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TMDU's activities are reported through the open windows to the world.

The window represents TMDU as the Global base for its speedy exchange of information.

NATIONAL UNIVERSITY CORPORATION

TMDU

TOKYO MEDICAL AND DENTAL UNIVERSITY

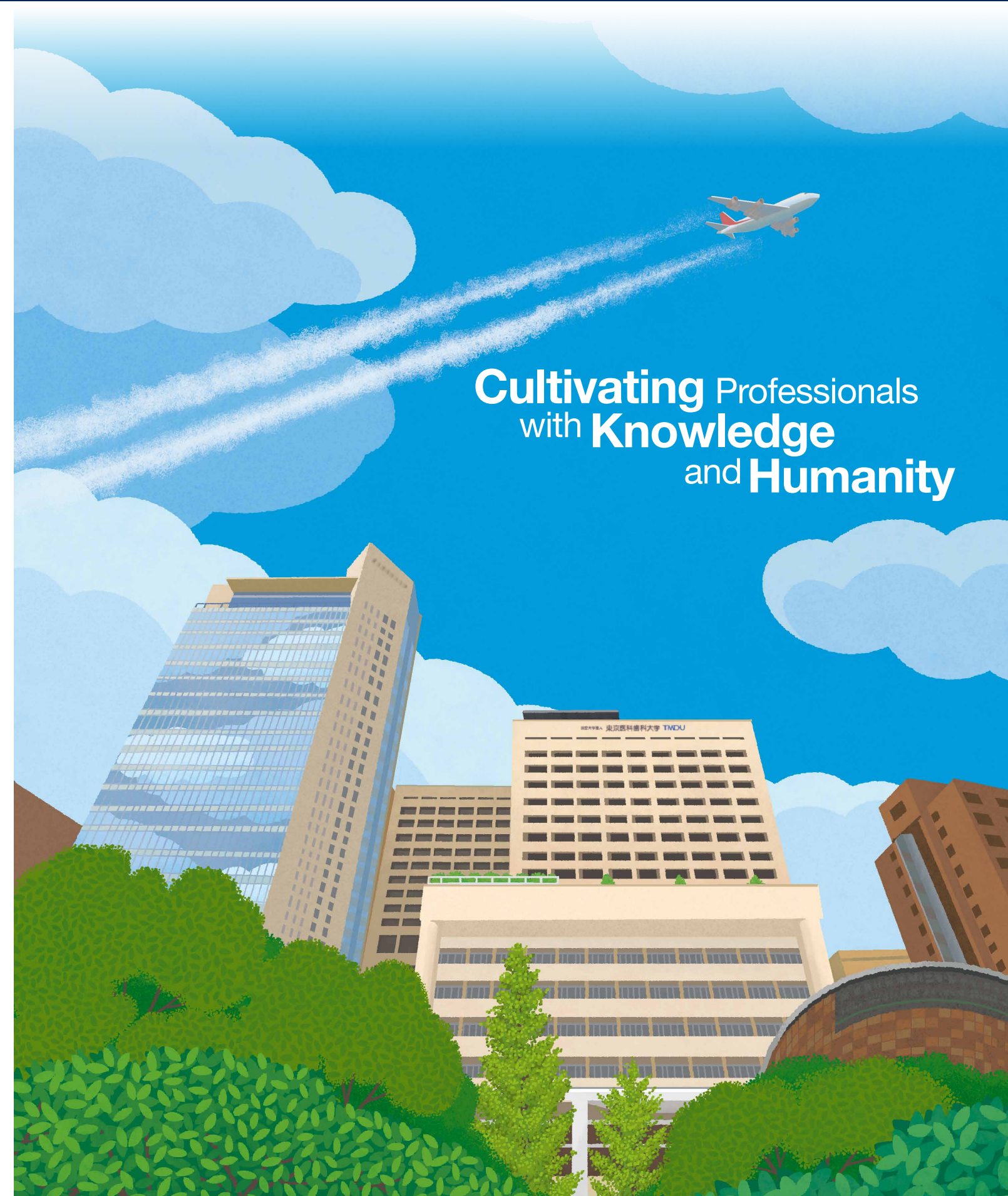
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TMDU

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Cultivating Professionals
with **Knowledge**
and **Humanity**



TDMU by the Numbers

NATIONAL UNIVERSITY CORPORATION TOKYO MEDICAL AND DENTAL UNIVERSITY

THE World University Rankings by Subject 2021 (Clinical, Pre-clinical & Health)



SOURCE: THE World University Ranking by Subject 2021

University Ranking by Subject



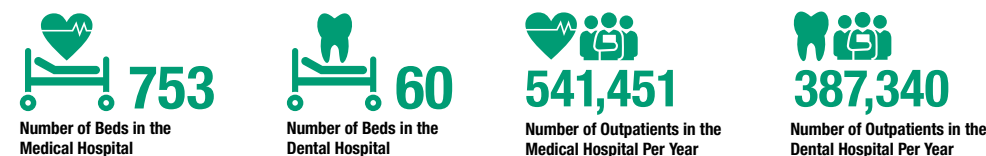
SOURCE: QS World University Ranking by Subject 2021

The World's Best Small Universities



SOURCE: The World's Best Small Universities 2020

University Hospitals Promoting Our Research



International Students in the Graduate Schools



*About 21% of graduate school students are International Students

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Vol.13, March 2021

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Our History and Background



Standing at the sacred birthplace of scholarship in Japan

Tokyo Medical and Dental University was established as a national medical and dental educational institution on October 12, 1928. Currently, TMDU is located in the Yushima / Shoheizaka area of Tokyo, which is considered sacred ground for scholarship and learning in Japan. As Japan's only comprehensive medical university and graduate school, TMDU has provided advanced medical treatment through a fusion of the medical and dental fields. It has worked to cultivate professionals with knowledge and humanity, thereby contributing to human health and the well-being of society. The "knowledge" referred to here includes learning, technology, and self-identity, while "humanity" means culture, sensitivity, and the ability to communicate openly and accept diversity.

We believe that the fusion of these elements paves the way to becoming a true "professional."

TOKYO — The Past and present

1800s



View of the Eastern Capital, Edo-Ochanomizu (woodblock by Shotei Hokuju)

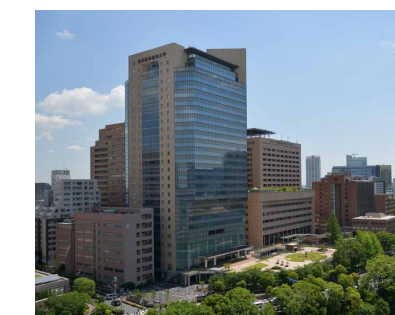
This landscape shows a view of Ochanomizu, where TMDU is located today. The buildings on the right-hand side, Yushima Seido and Shoheizaka School, were the center of scholarship since the 17th century during the Edo Period in Japan. Mt. Fuji can be seen in the far distance.

1930s



This photo depicts the Tokyo National School of Dentistry No.1 Hospital, in Yushima, circa 1930.

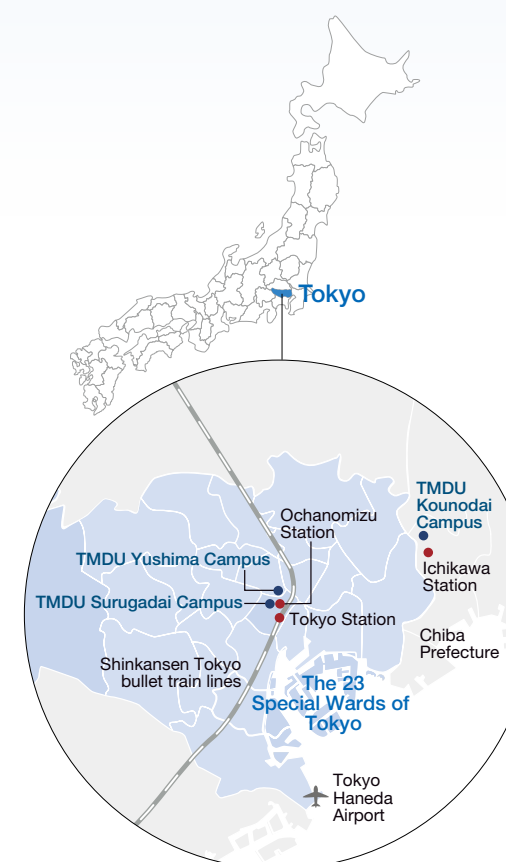
2020



Today, TMDU is still located in Ochanomizu/Yushima area where its predecessor, the Tokyo National School of Dentistry, had moved in 1930, two years after its founding. TMDU has become known as one of the most excellent research universities in Japan.

