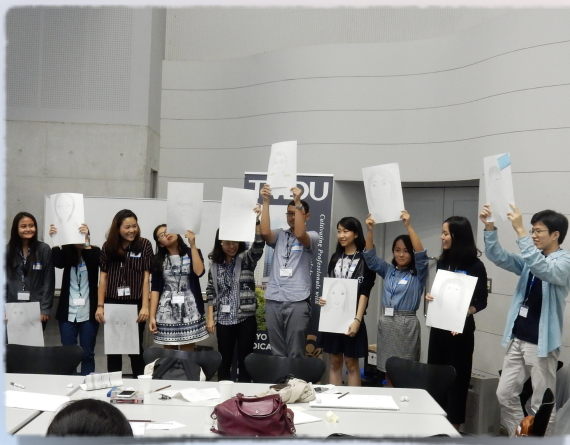


# GLOBAL RETREAT

## ⊗ TEAMWORK ACTIVITY ⊗



After the lecture, we have teamwork activity. The activity was drawing our classmate picture and let the other group guess who is that? This activity helps us know each other and this is so fun. In the evening, we had dinner on the large table. At dinner, we sat together and shared our story to each other. At the camp, we were arranged to share the bedroom with international classmates. This is another good chance to know them better.





## GLOBAL RETREAT

✳️ GROUP DISCUSSION ✳️

The next day, we were assigned to do the group discussion about Ideal Dentist – This is what I want to be. During the discussion, we shared out our opinion about what qualification and personality ideal dentist should have in our perspective. Sharing opinion with classmates broaden our view and knowledge beyond the book. What we have learnt from other views in Asian via multi-national classmates is a great benefit to all of us.





## GLOBAL RETREAT

✳️ CULTURAL SHOW ✳️

In the evening, we enjoyed our normal life by the cultural night activity. In this activity we have learned many new things such as traditional costumes of Vietnam and Indonesia, dances, songs, and game. Some of us joined Japanese game and we think it was very funny. After that we also have a dinner together.



Cultural show from our university





## GLOBAL RETREAT

✳️ CULTURAL SHOW ✳️

Cultural show from University of Medicine and Pharmacy at Ho Chi Minh City



Cultural show from Universitas Indonesia

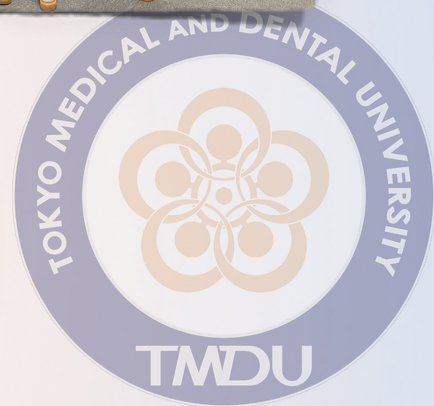




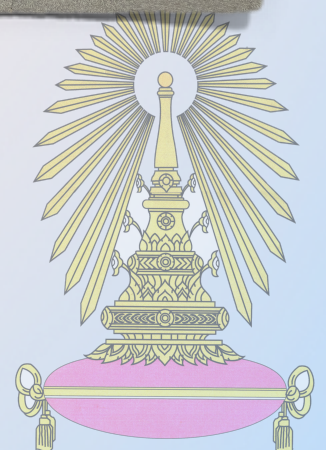
## GLOBAL RETREAT

✳️ CULTURAL SHOW ✳️

**Cultural show from Tokyo Medical and Dental University**



**Cultural show from Chulalongkorn University**

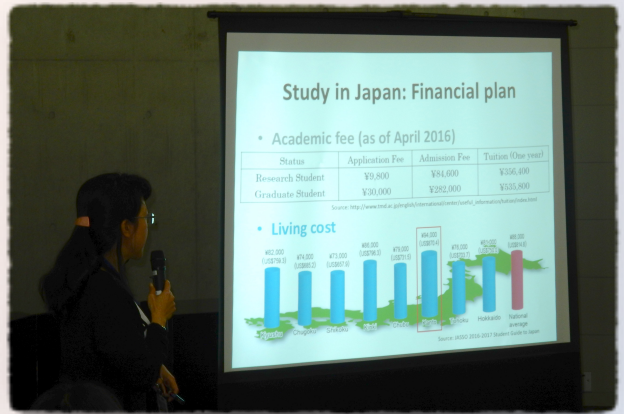




## GLOBAL RETREAT

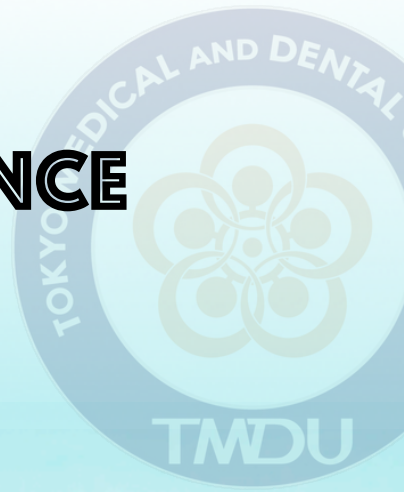
⊗ HOW TO GET INTO TMDU? ⊗

The last day, TMDU international students from Vietnam talked about how to get into TMDU and their lifestyle in Japan. We can ask the questions at the end of session. This is a new experience living as international students. We felt so thankful to TMDU that arranged such a beneficial program that opens up our view which we never have experiences before.





# CLINICAL & BASIC SCIENCE LABORATORY VISIT



After lecture class in the morning of October 11-14, 2016. We were assigned to different departments with other dental students from different university, so this part was written individually according to the department we had visited.





## ORAL AND MAXILLOFACIAL SURGERY DEPARTMENT

Oral and Maxillofacial Surgery department is located on 6th floor of Dental building. Associate Professor Koichi Nakakuki told us about the details of surgery works, the characteristics of Japanese patient and how to work in Japan. In the past, Japanese hospitals separated their surgery work into two sections which are soft and hard tissue surgery but these sections are into one. Also, there are two teams separately for OPD and IPD. They switch the role every six months. OPD team works on weekday and have a break during weekend while another team works seven days a week. There are a lot of patients in this hospital. The highest cases are cancer. Because of a large number of patients, some of them have to wait about 2-4 months for the treatment by specialist.

We visited Oral surgery clinic. This clinic recorded patient history of this clinic using both form, paper and computer system. Surgeons review the history and use all of the information they had to make the most appropriated treatment plan for their patients. After that, we went to three operation rooms in which they are used for cleft palate surgery, jaw reconstructive surgery, and the last one is maxillary tumor surgery. We observed how surgeons do their works while they are in operation rooms.



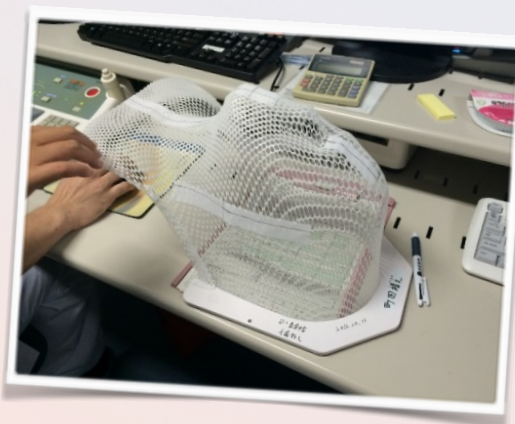


## DEPARTMENT OF ORAL AND MAXILLOFACIAL RADIOLOGY



We visited department of Oral and Maxillofacial Radiology which our professor was Dr.Hirochi Watanabe. We took a tour around the department which is located on B1 floor of Dental building. Our professor introduced us about the old and new version of x-ray machines such as panoramic x-ray, lateral jaw projection machine, wrist and chest x-ray, CT scan in medical and dental, intra and extraoral x-ray and the equipment that use for sialolith treatment. Then, we went to medical building for see the PET center

which has the PET scan machine and we had a chance to see doctor treat patient with cancer by using radio chemotherapy. Then, professor showed us some of his cases which we learned about brachytherapy to treat patient with oral cancer. Then, We visited the MRI room which had magnetic field around the machine and professor showed us some films and taught about normal or abnormal on patient films and taught some diagnosis of cases. Afterward, I visited a research part of this department which had Ph.D. student presented her research to all of us.





## DEPARTMENT OF ANESTHESIOLOGY AND CLINICAL PHYSIOLOGY



We visited department of Anesthesiology and Clinical Physiology. Prof. Haruhisa Fukayama introduced us about his department. He said that dentist in japan can administrate anesthetic drugs to patient. In operation room, dentists performed oral surgery and monitored patient's vital signs, which

includes blood pressure, heart rate, ECG or EKG, Oxygen measurement, and bispectral index (BIS). And one of us tried to be as a patient. Prof. Haruhisa Fukayama taught us about how anesthetic drugs work for amnesia, analgesia, muscle paralysis, and sedation. Then he let us tried some of sedative drugs such as nitrous oxide gas, sevoflurane, and desflurane. It was very interesting and some of us feel like disability while using nitrous oxide gas.