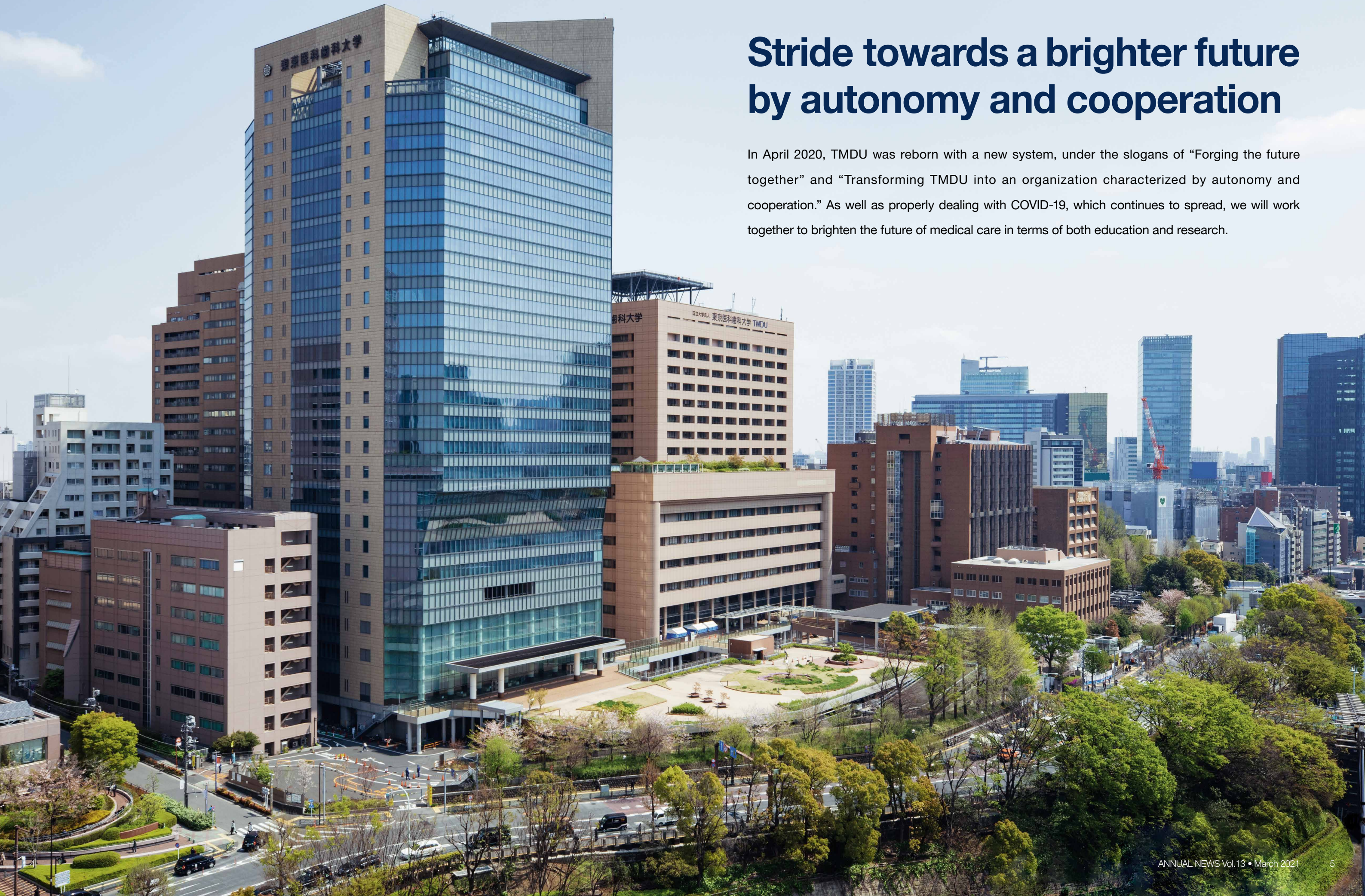


This monument at TMDU's Ochanomizu Gate commemorates the Birthplace of Modern Education. It honors Japan's modern education system, which was developed in this neighborhood after the Meiji Restoration, and marks TMDU's emergence at this site in 1930 as the world's first comprehensive medicaldental graduate school.



Stride towards a brighter future by autonomy and cooperation

In April 2020, TMDU was reborn with a new system, under the slogans of “Forging the future together” and “Transforming TMDU into an organization characterized by autonomy and cooperation.” As well as properly dealing with COVID-19, which continues to spread, we will work together to brighten the future of medical care in terms of both education and research.



Management Policy of TMDU

Yujiro Tanaka

President

PhD in Medicine, the president of TMDU. After graduating from the School of Medicine, Faculty of Medicine, TMDU in 1980, he completed the Doctoral Program in Internal Medicine at TMDU Graduate School of Medicine in 1985. His research areas are gastroenterology and medical education. After working as a professor at the Graduate School of Medical and Dental Sciences, the Director of the TMDU Medical Hospital, the Director of TMDU Sports Science Organization, he assumed his current position in April 2020.



It has been almost a year since I took office as the president of TMDU in April 2020. TMDU's vision of "Cultivating Professionals with Knowledge and Humanity, thereby Contributing to People's Well-being" will remain unchanged and continue to be the polestar of my administration. Complementing this vision will be my policy of "Forging the future together" which I introduced upon taking office as president. And now with our combined efforts to confront the ongoing challenges posed by COVID-19, I think this policy links well to our motto of "Protecting patients and colleagues from COVID-19."

As another major goal of the university we are dedicated to "creating an open, optimistic university characterized by autonomy and cooperation encompassing all the faculty

and staff." The phrase "autonomy and cooperation" represents the attitudes of individual faculty and staff members in creating a sense of unity, by cooperating with each other, while thinking and acting independently.

Since assuming office as the president, I have also emphasized the importance of diversity and inclusion, which are represented by the word "open." Based on these, my ultimate goal is to create an "optimistic university" where everyone involved can stay in a positive mindset. In addition, backed by the recent accreditation of our university as a Designated National University Corporation, we will deliver a new total healthcare model to society and the world. I think this is an important mission assigned to us today.



Tetsushi Furukawa

Executive Director /
Executive Vice President
(Research and University
Innovation)

TMDU will become a designated national university in 2022, and aim at becoming a comprehensive medical university that makes total healthcare services a reality. We will, therefore, implement inclusive measures with the combined efforts of the Faculty of Medicine and Faculty of Dentistry, as well as nursing, laboratory science, and oral health engineering sectors, and various research institutes. Passion is needed to carry out innovative research. I hope to nurture the culture and environment that allow researchers to realize their dreams with academic freedom and responsibilities, and link these to releasing research that has an impact on society.



Noriyuki Wakabayashi

Executive Director/
Executive Vice President
(Education)

In order to foster medical professionals desired by society and the world's leading researchers, we will verify teaching methods and enhance the education and research organization. We will also work on inter-university education, on-line education using virtual reality technology, international exchange through various programs, introduction of data science and AI education, etc. We will establish a system to constantly verify the contents of courseworks and teaching methods through curriculum innovation, and thereby will foster leaders who can drive the rapid evolution of medical care resulting from the information technology innovation.



Atsushi Ohkawa

Executive Director/
Executive Vice President
(Hospital Administration)

In terms of medical treatment, we will spend several years promoting the medical-dentistry integration, along with the construction of the Functional Enhancement Building (hereafter, "FEB"). The Tokyo Medical and Dental University Hospital will be launched in October 2021 by integrating two hospitals. By installing an outstanding treatment setup focusing on severe and refractory diseases as well as oral health, we aim to establish a system that offers truly total healthcare services. The ER and ICU will be transferred to the FEB, which will begin operation in 2023. Highly functional operating rooms will also be added. Moving forward, we will engage in university-wide projects such as integration of medical information systems and development of Institutional Research to increase operational efficiency and promote big data-based research.



Akinori Kimura

Executive Director /
Executive Vice President
(Goals and Evaluation)

FY2021 will be the final year of our third midterm goal and plan phase. The results of our activities during this period will be evaluated. Moreover, we will be entering the fourth midterm goal and plan phase, beginning FY2022—that is when TMDU will become a designated national university. To fulfill our missions of cultivating "Professionals with Knowledge and Humanity" and realizing 'Total Healthcare', we will establish medium-term goals that contribute to this realization, announce our medium-term plans along with achievement evaluation indices, and respond to the trust that people have placed in us.

Aiming even higher, now that TMDU is a Designated National University Corporation

In October 2020, TMDU was designated by the Ministry of Education, Culture, Sports, Science and Technology as a “Designated National University Corporation.” As a national university that already enjoys a competitive edge not just in Japan but also worldwide, what exactly will this official designation mean and what advantages will it confer on our university? Furthermore, what new directions will this designation enable TMDU to take going forward? President Yujiro Tanaka elaborates on these points.

What are the Designated National University Corporations?

The top 10 ranked superior universities for each of the following three aspects are designated.

Conditions for designation	Research capability	Collaboration with society	International cooperation
	A high number of newly adopted programs for grant-in-aid for scientific research, etc.	High percentages of revenues from commissioned or joint research, and from donations, etc.	High numbers of international students and Japanese students dispatched to universities in other countries, a high number of internationally co-authored papers, etc.

What is Designated National University Corporation capable of:

■ The relaxation of the regulations permits strengthening the financial base and research capability, and securing human resources.

Examples

Relaxation of the asset utilization standards

▶ This permits increasing funds of the university by highly profitable investments and bond issue.

Relaxation of the salary standards

▶ This permits hiring world-class researchers at a high salary.

■ It becomes possible to **make recommendations for the relaxation of the regulations and policy making** to improve the level of overall national universities.

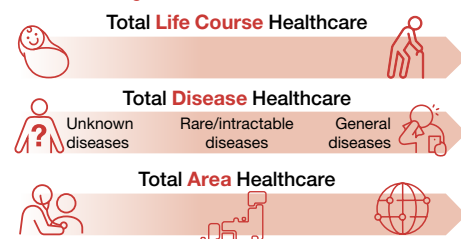
The Designated National University Corporation serves as the driving force behind national university reforms for improving the level of overall national universities and competing with globally renowned universities.

What TMDU aims for:

To realize “**total healthcare**” for human beings on a global scale, beyond generations

Total healthcare

To deliver healthy daily lives to people around the world, by providing them with medical care for all types of diseases throughout their lives.



Research capability	<ul style="list-style-type: none"> Promotion of research on priority research areas Formation of a hub for medical data science
Collaboration with society	<ul style="list-style-type: none"> Strengthening industry-academia cooperation Strengthening collaboration with municipal governments and ministries/agencies
Fostering and securing human resources	<ul style="list-style-type: none"> Fostering clinician scientists Fostering medical data scientists
International cooperation	<ul style="list-style-type: none"> Strengthening cooperation with universities around the world Supporting young researchers for short- to mid-term stays abroad
Financial base	<ul style="list-style-type: none"> Strengthening the system for raising donations Expansion into the data business field

—TMDU’s designation as a designated national university corporation means that it is expected to play a larger role as a promoter of national university reforms.

Tanaka We have embraced our official designation as a high endorsement from the state of the quality of our institution. I feel that this designation carries enormous significance and merit for us, not only in the sense that it reflects social trust but also that it clarifies the direction the university must take, going forward, including with respect to our education and research. Ultimately, TMDU must aim for the realization of total healthcare across the globe, transcending the generations, and showing society and the world the model that should be followed. Scale-wise, we are the Japan’s largest university in which the Faculty of Medicine and Faculty of Dentistry coexist. Thus, it can be said that offering total healthcare is our social mission. The official designation has simply reconfirmed this fact. At the same time, I would also look at it as support for our future developments and activities.

—Specifically, which areas will you focus on to realize total healthcare?

Tanaka We will implement measures, using education, research, and medicine as the pillars. Regarding education, discussions were held across the university on the type of professional we should foster here, and the unanimous conclusion was to educate and foster researchers with clinical perspectives (clinician scientists) and clinicians capable of practicing medicine with a scientific perspective (scientific clinicians). The truth is that conducting new research while engaging in specialized medicine is difficult both in terms of time and labor—which means that establishing an environment in which the two can coexist is an utmost priority, in my opinion. We will aim to create an environment that encourages both research and clinical practice—for example, by offering financial support and providing support for students studying abroad.

Our university has signed the Charter for the Union of Four Universities with Tokyo University of Foreign Studies, Tokyo Institute of Technology, and Hitotsubashi University. Since physical distances can now be overcome by virtual means, it has become possible to conduct joint classes and discussions. I strongly urge students to make use of these opportunities and develop the ability to capture the essence of things and empathize with others while acquiring a wide range of perspectives. One of the reasons

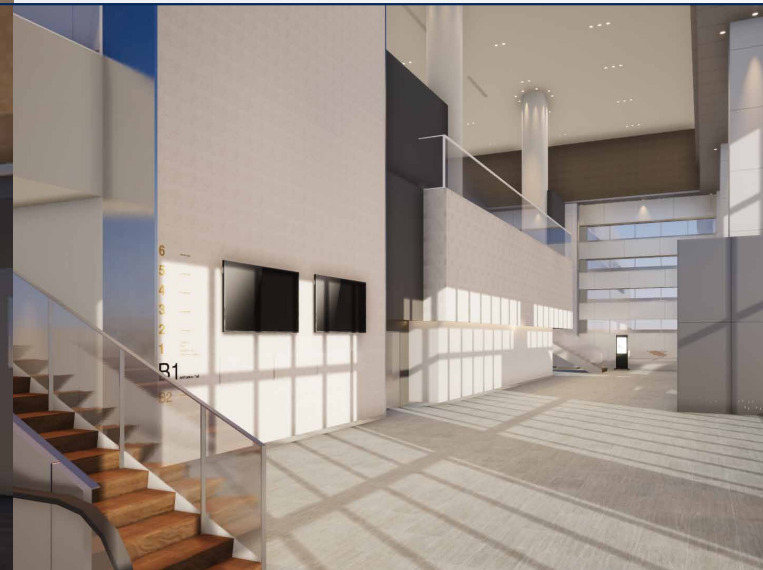


we decided to proactively tackle COVID-19 cases was to develop this ability to empathize with others. We also felt that the attitude of dealing with social problems with empathy would act as a message for the students.

—What about research and medical practice, then?

Tanaka Boosting research and medical practice is essential for realizing total healthcare. When it comes to research, freedom of learning (academic freedom) is the most important. There is a need to create an environment that enables free research in diverse areas, without overly concentrating on specific fields. The idea is to invest funds and human resources into areas that are maturing and growing, and to ensure the expansion of areas that are expected to develop and grow in the future. Moreover, we will emphasize the perspective that considers “giving back to society,” such as promoting the actual use of research results and findings in society and implementing policy proposals for the same. As for medical practice, we need to recognize that this is an area first and foremost for realizing total healthcare. To ensure the total healthcare of an individual, it is recommended to pay close attention to him/her, right from before birth till death.

Although this is rare for a university hospital, we operate a palliative care ward and are capable of providing grief care. Therefore, we are expected, by society as well, to realize total healthcare that includes caring for the bereaved. We will also make use of the advantages that come with being a university hospital, of having comprehensive medical departments and physicians who provide specialized healthcare, and unveil specialized medical practices based on comprehensive treatment. Through medical practices such as these, we hope to show society what tomorrow’s medical treatment will be like. While constantly asking ourselves what truly necessary medicine is all about, we are committed to do our best with cooperation from all our staff members.



A new symbol for a university that is open to the regional community as well as the world

Establishment of the Functional Enhancement Building

In FY2020, TMDU began the construction of the Functional Enhancement Building (hereafter, “FEB”). The construction, which is now underway and expected to be completed in FY2022, is based on the Campus Master Plan devised in 2016, which focuses primarily on the campus’ spatial aspects. President Yujiro Tanaka talks about the roles and significance of the FEB, which will become a symbol of the new university.

Adoption of the seismic isolation structure to make the FEB the hub of disaster medical care

—The FEB is being constructed under the Infrastructure Longevity Plan, which is an action plan based on the Campus Master Plan. What sort of characteristics does it have, as a building?

Tanaka The FEB will have seven floors aboveground and two underground. However, its structure differs from the existing facilities on our campus. Our existing buildings have an earthquake-resistant structure, not a seismic isolation structure. Earthquake resistance is a function that helps a building withstand an

earthquake and prevents it from collapsing. Tremors due to earthquakes, however, pose a risk of damage to medical devices; that is where the seismic isolation structure comes into play—it detaches a building from the ground, ensuring that the building does not feel the tremors directly, thus preventing damage to facilities. We also plan to set up an in-house power generation system within the building, and install a server for a medical information system. These will make the building an independent, self-supporting facility. Even if the functions of the main hospital wards and outpatient wards are suspended during a disaster, this building will continue to function, and the Business Continuity Plan (BCP) will be maintained. In other words, the FEB

is a facility that has the potential to become the hub of disaster medical care.

If it were to become the hub of disaster medical care, it would house the surgical center, intensive treatment units (ICU), emergency medical rooms (ER), high care units (advanced treatment rooms), and trauma and acute critical care unit. The recent actions we took to counter COVID-19 made me keenly aware of the fact that accommodating patients with serious diseases is a major mission of a university hospital. The fact that we can provide such treatment at cutting-edge facilities is our strength and advantage, in my opinion.

—I understand that, as one of the roles of the FEB, you are contemplating integrating the Medical Hospital and the Dental Hospital into one. Can you tell us something about that?

Tanaka Our aim is to further reinforce our function as a hospital while working to integrate the two entities by realizing a smoother line of flow between them. To do this, we needed to refurbish the hospitals completely, and hence, the FEB became part of the plan. The FEB is being constructed to complete the first step of the hospital reorganization plan, with a long-term vision that will be implemented in phases.

To become the point of contact for the regional community as well as the world, as the symbol of an open university

—The FEB will also serve as a place that is “open to the regional community as well as the world,” which is the aim of the Campus Master Plan.

Tanaka The FEB is situated right in front of the JR and Tokyo Metro Ochanomizu Station. So, we regard it like

an entrance. The second basement level is directly connected to the Tokyo Metro Ochanomizu Station’s platform, so you can reach the entrance of Medical Building A directly, using an escalator or elevator.