## OROFACIAL PAIN MANAGEMENT



We went to the department of orofacial pain management. Here, Prof. Masahiko and his PhD. students showed us two clinics including orofacial pain clinic and TMD clinic. In the orofacial pain clinic we have learnt the classification of pain which are nociceptive pain, neuropathic pain and psychiatric pain. The patients will be asked to score their pain in McGill pain questionnaire and do further clinical examination. The main treatment of the orofacial pain is medication for example carbamazepine for treat trigeminal neuralgia. We learnt about alternative treatments such as Kampo, Rampo, stimulation therapy electroacupuncture, needle, surface electrode, photodynamic therapy superlizer, AC Uontiphoresis, pain education group and music therapy.

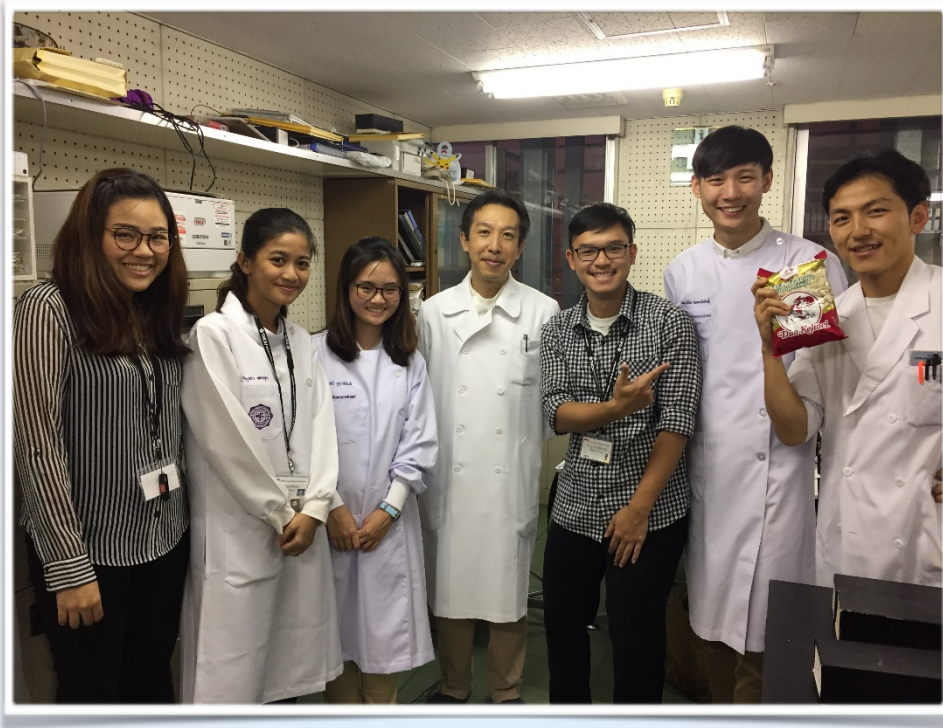
In TMD clinic we learnt about the diagnosis criteria for temporomandibular disorder, Tooth contracting habit (TCH) conception and new strategy for treatment TMD. TCH is a habitual behaviour that upper and lower teeth are kept contacted in unfuctional situation in low clenching-force level (~10-30% compare to maximum bite force). M. Farella et al 2010 found that the pain occurred only in low clenching-force level with long endurance time. So, the new strategy for treatment TMD is focusing on TCH treats by joint mobilization and muscle stretching, while the occlusal splint is not commonly used.

In this clinic, we have learnt many concepts and alternative treatments that are not commonly used in our country which helped open my perspective widely. we enjoyed trying many oriental treatments such as acupuncture and music therapy.





## DEPARTMENT OF ORTHODONTICS SCIENCE



In the afternoon of October 13, We went to orthodontics science department. We met professor Zusei Kanno. He introduced about TMDU orthodontics clinic and the outstanding characteristics. And then, he gave us a case study of patients who have a problem on chewing, esthetics concern etc. We, including dental student from Indonesia names Bosko, had to discuss about what is the proper treatment plan about those case from using cephalometric analysis.

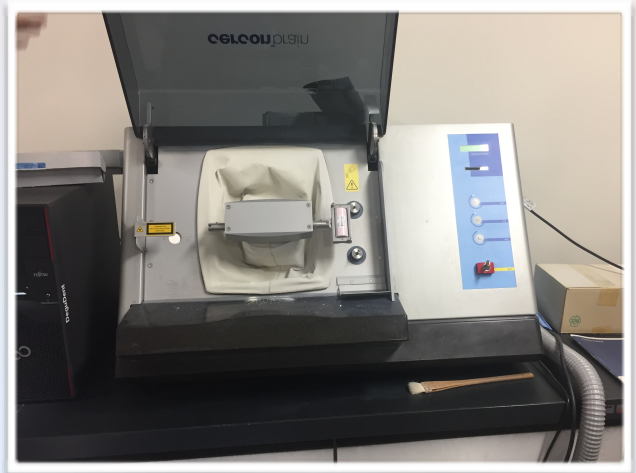




## DEPARTMENT OF FIXED PROSTHODONTICS

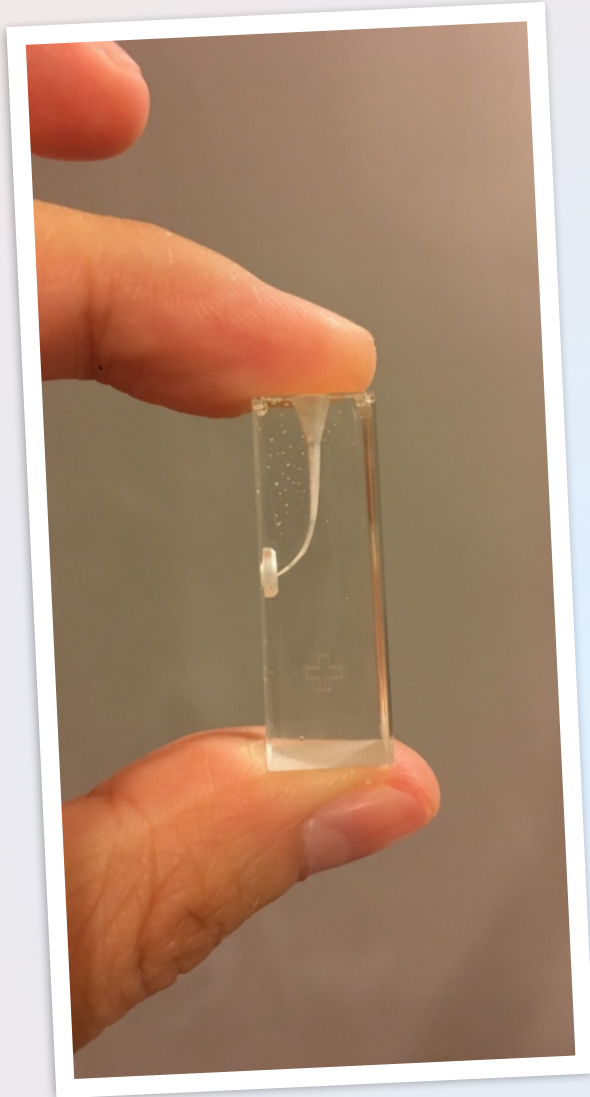
In the afternoon of October 12, I and other students from CU and UI went to Department of Fixed Prosthodontics at dental building north 11th floor. Ph.D. students, Dr.Natsuko and Dr.Bomb, introduced us about the department, prosthodontics clinic, the dental allergy clinic, laboratory and described about the current state of dental treatment in Japan.

They told us about researches and studies done in this department and showed us the Cerec and Cercon machine and the procedure of making a crown. Then they took us to fixed prosthodontics laboratory and clinics in 3rd floor. They taught us many things about the clinical procedures, instruments and dental equipments that we have never used before.

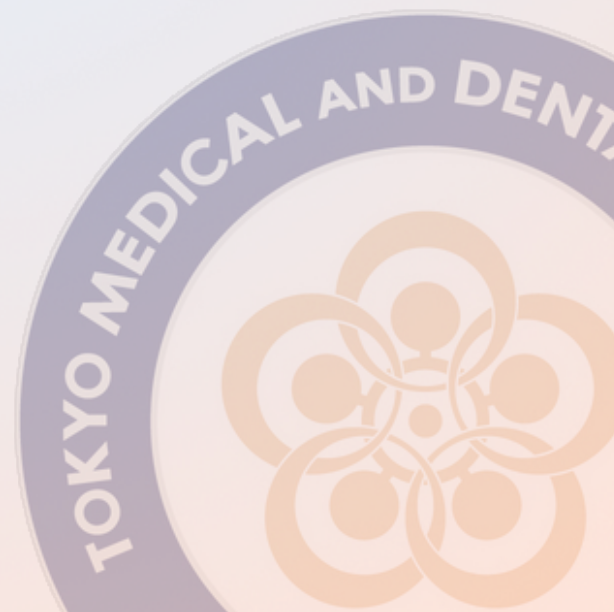




## **DEPARTMENT OF PULP BIOLOGY** **AND ENDODONTICS**



This laboratory was pulp biology and endodontics. We were allowed to watch the clinical procedures in clinic. Then we had a mini lecture about endodontics and we had practiced to use a rotary file. The rotary files made we worked more easily but must use with carefully because it could be broken in the canal. (Must not use more than 8 times per instrument) the procedure began with working length determination, coronal flare and canal preparation by arranged the sequence of files and using crown-down technique. After finished the class, we also had a root canal block back home.