In the Hall on the ground level, we will open a café and a gallery. Our plan is to make it an open space that is not only be used by visitors to the university and hospitals but also serves as a casual meeting place for train commuters and passers-by. I believe that this will also achieve my goal of establishing an open, energetic university. Instead of a design in which a university or hospital is the first thing you see on entering, I hope to make it a space where facilities appear in a flow-like gradation. My goal is to make the FEB a new symbol of our university and a point of contact between the regional community or the world, and TMDU.



The construction of the Functional Enhancement Building has been launched.



A completion image of the Functional Enhancement Building

Growing the TMDU Network in Latin American Countries; Academic, Educational and Clinical Collaborations

Latin American Collaborative Research Center, Tokyo Medical and Dental University, Santiago, Chile

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In 1968, Professor Tadashige Murakami, former professor of surgery of TMDU, visited Chile to lecture on gastric cancer. This was the start of a long relationship between TMDU and Chile. In the 1970s, the Japan International Cooperation Agency (JICA) launched a project for the early detection of gastric cancer to reduce the high mortality rate of this type of cancer. The Gastric Cancer Center in Santiago was founded in 1977 at the Hospital Paula Jaraquemada (now the Hospital Clinico San Borja Arriaran), and this center has long played a major role in the project. TMDU has dispatched numerous experts there to support the prevention of gastric cancer. The Gastric Cancer Center was later renamed to the Chilean-Japanese Institute for Digestive Diseases, and it still contributes to maintaining the health of the Chilean people.

Colorectal Cancer Screening in Chile, Supported by TMDU

In Chile, mortality from colorectal cancer has been increasing in the last two decades, and thus the need for colorectal cancer screening has grown rapidly. Approval was given in 2009 to start a screening project based on a proposal from Dr. Lopez of the Clinica Las Condes (CLC), one of the biggest and most advanced hospitals in Chile. Due to the long history between TMDU and Chile, our university was invited to supervise the project. In 2009, the Ministry of Health of Chile, CLC, and TMDU signed a collaboration agreement concerning colorectal cancer screening (Fig. 1), and the Latin American Collaborative Research Center (LACRC) was established at CLC in 2010 (Fig. 2). Over the years, TMDU has continuously sent experts in the fields of pathology, endoscopy, and research to LACRC. Since 2012, the Prevention Project for Neoplasia of Colon and Rectum (PRENEC) has been implemented, using the Japanese method with an immunological fecal occult blood test and colonoscopy.

The Chilean-Japanese Institute for Digestive Diseases at the Hospital San Borja Arriaran is the main place of PRENEC in Santiago. The institute's endoscopy unit has been redesigned for PRENEC, with extensive support from the Japanese Embassy in Chile.

The institute serves as a training center for endoscopy. From October 2013 to March 2020, a total of 26 Latin American doctors have taken a training course in endoscopy, acquiring the skills required for cancer screening (Fig. 3).



Collaboration agreement concerning colorectal cancer screening between the Ministry of Health of Chile, CLC and TMDU



Signing ceremony of the memorandum of understanding between CLC and TMDU for the establishment of LACRC



Colonoscopy training for Latin American doctors

PRENEC, which started in three cities: Santiago, Valparaiso and Punta Arenas, has now expanded to eight major cities: in addition to the above three cities, Coquimbo, Osorno, Valdivia, Concepcion and Antofagasta.

From June 2012 to March 2019, 30860 asymptomatic participants registered with PRENEC. A total of 266 colorectal cancers were detected, and 194 lesions, 73% of which were cured by endoscopic treatment.

PRENEC and supportive activities by TMDU have recognized as essential aspects of Chilean healthcare. In the future, it is expected that PRENEC will be expanded throughout Chile and contribute to the reduction of colorectal cancer mortality.

In December 2017, TMDU's ex-president Takashi Ohyama received the Order of Bernardo O'Higgins from the Government of Chile in appreciation of our contribution to Chile (Fig. 4).



Honoring ceremony of the Order of Bernardo O'Higgins from the Government of Chile for TMDU's ex-president Takashi Ohyama

Spreading Network of TMDU-PRENEC in Latin-America

TMDU has also tried to promote the same screening system in other Latin-American counties in association with JICA and the International Cooperation Agency of Chile (AGCI). In August 2015, the First International Training Course for Colorectal Cancer Screening took place in Santiago. TMDU experts and LACRC doctors participated in the course as instructors and gave lectures to doctors from Ecuador and Colombia. In 2016 and 2017, the same training course was held in Santiago for medical professionals from Bolivia, Paraguay and Peru.

In Paraguay, the PRENEC pilot study has been completed and preparations to launch PRENEC's full-scale operation are underway.

Although Ecuador was unable to join the PRENEC network due to the government's intention, colorectal cancer screening has already begun under its own program.

Academic Activities

The results obtained with PRENEC have been reported in various medical journals by Chilean doctors or doctors who were once stationed at LACRC. More reports related to PRENEC results are in progress for future publication.

Endosur, which was an international symposium on digestive disease, has been held in Santiago every two years with TMDU support. Professors from TMDU and LACRC doctors have participated in this symposium and made various presentations (Fig. 5). In addition, LACRC doctors have frequently participated in other international conferences in Chile and in neighboring countries.

TMDU operates the Project Semester Program, appointing medical

students to overseas institutions. Between 2010 - 2014 and 2017 - 2019, two to six medical students from TMDU a year were attached to the laboratories in the University of Chile or CLC, where they conducted advanced research in collaboration with the local doctors.

LACRC Members

LACRC has been staffed by experts from the pathology, endoscopy and molecular biology fields of TMDU. From 2010 to 2020, LACRC has been operated by nine TMDU doctors; as pathologists, Dr. Takashi Ito (April 2010 to March 2012) and Dr. Hiroshi Kawachi (March 2012 to March 2015); as endoscopists, Dr. Hiroyuki Uetake (July and August 2010), Dr. Tetsuro Nishikage (January 2011 to January 2012), Dr. Koji Tanaka (January 2012 to April 2013), Dr. Takuya Okada (April 2013 to March 2015), Dr. Masahiro Tsubaki (October 2014 to September 2015) and Dr. Tomoyuki Odagaki (November 2014 to March 2020); and Dr. Maki Kobayashi as a molecular biologist (July 2012 to March 2015).

LACRC is currently operating in the headquarters of TMDU by Prof. Noriyuki Wakabayashi (Vice President), Prof. Masanobu Kitagawa (Department of Comprehensive Pathology), and other staff.

COVID-19 Pandemic in Chile

The pandemic greatly impacted Chile. In March 2020, the first cases of COVID-19 were reported. After that, the number of people infected with COVID-19 increased sharply and quarantines were established locally in various cities and neighborhoods. However, in May 2020, the whole city of Santiago was put under mandatory quarantine due to a further increase in the number of cases and similar measures were extended to most of the largest cities in Chile.

Instead of dispatching doctors to Chile to be stationed on a long-term basis from April 2020 and to support PRENEC and Endosur activities, TMDU planned to dispatch TMDU experts to Chile several times a year but for short periods of 1-2 months. However, PRENEC and other activities have been suspended since mid-March 2020 and have not been reopened yet (at January 2021). All business trips from TMDU have, of course, been postponed.

We hope that the COVID-19 pandemic will pass and that TMDU's activities in Chile will resume as soon as possible.



A commemorative photo with TMDU's professors and LACRC staff in Endosur 2018

Activities for Strengthening Relationships between TMDU and Thai Universities

CU-TMDU Research and Education Collaboration Center, Thailand

Keiichi Akita

PhD
Professor, Clinical Anatomy, TMDU
Director of Satellite Office in Thailand

Zoom Discussion Café between TMDU & Affiliated Universities in Thailand!

Coordinated with affiliated universities in and beyond Japan, Discussion Café (DCafé) events are a great opportunity for students from various cultural and educational backgrounds to come together and delve into complex global health issues in English.

With the COVID-19 pandemic precluding international study and overseas travel in general, this time DCafé used the web conferencing system Zoom to network with students overseas with a range of cultural and disciplinary perspectives. As web conferencing effectively removes the barrier of distance, Thailand's Mahidol University, with which we have an Academic Collaboration Agreement, was selected for the first event because of our close student and researcher exchange

relationship (Fig. 1).

On June 9, 2020, the first two-hour DCafé kicked off with 15 TMDU and 15 Mahidol University medical students in their second through sixth years (Fig. 2). After introducing their universities and themselves, the students split into mixed groups of six members each to examine three COVID-19 response topics. Lecturers from both universities listened with interest to the lively student-led group discussions, presentations of results, and general debates.

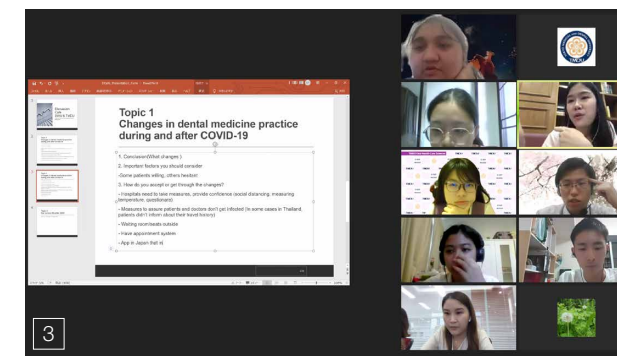
Following the success of this event, the second online DCafé was held on August 26, 2020, between 20 TMDU students from the School of Dentistry, School of Oral Health Care Sciences, School of Medicine, School of Health Care Sciences and 25 dental students from Srinakharinwirot University, with whom we also have a long history of international exchange and an



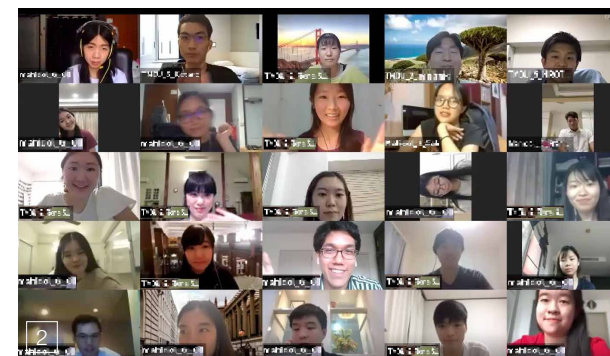
Advisor and student of the JDP with Chulalongkorn University at the TMDU laboratory



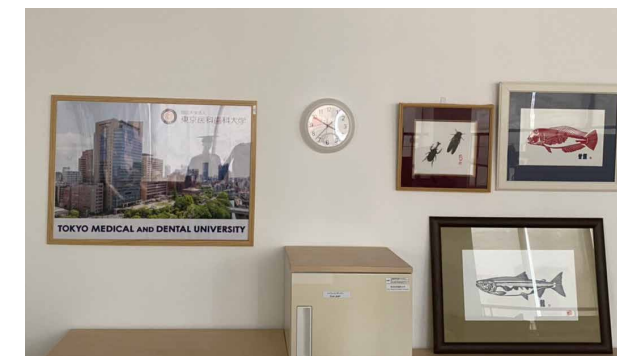
Web conferencing in TMDU x Mahidol University Discussion Café



Group discussion in TMDU x Srinakharinwirot University Discussion Café



Commemorative Photo of TMDU x Mahidol University Discussion Café



Renewed CU-TMDU Research and Education Collaboration Center

Academic Collaboration Agreement.

During the event, students were again split into mixed groups after self-introductions to discuss two COVID-19 related topics: "Changes in dental medicine practice during and after COVID-19" and "Our school life after 2020." Faculties from both universities also joined the event (Fig.3).

These were undoubtedly very stimulating experiences for all the students involved. One participating student challenged herself to form her own opinions based on information from the various aspects presented and discussed during DCafé. Another student explained that, although they found the event difficult, having discussions with a highly diverse range of students was extremely rewarding. These DCafé events also contribute to building connections between students participating from both universities, some of whom continue to keep contact.

Even amidst a global pandemic, the success of this DCafé event, was thanks to advances in telecommunications technology and the long history of exchange between our universities, along with the students' passion and commitment to resolving international issues through cross-cultural collaboration. It was also an extremely valuable experience planning further exchanges with universities in Japan and overseas at a time when face-to-face meetings were prohibited. We hope these DCafé events will be expanded to include participants from all over the world in the near future!

Joint degree program with Chulalongkorn University and CU-TMDU Research and Education Collaboration Center

In the joint degree program with Chulalongkorn University, three students came to Japan in November 2020 and will conduct research at the Departments of Orthodontic Science and Maxillofacial Orthognathics for one year. The timing of coming to Japan was postponed because of COVID-19. So, before coming to Japan, CU supervised the students directly, and TMDU held online meetings with them so that the students could start their research smoothly.

In the CU-TMDU Research and Education Collaboration Center, some furniture was renewed and a TMDU poster was put up for better use. Now the center is used for the monthly teleconference with us or the entrance exam.

Research Partnership between TMDU and Noguchi Memorial Institute for Medical Research, University of Ghana

Ghana-Tokyo Medical and Dental University Research Collaboration Center

Toshihiko SUZUKI

PhD
Professor, Department of Bacterial Pathogenesis, Infection and Host Response, TMDU
Leader of TMDU-AMED research project

Overview of the TMDU-NMIMR collaborative research

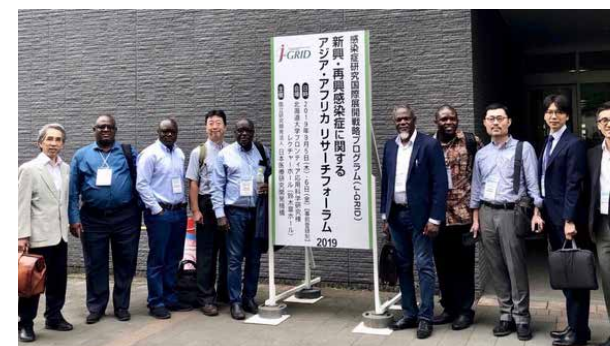
Dr. Hideyo Noguchi, the eminent Japanese microbiologist, died of yellow fever in 1928 in Ghana. In commemoration of Dr. Noguchi's achievements, the Japanese government established the Noguchi Memorial Institute of Medical Research (NMIMR) as a symbolic research facility for medical support for Africa. For the past 40 years, NMIMR has been conducting activities aimed at controlling local infectious diseases through joint research with Japanese research institutes (universities and research institutes). The collaborative research project with NMIMR has been ongoing for 12 years since 2008 through the Japan Initiative for Global Research Network on Infectious Diseases (J-GRID) project in Ghana (1st to 3rd phase), which was supported by the Japanese Ministry of Education, Culture, Sports, Science and Technology (MEXT). Our colleague Dr. Takaya HAYASHI, project lecturer at TMDU, joined the project from FY2017 and started to work with research fellows in NMIMR. Dr. Yen Hai DOAN, project lecturer at TMDU, also joined the project from FY2019.

In FY2020, our collaborative research was started in the Japan Program for Infectious Diseases Research and Infrastructure for research on emerging and re-emerging infectious diseases with the support of the Japan Agency for Medical Research and Development (AMED). Currently, ten Japanese and fifteen Ghanaian researchers are participating in the project, cooperating on multiple research projects.

The main focus of the AMED project is to promote innovative research collaboration with researcher counterparts for collecting information about pathogens in endemic areas, evaluating vaccine efficacy, and identifying the drug resistance of pathogens. Under this concept, our AMED project conducts the following four research projects: (1) the surveillance and isolation of dengue viruses prevalent in Ghana; (2) the genetic analysis of rotavirus, which is the causative agent of acute diarrhea; (3) the identification of antibiotic-resistant bacteria; and (4) the study of life stage and transmission of Buruli-ulcer-causing bacteria. To conduct research more efficiently, TMDU has invited Professor Kazuhiko Katayama of Kitasato University, an expert on viral



Noguchi Memorial Institute for Medical Research (NMIMR), University of Ghana



Group photograph of Asian-African Research Forum in 2019 (Sapporo, Japan)

research to build an "all-Japan collaboration team." In 2019, we successfully determined the genome sequence of the dengue type 2 virus from Ghanaian patients. In addition, we collected the Aedes mosquitoes, which are vectors of the dengue virus, and have succeeded in maintaining mosquito colonies in Japan. The artificial feeding experiments using those mosquito colonies and dengue virus isolated from South-East Asia showed that African Aedes mosquitoes exhibited resistance to virus infection compared to Asian Aedes mosquitos. This result suggests that that strain or subspecies of the mosquito vector probably plays an important role in the outbreaks of dengue fever in West Africa. Our genetic analysis of the rotavirus showed that the vaccine strain disappeared from the field sites after the introduction of the vaccine, but reemerged in 2018. Global surveillance in 2019 showed that similar reemergence of vaccine strains was found in other geographic areas, such as India and Indonesia. The reemergence of vaccine strains of the rotavirus after the introduction of the vaccine is a global trend of viral genotypes. The carbapenem-resistant bacteria were first found in Ghana in 2017 and then in FY 2018 the NDM-1 gene was then identified as the drug resistant gene. In FY2019, we continued to survey novel drug resistance from specimens obtained from two field sites. A new research building named Noguchi Advanced Research Laboratories began operation. This building has several P3 laboratories and new equipment for infectious disease research. In FY2019, researchers and laboratory staff moved to this new facility.

At the end of FY2019, a new coronavirus infection (COVID-19) broke out and quickly spread around the world. In Ghana, the border was closed and the lockdown was imposed in Accra City as well as the University of Ghana for six months. As a result, the research activity in NMIMR has been significantly decreased. We hope that the COVID-19 pandemic will be resolved and that research activities and travel will return to normal.