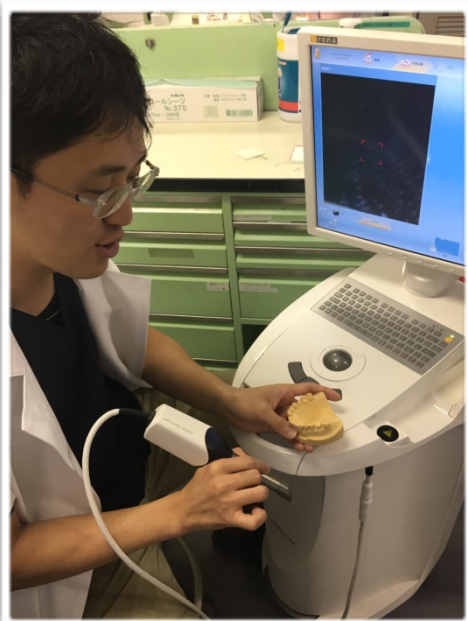
## DEPARTMENT OF REMOVABLE PARTIAL PROSTHODONTICS



Department of Prosthodontics has divided into three sections, which are department for fixed prosthodontics, removable partial prosthodontics, and removable full prosthodontics

We went to visit clinic, dental laboratory that is for professor used, and the last one is the student laboratory.

Then we went back to lecture room and learned about CAD/CAM technology that we used for making ceramic in dental prosthodontics treatment.



Using CAD/CAM technology save patient time because it has only three steps for making dental prosthesis which are scan teeth, design dental prosthesis, and milling dental prosthesis.

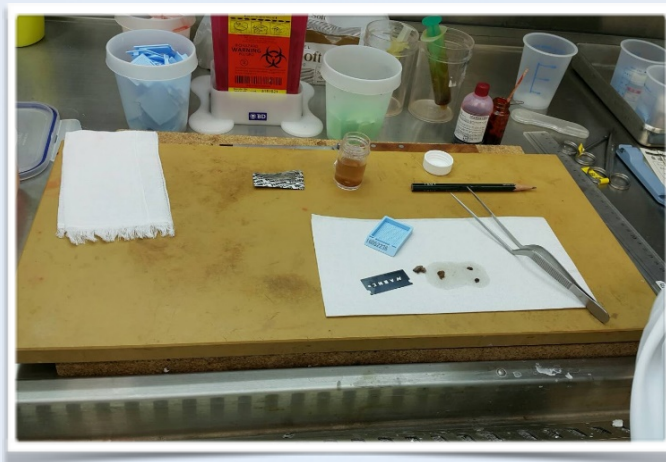
We can see how to use CEREC to make all ceramic crowns for the patient. We think it is a valuable opportunity for us to see something new.



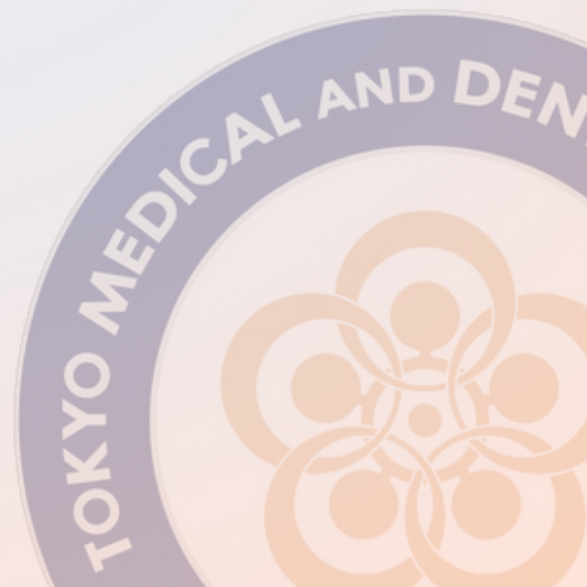


# DIAGNOSTIC ORAL PATHOLOGY

Here we learnt how to prepare the tissue section. The preparation of section can be divided to 2 main types which are frozen sections and paraffin sections. Paraffin sections need longer time to prepare but easier to be cut and provide clear margin while frozen sections' advantage is consuming shorter time to prepare because the tissue need not to be fixed. The process of paraffin sections started with surgical biopsies, tissue fixation, tissue processing with paraffin, embedding, sectioning and finally staining. In the sectioning process, the tissue will be sliced by machine called microtome.



Paraffin sections are usually cut at a thickness of 3-5 micrometer, here they cut at 4 micrometer thick because in this thickness the sections show little distortion or disruption. Then Dr. Tohyama showed us some sections of squamous cell carcinoma. After we learnt all the processes mentioned above, we visited the autopsy room and watched some video about autopsy which was very interesting.

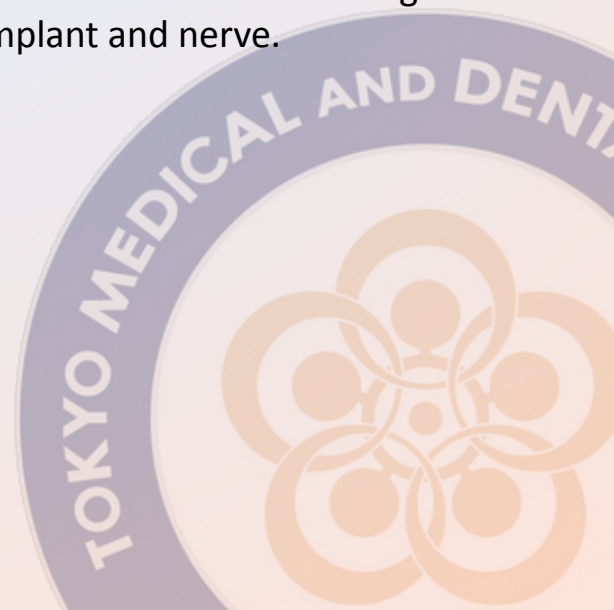




## ORAL IMPLANTOLOGY AND REGENERATIVE DENTAL MEDICINE



Oral Implantology and Regenerative Dental Medicine is located on 6th floor of Building 1 East. Dr. Shinji Kuroda, who was in charge of this department, explained that implant was not included in the Japan government's insurance so, patients have to pay all for the treatment fee. Nowadays, Cost of implant still be very expensive. Only some patients can afford it. Therefore, dentist should consider about cost-effectiveness and selected the best restorative option for patients. We were divided groups for observing 3 cases of implant surgery under IV sedation and local anesthesia. While the surgery was done, dentist had to cooperate with anesthetist to control the pain and their consciousness. Vital sign and oxygen saturation were monitored all over the surgery. Under IV sedation patient still be conscious and can respond. We learned about the implant surgery procedure and the associated factor such as diameter and length of implant or the minimum distance between implant and nerve.





## MAXILLOFACIAL SURGERY

We went to oral and maxillofacial surgery out-patient clinic at dental building north 6th floor. Professor Koichi Nakakuki told us about number cases of oral surgery in TMDU, teams of officer that divided into 2 groups; out-patient ward and in-patient ward/operation theatre. In oral surgery clinic for outpatient ward, the scope of work is minor surgery and some of operation that used IV sedation in patient, who can use IV injection.

Meanwhile, In operation theatre, they do the major surgery or do some operation in patient, who use general anesthesia or patient who cannot use IV sedation. For example, remove the giant cyst, remove benign or malignant tumor. Then we went to OR. We changed our clothes and observed all of the operation room and all area of this department including the inpatient ward which use for patients who need to recovery or rest after the operation and has a lot of room which has different cost.



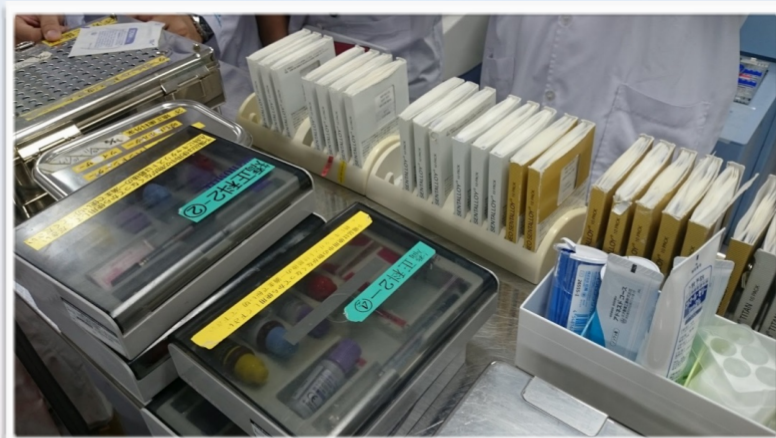


# MAXILLOFACIAL ORTHOGNATHIC

We joined departments of maxillofacial orthognathics which was divided into 2 clinics, orthodontics and orthognathics. In orthognathics clinic Dr. Ogawa showed us many interesting cases about orthodontics treatment in patients who has facial deformity such as cleft patient, hyloglossia and Beckwith-wiederman syndrome.