Important Collaboration between TMDU and NMIMR, University of Ghana, in the Development of Human Resources

Collaboration between TMDU and NMIMR plays an important role in the development of human resources in Japan and Ghana. TMDU runs an educational program for medical students who want to gain experience at medical institutions overseas. Under this

program, undergraduate students stay to carry out their research projects for a few months at NMIMR. For example, three students visited NMIMR in 2019. The visiting students worked with young Ghanaian scientists in the laboratory and field. They conducted their own research at NMIMR. TMDU accepts young, talented researchers as Ph.D. students under the scholarship program supported by MEXT. In 2020, ten Ph.D. students from the University of Ghana enrolled in TMDU. They joined the parasitology, virology, bacteriology, or biomedical departments in TMDU and started a "new research life." They are expected to bridge TMDU and NMIMR moving forward, contributing to collaboration between the two institutions.

TMDU received a donation from T.E.N. Ghana MV25.

On November 19th 2020, we received 11 million yen as a donation from T.E.N. Ghana MV25 B.V. for infectious disease research conducted at the Tokyo Medical and Dental University (TMDU)-University of Ghana-Noguchi Memorial Medical Research Institute (NMIMR) Joint Research Center. This donation has continued from last year despite the COVID-19 pandemic.

T.E.N. Ghana MV25 B.V. (MV25), which is funded by Mitsui Ocean Development & Engineering Co. (MODEC), Mitsui & Co., Mitsui O.S.K. Lines, and Marubeni Corporation, operates the Floating Production, Storage & Offloading (FPSO) System off the coast of the Republic of Ghana. FPSO provides marine oil mining, gas production, storage, and shipping. Named after the former President of the country, "FPSO Prof. John Evans Atta Mills," the FPSO is moored at a depth of approximately 1,500 meters and has been producing crude oil and natural gas since 2016. MV25 agrees with the purpose of our AMED project, hopes to contribute to the further strengthening of relations between Japan and Ghana and the development of medical research despite the expansion of COVID-19. We will effectively utilize the donations received and strongly promote local infectious disease control.



Sample collection training from environments by 4th year medical students (Ghana)

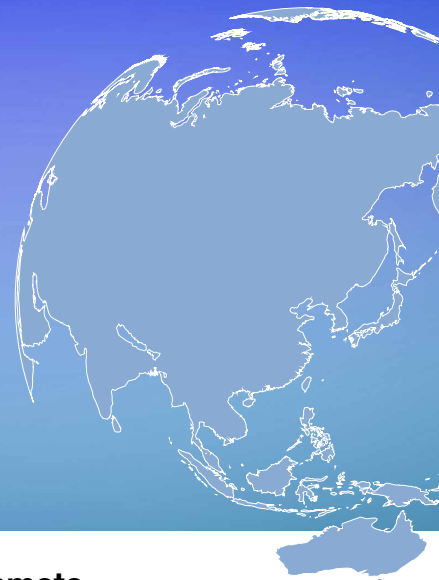
Activity Report of 2020

The Institute of Global Affairs (IGA) was established in 2016, and will be in its sixth year in 2021. There are now 377 international students, which represents a significant increase since 2016. As a top global university, it is our priority to enhance not only the quality of education for international students, but also the quality of their overall experience at TMDU and in Japan.

Due to COVID-19, 2020 was a very tough year worldwide.

Under such circumstances, we have endeavored to promote international exchange and strengthen relationships between TMDU and its partner universities while making effective use of online services.

We expect that future international exchanges will become more hybrid.



Noriyuki Wakabayashi

Professor,
Executive Director/Executive Vice President
(Education and International Exchange)
Director, Institute of Global Affairs, TMDU

David Cannell

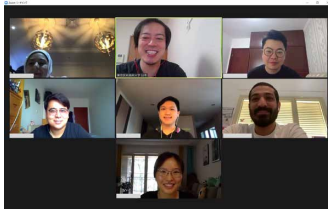
Associate Professor,
Institute of Global Affairs, TMDU

Kazuhiro Yonemoto

Assistant Professor,
Institute of Global Affairs, TMDU

Offering Japanese language classes online

This semester, due to the spread of COVID-19, all Japanese classes were conducted online from April, including orientation for students. Students in Japan took classes from their homes and laboratories while those who could not come to Japan took classes from their countries. Because of the time difference, some students took classes at 1:00 a.m. and others had unstable internet conditions. Therefore, it was not easy for the students to learn Japanese online, and some students may have felt stressed by the situation of not being certain whether they would be able to come to Japan or not. However, thanks to the efforts of the students and faculty members, we managed to hold classes even under these circumstances. We hope that these classes, although online, have been of some help to the students. Next year, based on this experience, we intend to provide more enjoyable and effective opportunities to learn Japanese, whether online or face-to-face.



A scene from an online Japanese class

AGAT activity report

The vision of the Advancement of Global Accessibility Team (AGAT) is to assist in creating an environment that is global in reach and has a rich international quality that attracts diverse, motivated individuals by increasing the accessibility of university resources and facilities to all international students, foreign faculty, staff, patients and visitors.

As part of its efforts to globalize accessibility at TMDU, AGAT has launched a multi-year initiative to create a multilingual zone across the campus in which international students, foreign faculty and staff, hospital patients, and university visitors are able to easily navigate facilities and access resources on campus. In FY2020, AGAT worked hand-in-hand with faculty and staff members of the International Health Care Department to create multilingual signs in

the medical hospital to guide patrons. In a different project with the medical hospital, AGAT assisted in developing English-language audio and video tools to train hospital personnel. Finally, AGAT contributed to the redesign of the TMDU English-language website, making it more global in appeal.

International Symposium 2020

Date and time: December 4, 2020 (18:00–20:10 JST)

Style: Web conferencing system

Program:

Session 1: Current status of TMDU

Session 2: Small group discussion on a topic/topics with TMDU alumni and TMDU affiliate worldwide.

Tokyo Medical and Dental University held “the International Symposium 2020” to strengthen our global network with our international dental alumni by sharing information on dental research, education, and clinical care.

A total of 76 participants from 27 countries joined the symposium to exchange information and build networks.

Starting with the opening address, Session 1 began with messages from our honorable retiring professors. After that, messages from new appointees or about newly launched projects were delivered.

Session 2 consisted of group discussions and presentations.

The group discussion themes were:

- Research
- Education
- Clinical care

We believe that international collaboration and staying updated about advances in research, education, and clinical care are very important; with our TMDU network, many projects are possible.

We believe this symposium allowed us to strengthen our bond.

Joint Degree Doctoral Program in Medical Sciences between Tokyo Medical and Dental University (TMDU) and Mahidol University (MU)

Over the past four years, Tokyo Medical and Dental University (TMDU) and Mahidol University (MU) in Thailand have been preparing to launch a joint degree program. Finally, in April 2020, a Joint Degree Doctoral Program in Medical Sciences between Tokyo Medical and Dental University and Mahidol University was launched.

This program aims to foster medical professionals who possess the research skills to respond promptly to the diversification of medical needs and are capable of being leaders in medical and healthcare science both in Japan and the ASEAN region.

Three Thai surgeons who enrolled in this new program in April 2020, despite the COVID-19 situation, are now taking lectures through video conferencing tools, and proceeding with research plans with their supervisors.

This program, which has just started, regularly holds video conferences by faculty members from both universities and the program is proceeding smoothly in collaboration with both universities.

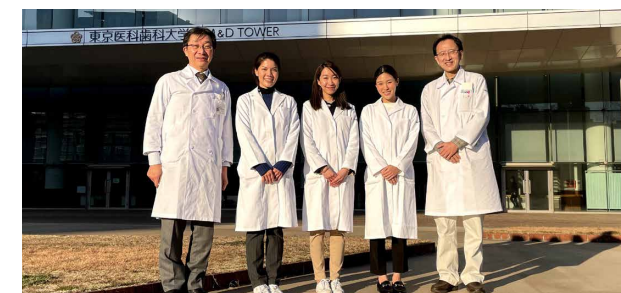


In commemoration of the admission in April 2020 (three students from the right side)

Tokyo Medical and Dental University and Chulalongkorn University International Joint Degree Doctor of Philosophy in Orthodontics

The Joint Degree Program of Tokyo Medical and Dental University (TMDU) and Chulalongkorn University (CU) has been operating as planned. For recruitment of future candidates, we hosted booths to introduce the program at the International Association for Dental Research-Asia Pacific Region (ADR-APR) conference and created a new promotional video to publish on the Joint Degree Program (JDP) website, and three students were constantly enrolled and took the course with no complications.

Regarding dissertations, the students have been preparing well and one of the students' reports was accepted for publication in an international journal.



The students who matriculated in 2019 began to study at TMDU

Master of Public Health in Global Health (MPH) Course

TMDU has been offering the Master of Public Health in Global Health (MPH) Course since 2018. The MPH Course is designed to educate individuals from around the world who want to be leaders in their fields; generating, translating, and disseminating public health-related scientific evidence in the real world to make the world a healthier place. All lectures are taught in English to train students with research competence for global health issues. We invite world-leading experts from Harvard University and Johns Hopkins University, the most prestigious and historic universities in the field of public health, to acquire world-standard research skills. In 2020, because of COVID-19, it was a great challenge for us to conduct classes with minimal disadvantages to students. We conducted classes in three new styles: online, on-demand and on-campus.



Online class conducted by a professor from Harvard University.

Challenge to New International Exchange

Due to the COVID-19 pandemic, we held the “Online Students' Exchange Program with Mahidol University (O-SEP_MU_2020)” on July 22 via the web conferencing system Zoom, as a new international exchange initiative to replace studying abroad, between dental students from Mahidol University in Thailand and TMDU. We had a group session with a wide range of contents, such as the introduction of each other's country and student life and dental treatment under the situation of COVID-19.

Further, our 14th and 15th TMDU × Waseda Discussion Café (D-Café) was held via Zoom under the ongoing collaboration between TMDU and Waseda University; this was our first attempt to hold D-Café virtually. D-Café is a fantastic opportunity to practice English communication skills as well as to network with students from a wide variety of majors, career goals and cultural backgrounds.

The great participation of students and their positive feedback convinced us that the events were meaningful and engaging for all participants despite the new online format.



Online Students' Exchange Program (O-SEP) with Mahidol University (MU) in Thailand

Reports by TMDU Overseas Students

International students from Asia, Africa, the Middle East, North America, Latin America and just about everywhere else in the world are studying at TMDU.

What are they studying?

What are their aspirations?

International students currently at TMDU report on their life here.

here has taught me to be motivated, organized, and timely. Pursuing a doctorate will better prepare me for life in the real world and lead to my career choices to work as a global public health leader. My vision is to contribute my knowledge and experience to improve health-related quality of life and well-being for all people worldwide. I will always be proud of studying at TMDU for the opportunity it has given me to develop myself and secure a successful future.



Entrance Ceremony for the Graduate Schools of TMDU, 2018



Delivering presentation at the 78th JSPH conference



Afghanistan

Dr. Sharifullah Alemi

3rd year graduate student

Department of Global Health Entrepreneurship,
Graduate School of Medical and Dental Sciences

My Academic Journey in Tokyo

My life in Tokyo started with a warm welcome from Tokyo Medical and Dental University (TMDU). Starting graduate school in a different country was a big step towards fulfilling my dream of pursuing a doctorate at one of the world's top-ranking universities. After working for several years at the Afghanistan Ministry of Public Health, the transition from working life to student life seemed difficult. However, I felt ready to cope with the change and was very passionate about attending TMDU because it provides students the opportunities to engage in cutting-edge scientific research. The department faculty and seniors are collaborative and approachable, enabling me to make substantial progress in my studies.

I have devoted my time to performing quality research, learning, and development at TMDU, and these efforts have yielded great academic results. I have had the opportunity to attend the Public Health Medicine track courses, educational seminars, and lectures and conduct research in the department. My research interest areas center around maternal health, non-communicable diseases, and COVID-19. I am currently a research member of the collaborative implementation science project focused on preventing and controlling non-communicable diseases among schoolteachers in Kabul, Afghanistan. Our research article on the influence of male participation in reproductive healthcare utilization was published in a peer-reviewed journal during my second year, which is a significant scholarly achievement for me as a first author. I became a member of the Japanese Society of Public Health

(JSPH), a prestigious platform for public health professionals and researchers. I was honored to present our research work on "rural-urban disparities in receiving antenatal care" at the 78th annual conference of JSPH held in Kochi in 2019. In the following year, I attended the 79th virtual conference of JSPH convened in Kyoto and presented our scientific article on "Non-communicable disease risk factor profiles among Afghan female schoolteachers." These conferences helped me learn more about the latest research and build academic networks.

In addition to academic pursuits, the university offers extracurricular learning opportunities to experience Japanese culture, attendance at out-of-campus events, and active engagement in academic circles. I have recently been elected as the President of the Afghanistan Student Association in Japan for the 2020/21 term, which will help me connect with Afghan students and expand my perspective, allowing me to play a role in cooperative Afghan-Japan relations. At the 2002 Tokyo Conference on Afghanistan, the Government of Japan pledged to take concrete measures to support Afghanistan's reconstruction process in various areas, including education, medicine, and healthcare. Contributing to these commitments, TMDU was the first university in Japan to accept a graduate student from Afghanistan in the medical field in 2003, playing a vital role in fostering friendly relations.

Living conditions are of a high standard in Japan. Life in Japan has been enjoyable for my family and me, and we have benefited from the rich culture and values of the Japanese people. Living



Malaysia

ESTHER NG FENG YING

3rd year graduate student

Department of Oral Radiation Oncology
Graduate School of Medical and Dental Sciences

My Memorable Experiences in TMDU

My name is Esther and I am from Malaysia. I graduated from King's College London (KCL), United Kingdom, and lived there for just over 6 years when I decided to move back to East Asia. I had heard about Tokyo Medical and Dental University (TMDU) from my tutor Dr. Foxton during my undergraduate studies at KCL. Dr. Foxton completed his PhD studies here in TMDU many years ago and told me that he had had a wonderful experience here in Japan. Hence, I decided to follow in his footsteps and applied to further my studies here at TMDU. I was also extremely lucky to be given a MEXT scholarship to help support me during my studies here.

I am now a 3rd year student in the Department of Oral Radiation Oncology. It is terrifying how quickly time flies by. The research was very challenging for me especially in the beginning because during my undergraduate studies at KCL, we focused mostly on practical and clinical dentistry. Everything was very new and unfamiliar to me. I had so much to learn then and still a lot more to learn now, but fortunately, my professor and colleagues have been extremely helpful and patient. They were also very friendly and caring, which really helped me in settling down and adjusting to my new life in Japan.

Besides research, I have also taken part in a few other interesting courses offered to foreign students in TMDU, such as "Japanese Literature and History" and a Japanese language evening course. In the former course, I learned about and discussed Japanese history and literature with other students; in the latter, I managed to improve my Japanese language skills while making new friends from different countries.

One of my most memorable experiences at TMDU was going on a field trip to Hakone with my fellow Japanese language course mates as part of the course. We learned about and visited historical structures such as Odawara Castle and Hakone Sekisho. We also experienced staying overnight in a ryokan and enjoyed traditional Japanese meals. It was an eye-opening and wonderful trip.

Another memorable experience for me, surprisingly, was the orientation program for new students during my first month of enrolment in TMDU. Even though there was nothing extraordinary about the orientation program, it was a highlight for me since I was able to meet new people that I have managed to become and remain good friends with even today.

I do not really have a solid plan concerning my future career path at the moment, but I do hope to be able to work in a position where I will be able to do research and also practice clinical dentistry at the same time.

The future is always uncertain and 2020 may not have been the best year for everyone but let's keep moving forward and keep doing what we love!



Group photo of students from TMDU Japanese Language Course on Hakone Field Trip 2020.



View of Mount Fuji from Lake Ashinoko, Hakone.

Reports of TMDU Students in the World

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.



Trip to Tasmania



Ken Matsushita

5th year student,
School of Medicine

The First Step to Studying Medicine in Foreign Countries

When I was a fourth-year student, I had the great opportunity to visit Australia for six months to do basic research. I would like to share my experience here.

During that stay, I was assigned to Thomas Preiss' laboratory, in the Department of Genome Sciences in the John Curtin School of Medical Research (JCSMR), which is an institute composed of more than 40 laboratories, as part of the Australian National University.

My project was to reveal the genomic mechanism by which specific molecules work in a hypertrophic heart. Hypertrophy is a

histological change seen in heart failure. The laboratory extracted a specific molecule from a Chinese herb conventionally used for patients with heart failure to identify its effects on a hypertrophic heart at the genetic level.

I spent a whole five months working on basic research in the field of cardiology, and this experience gave me an insight into the mission of basic scientists. In the future, I would like to work as a general or pediatric cardiologist. I am also interested in basic research in the search for new medicines to treat currently untreatable diseases. This was my first opportunity to work abroad, and I am happy to share my experiences here.

One of the biggest difficulties in my stay was the language



With TMDU students 2019



With PhD students, in front of JCSMR

barrier. Even in daily conversation, it was difficult to catch on. To make matters worse, scientific discussion requires terminology and an understanding of highly sophisticated contexts, which is difficult even in Japanese. I quickly realized that it requires specialized English to work abroad. As many of my fellow students also came from countries where people do not speak English, I had no excuse regarding the language barrier and tried to learn quickly. I hope to work abroad to study advanced techniques, either as a clinician or as a researcher, and will endeavor to improve my understanding of scientific English.

I managed to complete my experiment with the support of laboratory members. My supervisor was a German post-doctorate teacher who taught me about the project from the beginning and helped me fully grasp the concept. I was also fortunate that PhD students from India took great interest in my experiment.

I appreciate the help of the staff from TMDU and JCSMR, and everyone who supported me during my stay. Some juniors missed the chance to study abroad due to the coronavirus. I hope we will overcome this pandemic soon and juniors will have this great opportunity again.