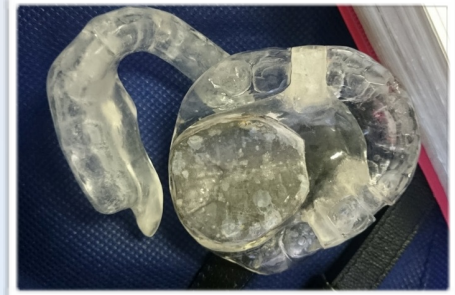


In orthodontics clinic we learnt about material that has been used in clinic, for example, L&H wire, Ni-Ti wire, stainless steel wire, and type of bracket. Also the properties of orthodontics wires, technique used in wire bending, the difference between type of wire, advantage and disadvantage of every kind of wire and how to apply or select the wire in patients. The Japanese Ni-Ti wire has ability to remember its original shape called “shape memory” and can be blended only with heat. To give heat treatment for Japanese Ni-Ti wire we need to pass the electric current directly through the wire.



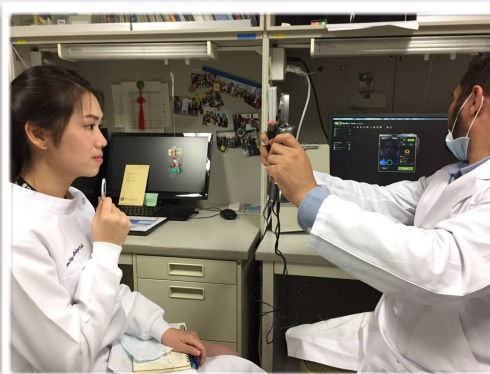


## DEPARTMENT OF MAXILLOFACIAL PROSTHETICS



Maxillofacial prosthetic department is in building 6 on 6th floor. We visited the clinic and observed some cases. I saw a lot of pictures of the case about maxillofacial prosthetics in TMDU hospital. For this department, they treat 3 main types of patient, congenital defect such as cleft lips and palate, accidental trauma and patients with cancer. They showed me the appliance that used for protecting the healthy tissue from the radiation called spacer and mould. The difference between spacer and mould is, spacer is only the clear acrylic that cover the healthy tissue, but the mould consisted of a part of clear acrylic and a part of acrylic with the metal sheet. That metal sheet is used for protecting the tissue and also for reflecting the radiation to the target cancer.

Dr. Mahmud showed us the 3D camera that be used for creating the 3D of patient's face by taking a photo with the 3D camera. This camera is more convenient than the conventional impression by materials. Dr. Mahmud also took my photo and created my face in 3D.





## **PERIODONTOLOGY**

We visited periodontology clinic, periodontal surgery room, which we had to observe distance away from the operation field because we did not change the clothes, and then learnt 2 interesting cases about comprehensive strategy of periodontal treatment, presented by Dr. Kosei Yano and Dr. Koji Mizutani.

The first case of Dr. Mizutani, the patient has an insurance and wanted to keep all the the remaining teeth. So he planed to do the open flap debridement in many area and root resection in one upper first molar that he decided that the root was hopeless.

In the second case of Dr. Yano, the patient had chief complain about having spontaneous pain of maxillary anterior teeth with gum swelling and tooth mobility. This patient also had an insurance and preferred to keep all the remaining teeth. In this case, Dr. Yano decided to used the regenerative material which was Enamel Matrix Derivative (EMD). Enamel Matrix Derivative or EMD is an extract of enamel matrix and contains amelogenins of various molecular weights. So we discussed furthermore about EMD and others materials. Amelogenins are involved in the formation of enamel and periodontal attachment formation during tooth development and mainly use in three walls defect because EMD is fluid-like so it cannot be maintained in the area without the bony walls. While, GTR mainly use in one wall defect due to it membrane structure.

For more than that, we discuss about the public insurance in Japan compared to Thailand, Vietnam and Indonesia. And we learnt how the insurance's coverage effected the patient's health behaviour.





## **DEPARTMENT OF MAXILLOFACIAL ANATOMY AND DEPARTMENT OF SPORTS MEDICINE/DENTISTRY**



We had demonstrated a mouth guard for activity such as soccer. Our Indonesia friend was a volunteer for taking an impression. After that, our group was having a lecture in the topic of sport dentistry for preventing athletic injury by Dr. Hiroshi Churei. He showed us an instrument for measure intraoral environment change and also showed the video for taking an impression of face to make an appliance for protecting face. After we had finished lecture, He was showing how to fabricate a mouth guard from started until polished.



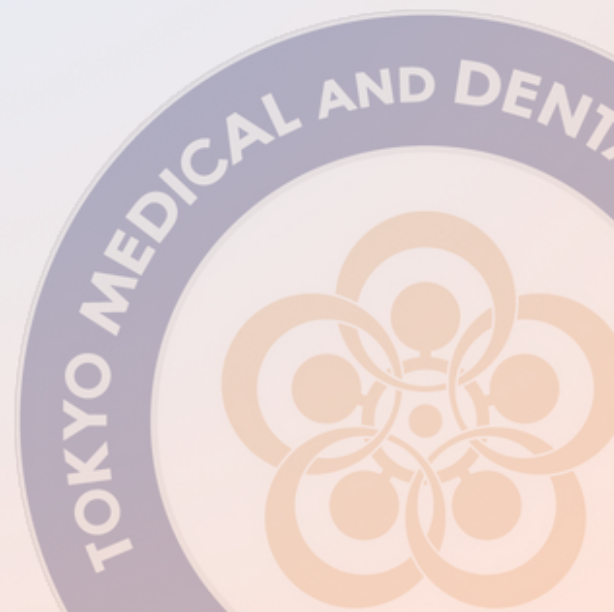
## **DEPARTMENT OF** **PSYCHOSOMATIC DENTISTRY**

At Psychosomatic Dentistry department, we learned many things. This department takes care of 4 kinds of symptoms, which are burning mouth syndrome, atypical odontalgia, phantom bite syndrome occlusal dysesthesia, and oral cenesthopathy oral dysesthesia.

PhD. Student said that patient with burning mouth syndrome was found most frequent at TMDU. Among those patients, burning is experienced on the tip and side of tongue, top of the tongue, roof of the mouth, and the inside surface of the lips. Some patients complain that the burning develops as the day progresses and worst by evening.

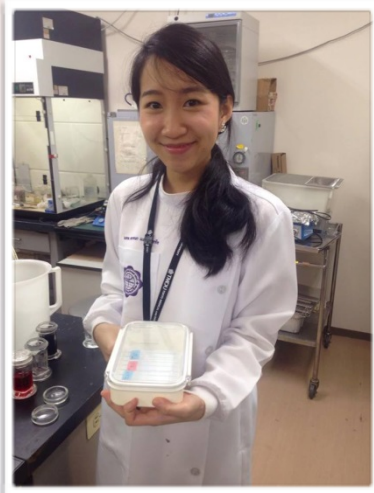
And the most difficult treatment is Oral cenesthopathy, which is a somatic delusion or hallucination involving the oral area. Patients complain of unusual sensations without corresponding abnormal findings in the oral area.

We learned and observed how to treat all of these symptoms, the best thing that you should do is 'give patients the precise diagnosis'. Some discomfort can be alleviated using a variety of antidepressants, minor or major tranquilizer. The medications help reduce the activity of nerve fibers. While sometime we can't treat the symptom completely, we can relief their symptom and listen their problem and that can also help them.





## DEPARTMENT OF MAXILLOFACIAL ANATOMY

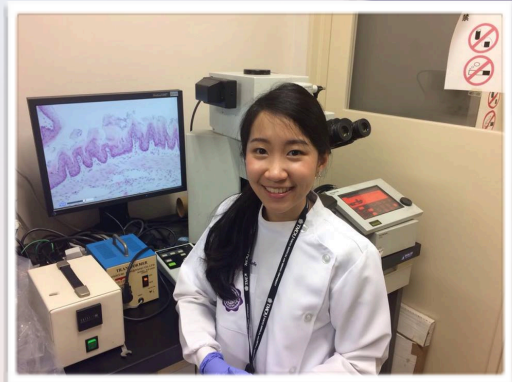


The supervisors for this department was Professor Shunichi Shibata. He showed us the different parts of the department of Maxillofacial Anatomy. There were many cameras that some of them older than us. Namely; light microscopes and electron microscopes. we also went to gross anatomy room. We changed our shoes before entered a big room.

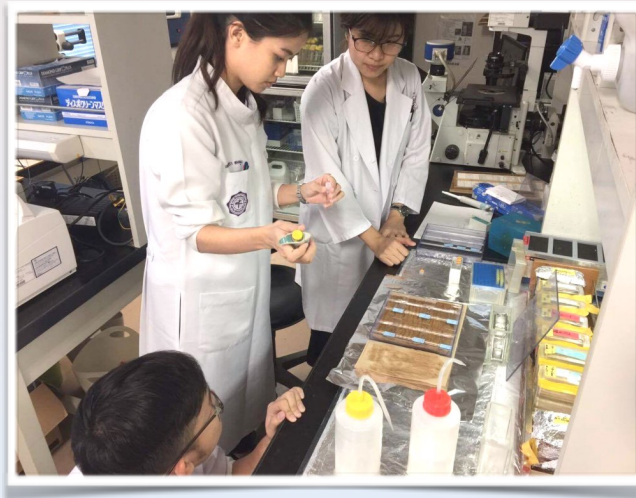
The room was consist of place for dissection the body and another side of room was for doing the reports. Then we went to visit a lecture room for dental students. The last room that we visited in the morning was a specimen room. In this room had animal skulls such as elephants, monkeys and horses. Furthermore, this room also had human tissues too. In the afternoon, we learnt to cut a paraffin block. We had cut about 20 sections for 10 slides. When the machine was hard to slide, we had to drop an oil lubricant.

To set a plane of paraffin section took long time to do and needed to have experiences. The knife that used to cut was very sharp. We had to be careful all the time while using and while changing new knife. It was very hard to do a slide. We must be patient to make a good slide.

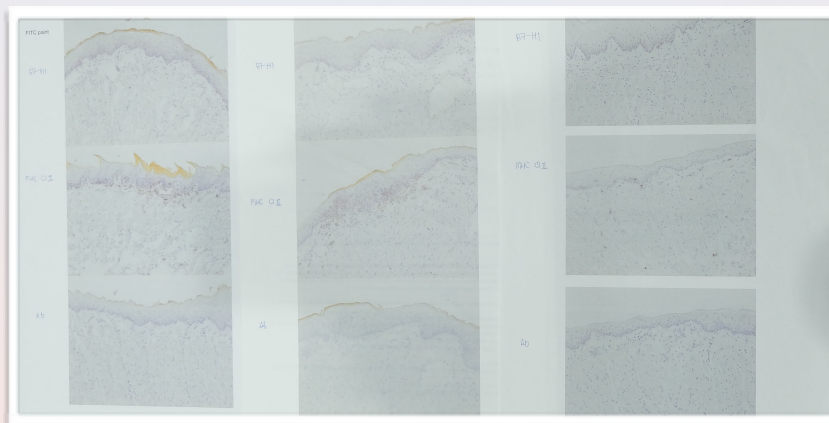
The next day, we were going to Department of maxillofacial anatomy to make slides that we had prepared yesterday. So today we started to stain slides by using HE staining. The procedure was consisted of many steps but not hard to do. After we had done the staining method, the next laboratory demonstrated was immunohistochemical staining. This procedure was hard to do and took time to leave it completed. So the next day, we came back to do the immunofluorescence slides from yesterday. we was using the avidin-biotin complex (ABC) method to make amplification of detection. Then we looked at slides by using microscope and took some photos of them from the computer's screen.



## DEPARTMENT OF MOLECULAR IMMUNOLOGY

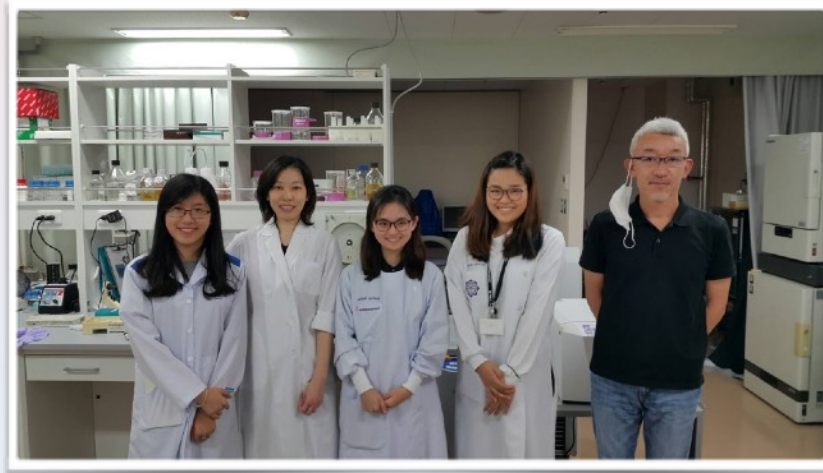


We went to molecular immunology department. We met Professor Miyuki Azuma. She introduced about the department, laboratory and we met the Ph.D. student from Thailand. She graduated from Srinakharinwirot university. Her name is Dr. Pookpui. So, after introducing the department, Professor Azuma explained about Co-signal molecules and gave us her latest published research article about Unique B7-H1 expression on masticatory mucosae in the oral cavity and trans-coinhibition by B7-H1-expressing keratinocytes regulating CD4<sup>+</sup> T cell-mediated mucosal tissue inflammation. Then, Professor Azuma took us to listen Keita practicing his research presentation for international symposium. He did well. After that, Dr. Pookpui briefed about this afternoon lab. We had to do immunohistochemical staining procedure of frozen sections by using VECTASTAIN ABC KIT. Frozen section was from mice tongue and apply the stain that induces inflammatory cells. Dr. Pookpui captured the photos of cells we stained by using camera in stereomicroscope then Dr. Pookpui printed it out and gave to all of us.





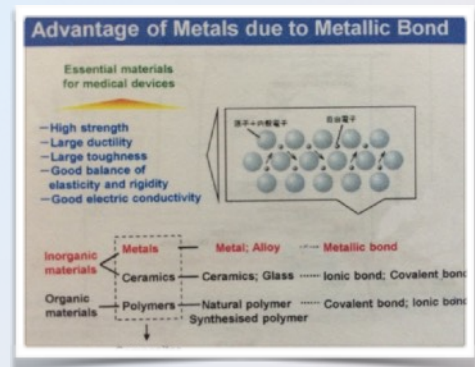
## DEPARTMENT OF BACTERIAL PATHOGENESIS



We went to Bacterial Pathogenesis department that locate on 8th floor of M&D building. In this department, Dr. Shiho Suzuki taught us a process of purification of DNA from sample by video and we can ask her any questions.

In this program, we isolated DNA of Escherichia coli (E. coli) step-by-step and using electrophoresis equipment to compare DNA and analyze them. It was very interesting.

All of us enjoyed this class very much because we did not use laboratory equipment for long time.



**Electrophoresis equipment**

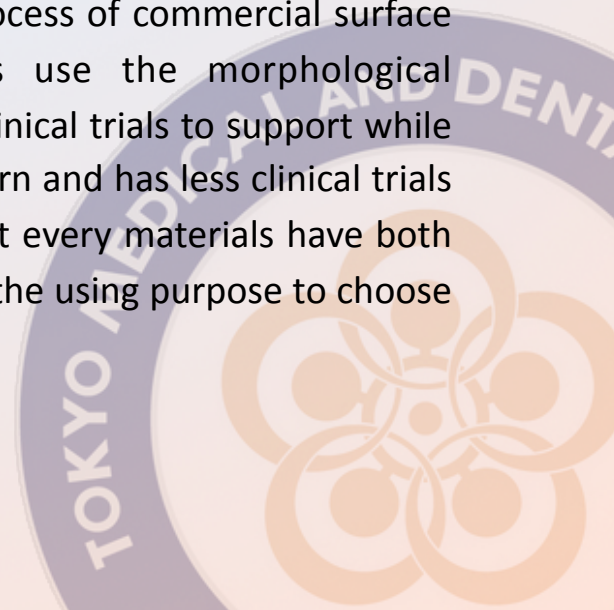
## **DEPARTMENT OF** **METALLIC BIOMATERIALS**

In department of metallic biomaterials of Institute of Biomaterials and Bioengineering (IBB) the first institute for biomaterials in Japan. Prof. Takao Hanawa taught us mainly about Titanium alloys vs Zirconia. Metal is commonly used in dentistry. The advantage of metals due to the metallic bond that provides large strength, elongation and fracture toughness. However, disadvantage of metal in dentistry also the metallic bond that creates metallic colour which decrease esthetic. Even though Zirconia shows inferior in strength and fracture toughness but the superior of its esthetic and less bacteria adhesion compare to metal make Zirconia widely used. To develop a novel abutment material with good esthetic and mechanical properties, M. Yu et al. showed the new process for producing white-colour oxide layer on Zr-14Nb alloy substrate using thermal oxidation process which caused the colour changed over time of oxidation. This process may be useful for the preparation of abutments and prostheses in dental implant treatment. The use of Titanium



alloy was also very popular. Ti-6Al-4V was replaced by Ti-6Al-7Nb which has less toxic elements. Ti-6Al-7Nb was developed its strengthening through grain refining using HPT and modified its surface by using many technique.

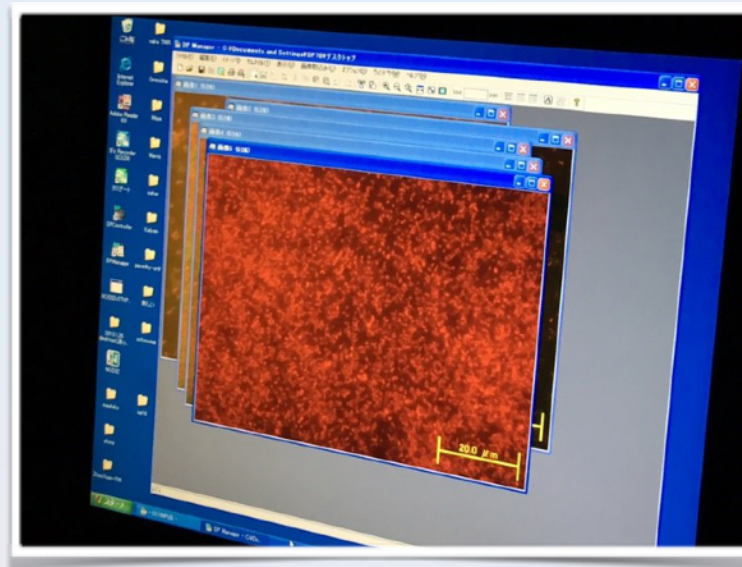
Nowadays, the process of commercial surface modification techniques use the morphological surface because of its success and has many clinical trials to support while the biochemical active surface was more modern and has less clinical trials to support. Finally, Prof. Hanawa taught us that every materials have both advantage and disadvantage, so it depends on the using purpose to choose the proper material for treatment.



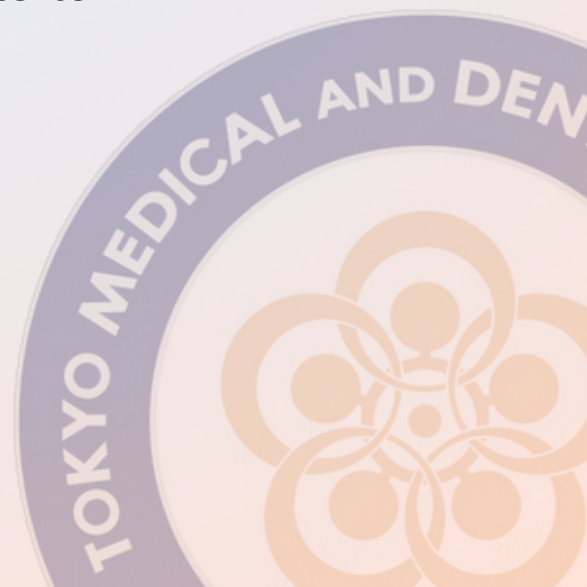


# CARIOLOGY AND OPERATIVE DENTISTRY

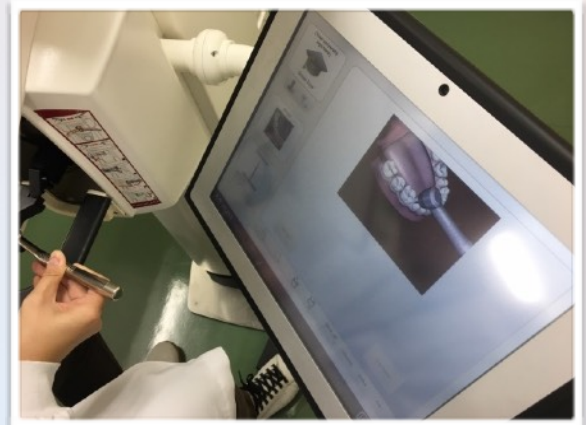
At first, Professor introduced about this department and told us about scope of this department research, for example, biofilm, remineralization and demineralization or tensile and shear bond strength. Then, we went to visit a clinic which is the same floor of endodontic clinic. When we visited the cariology and operative clinic, we learned about a filling material, hand instruments, adhesive system and scope of work in this department. Then, we had a brief lecture about biofilm by Dr. Matin. And in the end, we had a chance to see laboratory work such as gram stain, micro-tensile bond strength and immunofluorescence microscopy.



**Photo from immunofluorescence  
microscopy**



## DEPARTMENT OF GENERAL DENTISTRY



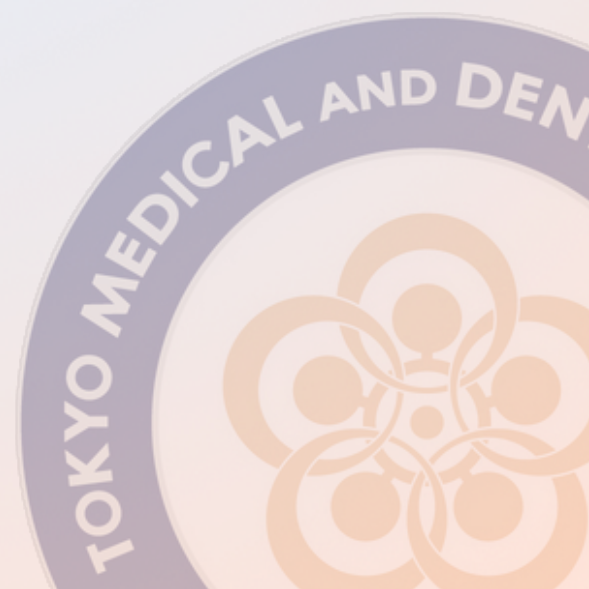
Department of general dentistry, which has general dentistry 1 clinic is the clinic for undergraduate student of TMDU and General Dentistry 2 Clinic is for the licensed dentist. we had an observation tour in General Dentistry Clinic and after that professor let me visited laboratory room which prepared for undergraduate student and for resident dentist. Moreover, we had the opportunity to see instructional for TMDU students about how to set up the dental clinic and visited clinical skill practicing laboratory which they have the simulation machine and phantom head for practice the clinical skill of student before they give some treatment to their patients.





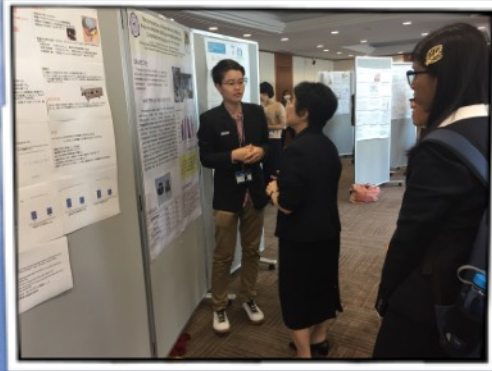
# HEALTH CARE ECONOMICS

The topic that we had learnt was "Economics in dental services: lesson from two cases". The case that professor taught us were from some research of TMDU's students. Also, those research data were collected from the population of Thailand and Indonesia. In the end of class we discussed with professor about Thailand, Japan and Indonesia health care system and economics which we have gained a lot of knowledge and learned something that we never know.





# RESEARCH DAY & INTERNATIONAL SYMPOSIUM





## RESEARCH DAY & INTERNATIONAL SYMPOSIUM

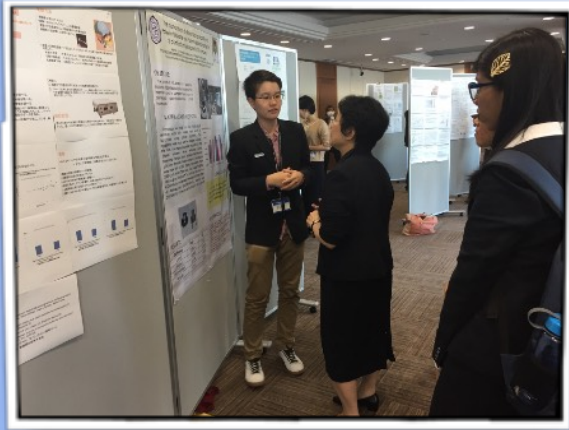


Today was a last day in TMDU. We had attended a research day. The first lecture was conducted by Professor Junji Tagami. It was about "Creating a future dentistry with the adhesive dentistry". He was talking about increasing high bond strength would be decreased gap formation in resin composite and suggested the way to reduce shrinkage of resin composite after restored by creating a pulpal floor with flowable resin composite.

The second lecture was conducted by Professor Kawaguchi. In the topic of "Global perspective of promoting oral health". She mentioned about population and compare of each countries.



## RESEARCH DAY & INTERNATIONAL SYMPOSIUM



After that, we were attended to poster viewing. The posters were from many of students. For instance, Japan, Thai, Indonesia and Vietnam. Many topics were interesting.

Then We came back to Akio Suzuki Memorial Hall to take part in oral presentation and international symposium. There were two research presenters from our university. Anusara Tongpoon, her research topic was “Comparison of fracture resistance of endodontically treated teeth with over flared root canal restored with glass fiber-reinforced composite post and customized polyethylene fiber-reinforced post”. And Saranya Serirukchutarangsee, her research topic was “Traffic light food label promotion to create food literacy among grade 5 students of Sainarmthip school, Bangkok”.





## RESEARCH DAY & INTERNATIONAL SYMPOSIUM



After that, Students expressed their feeling about the countries that they had visited. Finally, the closing ceremony, we had a little party and announcement of outstanding students on research.





# AWARD PRESENTATION & CLOSING CEREMONY



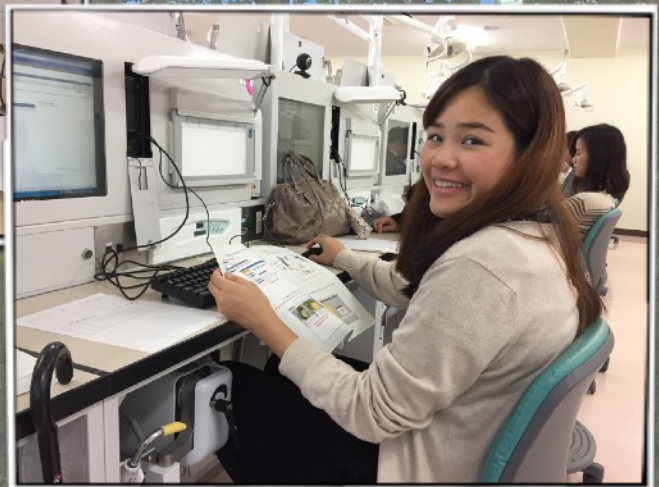
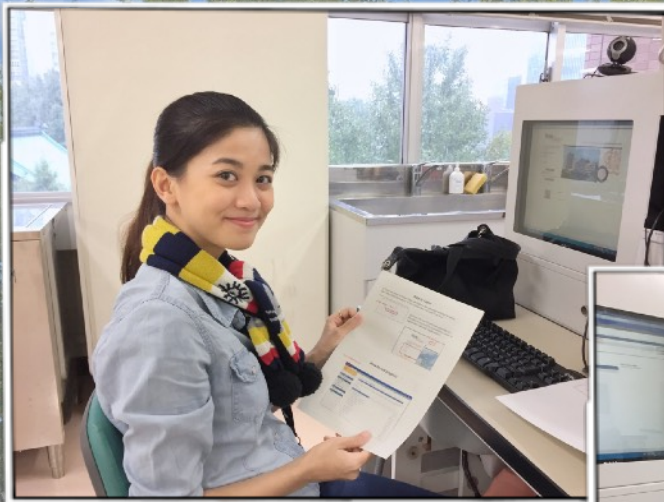
ND DENT

TMDU



# IT SIMULATION LEARNING

We had attended to IT simulation learning. This material was used to create situation when dentists were in the clinic. Before using this material, students must do example questions. The first part were about how to get the information from patient, how to make patient interview and history taking. Accordingly, next step for this part was oral examination and decision if radiograph was needed. Then, considered the diagnosis. After the diagnosis was made, treatment was the next step and students must think about dental management too.





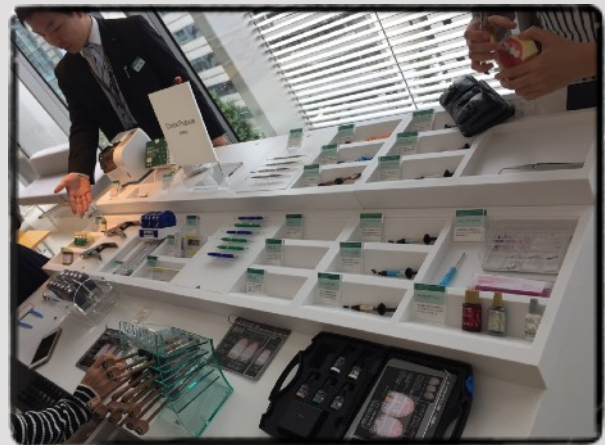
# DENTAL COMPANY VISIT

All the students were heading to GC corporate center. We were introduced about history of GC Corporate center and also visiting the center. In GC corporate center, there were many interesting things such as high technology dental chair, new material, new product and dental technology. GC was the company that made many types of dental material used in clinic. For example; impression material, filling material and equipment in clinic. After that, I handed on the material by painting a given tooth with colors designated.





# DENTAL COMPANY VISIT





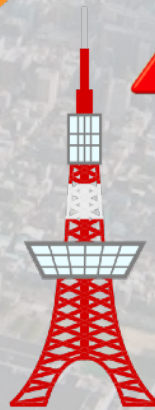
## DENTAL COMPANY VISIT



**'GC'**




# CULTURAL EXCHANGE AND EXPLORING TOKYO





# ⌘TOKYO TOWER⌘



We went to Tokyo tower in the evening after school. We went on the top floor with high speed elevator. At highest floor of Tokyo tower, we could see the striking view around Tokyo. We took many photos up there and at that time that we visited, it was a halloween festival. We could borrow some costumes and dress up to be everything we wanted. At first we thought that Tokyo Tower was a thing that built up for attractive place. However, after we finished watching the night view of Tokyo, we had a chance to know more about it.

We went down the tower and read some history about it. Tokyo Tower wasn't only just an beautiful attractive place to visit, it also a communications and observation tower in the Shiba-koen district of Minato, Tokyo. After that we enjoyed shopping some souvenirs from Tokyo Tower and walked around it.



# ✪ TOKYO TOWER ✪





# ⌘ SNOOPY MUSEUM TOKYO ⌘



Snoopy Museum Tokyo is located in Roppongi district. It's 7 minute walk from Tokyo Metro Roppongi Station. The Snoopy Museum Tokyo is a place to discover and learn about Charles M. Schulz, and enjoy the heart-warming world of Peanuts. Visitors will have the opportunity to view unique original cartoons from the collection of the Charles M. Schulz Museum.

Every six months, the Snoopy Museum will introduce new exhibitions curated by the Charles M. Schulz Museum. It is also a place to find original Peanuts merchandise made exclusively for the Snoopy Museum, as well as to unwind at "Cafe Blanket". Whether with family, friends, or just by yourself, the Snoopy Museum offers something fun for everyone

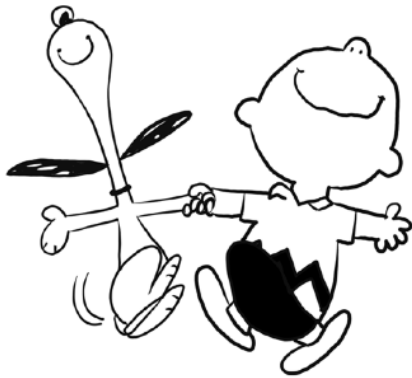


**SNOOPY  
MUSEUM  
TOKYO**





# ⌘ SNOOPY MUSEUM TOKYO ⌘



The second exhibition, "Hello again, Snoopy" started on October 8th, 2016. All exhibits from the first rotation have been replaced. It allows you to find out everything you want to know about Snoopy. It contains original comic strips, videos and vintage Snoopy products, with a total of almost 200 exhibited items.



Along with the exhibition change, our museum store and cafe also renewed its lineup.

There are various new original items, including brand new collaborated goods ready at the "BROWN'S STORE". You can enjoy a new menu reflecting the gallery's theme at "Cafe Blanket".





# ⌘ FUJI-Q HIGHLAND ⌘



On the second week, we visited Fuji-Q highland which is an amusement park in Fujiyoshida, Yamanashi by train. This amusement park is near the base of Mountain Fuji. We rode about 4 roller coaster which is Fujiyama, Eejanaika, Tondemina and Takabisha. Three of four roller coaster that we played, they are all in the world record. Fujiyama is the world's tallest record. Eejanaika is the roller coaster with the highest total number of spins in the world (about 14 times). Takabisha is a huge brand new roller coaster with "the steepest drop in the world at 121 degree". Because we went to Fuji-Q on Saturday, so It has a lot of people in this theme park and It was the reason that why we can played only 3 roller coaster.





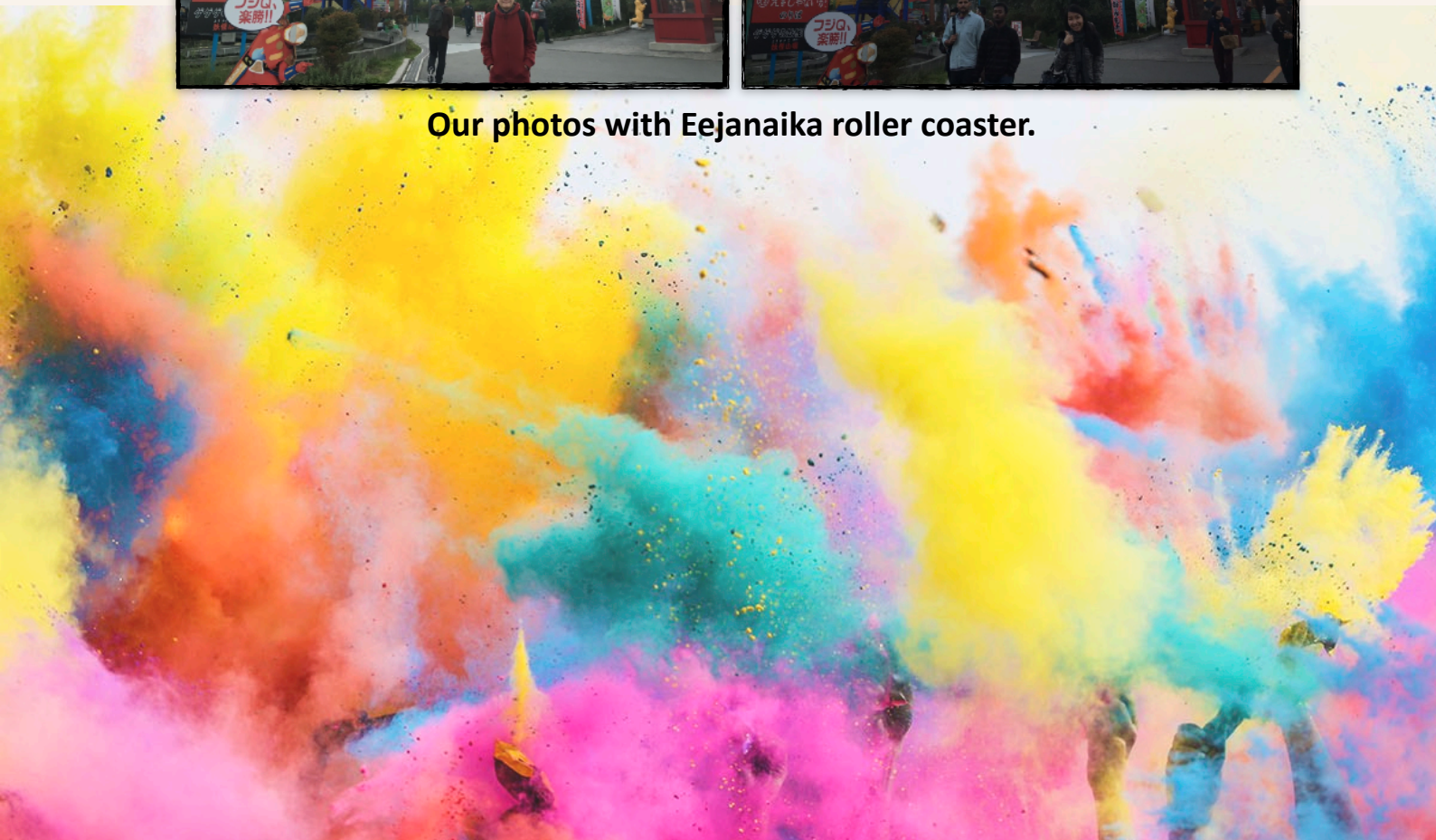
# ⊗ FUJI-Q HIGHLAND ⊗



We waited about 90-120 minutes for 1 ride. We played only 4 rides from all of the rides in this theme park, but we got a lot of feeling from all the rides such as fun, excited, enjoyment, happiness, scared and we screamed along we played all of these roller coasters. Moreover, on the way back to hotel, we found and bought the Glico ice-cream on vending machine that we never taste in Thailand before. Therefore, our trip to Fuji-Q highland gave us a lot of fun and good memory for us in the cultural exchange week.



**Our photos with Eejanaika roller coaster.**





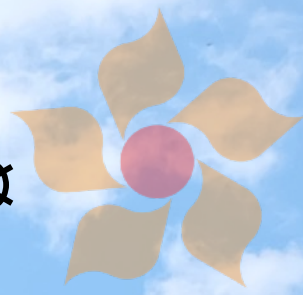
# ⊗ FUJI-Q HIGHLAND ⊗



Photo with Chulalongkorn friends,  
before we played Fujiyama.







## ⌘ NIKKO NATIONAL PARK ⌘

We went to “Nikko National Park” on Sunday late morning because one of our friend search a picture of Nikko from the internet and it was so fascinated so we immediately decided to go there. With the suddenly last decision and without any plan, we traveled by JR which was very expensive. It took 3 hours from Ueno station to Nikko station so we arrived there at 1 p.m. so we cannot cover all the area we would like to go.

Nikko National Park is located in the Kantō region, on the main island of Honshū in Japan. and was established in 1934. At the entrance of Nikko national park, there is a town called Nikko lies at the foot of Mt. Nyoho in the western part of Tochigi, and it is known as the home of the Futarasan Shrine, the Toshogu Shrine and Rinno-ji Temple. It is also home to the Nikko-suginamiki-kaido (Cedar Avenue of Nikko) which has been designated as a natural monument, and it is included as part of the Nikko National Park.







## ⌘ NIKKO NATIONAL PARK ⌘

These Nikko structures and the surrounding forest areas are registered as a UNESCO World Heritage site and an important cultural property where nature and buildings are united. Unfortunately, we did not have enough time so we decided to visit only the Kegon waterfall in the deeper area of the national park.

Kegon Waterfall is ranked as one of Japan's three most beautiful falls, along with Nachi Waterfall in Wakayama Prefecture and Fukuroda Waterfall with 100 meters tall.

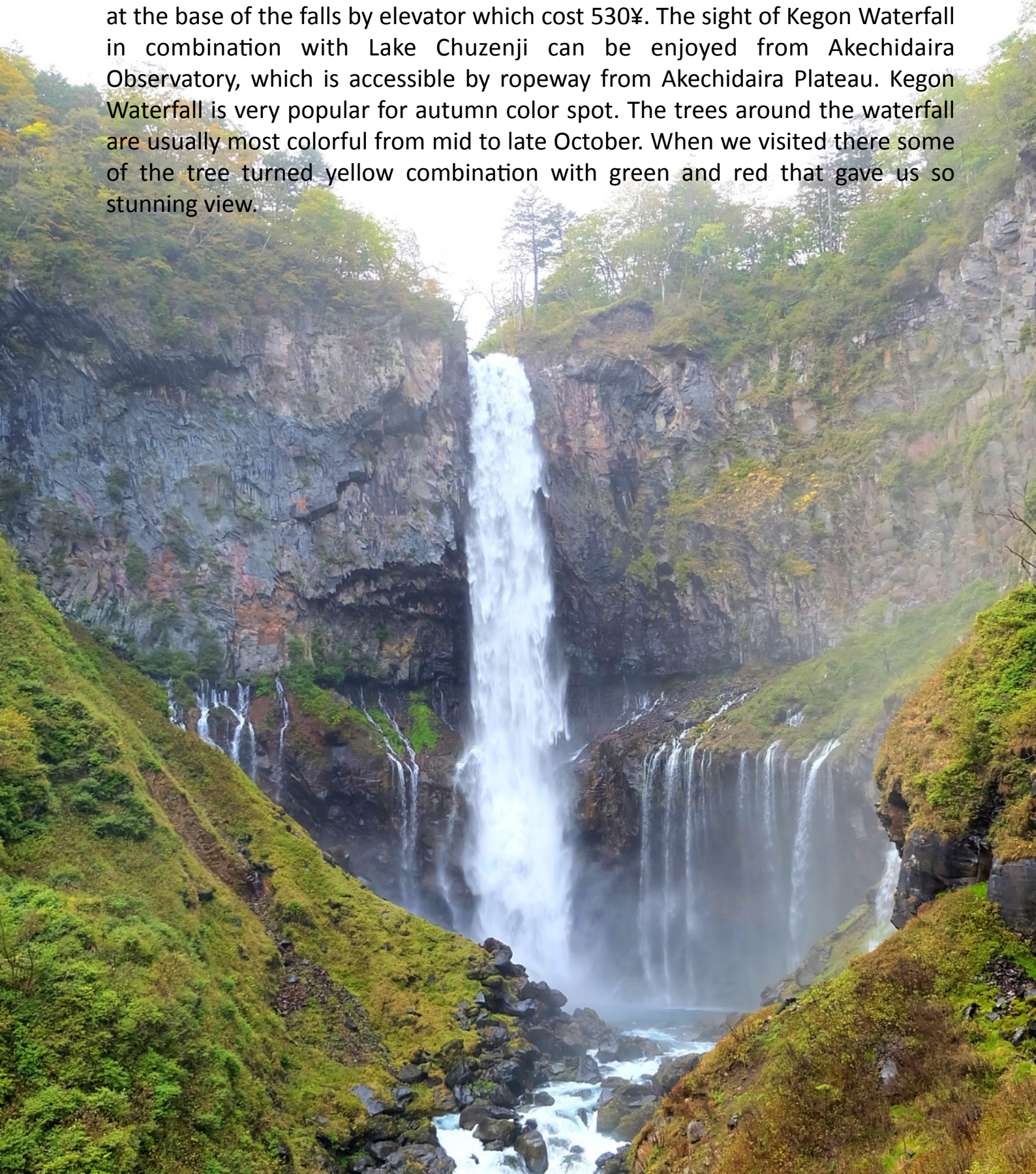




# ⌘ NIKKO NATIONAL PARK ⌘



Kegon Waterfall is the only exit for the waters of Lake Chuzenji. It can be seen from a free observation platform that is easily accessible on foot with only a 5-minutes walk from Chuzenji Onsen Bus Stop, as well as from a paid platform at the base of the falls by elevator which cost 530¥. The sight of Kegon Waterfall in combination with Lake Chuzenji can be enjoyed from Akechidaira Observatory, which is accessible by ropeway from Akechidaira Plateau. Kegon Waterfall is very popular for autumn color spot. The trees around the waterfall are usually most colorful from mid to late October. When we visited there some of the tree turned yellow combination with green and red that gave us so stunning view.







## ⌘ NIKKO NATIONAL PARK ⌘

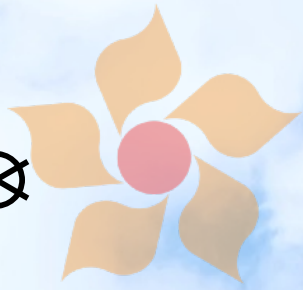


After that we visited the Chuzenji lake which located just a walking distance from the waterfall. Lake Chuzenji is a scenic lake in the mountains above the town of Nikko. It is located at the foot of Mount Nantai. We arrived at the lake about 4 p.m. and it was quite dark and cold, so we just took a few photos there and left. Chuzenjiko' shores are mostly undeveloped and forested except at the lake's eastern end where the small hot spring town of Chuzenjiko Onsen. In Chuzenjiko Onsen, there are many souvenir shops and restaurants so we took a break here having some foods and waited for the bus to get back to the train station. It was so crowded in bus way back to the Nikko station.





# ⌘ NIKKO NATIONAL PARK ⌘



The surrounding forest started to get dark all along the way until we reached the Nikko town again at 6 p.m., and then headed back to Tokyo. Luckily, with the help from one of TMDU student we bought return tickets from Tobu lines which cost much cheaper and faster. Finally, we arrived at our hotel about 9 p.m. full of impressiveness and exhaustion. Next time, we all hope we could visit Nikko again with more time to explore other interesting sights of Nikko.





# ⌘ KANDA MYOJIN SHRINE ⌘





# ⊗ UENO PARK ⊗





# ⌘ JAPANESE FOODS ⌘