Going to a lake in Seinäjoki



Keiko Takagi

4th year student,
School of Health Care Sciences

My Experience in Finland

From the end of August to the beginning of September 2019, I had the great opportunity to study in Seinäjoki, a small city in Finland. It was my first time studying abroad in my time at TMDU. This study program consisted of lectures at Seinäjoki University of Applied Sciences (SeAMK), visits to medical facilities and experience of Finnish culture. Through this course, I learned about the medical situation in Finland, nursing students' lifestyle and Finnish culture. I would like to introduce these three aspects that inspired me during my stay in Finland.

First, I found that Finnish medical services were very efficient and useful. For instance, the Kanta card is available for individuals in Finland. Kanta is a national archive of health information for medical services such as hospitals and clinics in Finland. It enables medical workers to get patients' clinical recording so that they can avoid adverse drug interactions and overlap. By showing their Kanta card, people can obtain the appropriate medicines more quickly. I think technology to make medical services clear for everyone should be introduced in Japan too.

Second, I found that nursing students in Finland had more practice in the clinical setting than those in Japan. For instance, they had nursing practicums in the nursing curriculum as in Japan, but there were nursing practicum rooms in where students could learn in much more realistic medical situations than in Japan. I was surprised that nursing students in SeAMK were able to work as nurses during their vacations. After they obtained sufficient nursing studies and practicums, they can work as nurses and earn an income. I think that it helps not only students to gain nursing experience, but also nurses who have children to get vacations when their children have no school.

Finally, I found that the culture in Finland is similar to that in Japan. When Japanese students made a presentation about Japan in front of the class, I found that Finnish students were shy and hesitated to interrupt us. In their culture, it is important to show great respect to others, just like in Japan. Of course, there were some differences such as calling others by their first name and taking coffee breaks. So, although Finland and Japan are very far apart, we do have some cultural similarities.

Through this course, I learned how people in Finland are facing the aging of society. This opportunity made me rethink how I would like to tackle the same problem in Japan as a nurse. I would like to express my gratitude to everyone who supported this course.



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



At the dining hall of TMU



Minori Saito

4th year student,
School of Health Care Sciences

My Experience in Taiwan

I participated in a short-term, overseas training program in Taipei Medical University (TMU) from August 21st to 30th, 2019. I really enjoyed my stay in Taiwan and gained a lot of valuable experience. I would like to introduce three aspects of my stay that especially impressed me.

Firstly, I learned that the level of Taiwanese medical technology is equal to or higher than Japan's. I visited a clinical laboratory center and a reproductive medical center, where they use the latest equipment. Taiwan is advanced in reproductive medicine because the number of external fertilization increases, and the nation supports this procedure. It was really valuable to have a chance to look at the actual equipment they were using such as the microscopes and freezing storage containers. What surprised me most is that some medical technologists working in the clinical laboratory center were undergraduate students of the same year as me. I was impressed with the high levels of Taiwanese students and felt motivated to study.

Secondly, I took part in the laboratory work of Professor Yu-Chin Liang, who is researching the role of MCPIP3 and antiproliferative activities of ZFO36L1, ZFP36L2 in colorectal cancer. In this research, I carried out Western blotting, purification of RNA, streak culture and observation of E. coli in LB agar. I was taught by considerate graduate students who had much better techniques than me. Their skills led to accurate research and their kindness helped others to improve their technical and communicational skills. The experience was very special and unlike anything I have experienced in Japan before.

TMU has many overseas students. In my laboratory, most students were Taiwanese but they spoke English when talking with overseas students. Despite the language barrier and differences in culture, eating habits and so forth, they maintained a comfortable working environment. They discussed things with me and I really enjoyed my stay thanks to their support.

Overall, I had many invaluable experiences through this overseas

training program. I realized that communication skills in English are very important, which has further motivated me to study. I hope that my experience will be useful in my future and stimulating for others. I would like to thank all those involved in this overseas training program, the teachers who sent me, the professors and laboratory members who took care of me in Taiwan, and the students from the Taipei Medical University who kindly made contact with me.



Taipei 101 from a consulting room in the Reproductive Medical Center



Lunch with my laboratory members



Playing Thai traditional musical instrument



Kentaro Harada

4th year student,
School of Dentistry

Thai Short-Term International Exchange Face-to-Face and via the Internet

In 2018, when I was in my second year, I went to the Faculty of Dentistry, Srinakharinwirot University (SWU), Bangkok, Thailand. It was only a two-week, short-term study program, but I gained an overview of the facilities at the Faculty of Dentistry, the dentists, the dental education curriculum, and so forth. In addition to the direct insights I obtained from this program, I learned about Thai culture, the atmosphere, and the Thai lifestyle. The teachers and students at the university were keen to discuss issues during lectures and when having lunch together. Those times deepened my knowledge of the pros and cons of the Thai dental educational programs, healthcare system, and insurance. I also broadened my perspectives on the geographical and epidemiological situation not only related to oral health but also in other healthcare fields, which are also affected by the socioeconomic conditions and the religious and political situations.

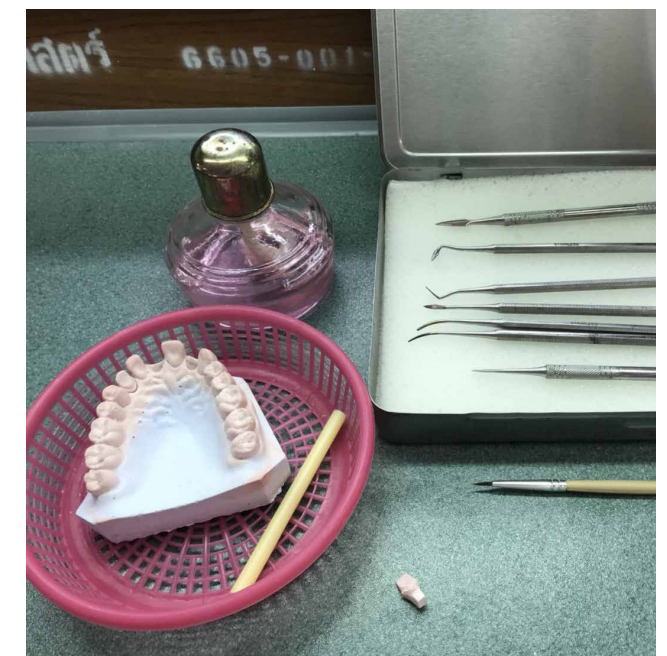
This was the first time for me to visit another country to study as a dental student, so everything was fresh and inspiring. Before studying abroad, I had never thought deeply about our dental education, oral health status, and oral health problems, but visiting Thailand led me to gain greater insight into dentistry in Japan by comparison.

The many friends and connections made during this study program were indescribably precious, expanded my future vision and mission, and promoted my international exchange with students and teachers in other countries.

One of the events this experience motivated me to participate in was the "Discussion Café with SWU and Tokyo Medical and Dental University (TMDU)" in 2020. Since COVID-19, it has become harder for those hoping to study abroad to visit other countries and to engage in international exchange. The experience in 2018 prompted me to continue on-line international exchange as one of the Discussion Café's task force members. We prepared for the Discussion Café sufficiently to enable students to take part in international exchange, including new first year students. The good news was that as many as 45 SWU and TMDU students joined the on-line Discussion Café. We mainly discussed two topics related to the changing situations under the pandemic. The topics were: changes in dental medicine/practice during and after COVID-19 and our school life after 2020. The discussions revealed that even under each country's difficult pandemic situation, many students and universities were seeking solutions to enable students to study as usual and continue their enthusiasm for studying dentistry and international exchange.



Lunch time with Faculty



Wax up practice



Suzune Noda

4th year student,
School of Oral Health Care Sciences

My Experience in Taiwan

I visited Taipei Medical University for five days from March 4th to 8th, 2019. Taipei Medical University (TMU), established in 1960, has ten specialized departments in medical care and five associated hospitals. It receives 6,000 students every year. TMU is also a research institute and has achieved many breakthroughs and innovations. The university's progress and growth in various fields such as education, research, and services, have attracted worldwide attention.

I interacted with students on the Oral Hygienist program of the College of Oral Medicine. In Taiwan, no qualification as a dental hygienist has been established, but at Taipei Medical University, oral hygiene is taught as a long-term investment for the future.

Through my participation in several classes, I realized that the systems and challenges related to dentistry differ between Japan and Taiwan due to differences in the insurance systems and the populations' age distributions. In addition, through the hospital visit, I learned that the water supply and electricity maintenance was different from that of Japan, and the structures of the systems were different.

During the training, students introduced us to local food and guided us to sightseeing spots. I experienced the atmosphere and smells of the local market and the tastes of different foods. It was a fresh and interesting experience. In addition to learning about dentistry, I greatly benefited from experiencing cultural

differences through the five-day exchange with students at Taipei Medical University.

Through this training, I learned that dental hygienists play an important role in solving dentistry and medical problems in Taiwan, which is why Taipei Medical University provides advanced education in this field. Many of the teachers have learned from the situation in Japan, where dental hygienists have already been established, and are seeking to apply this experience in Taiwan. Many of the students were keen to learn about the experiences of dental hygienists in Japan, deepen their understanding of the importance of oral hygiene and become oral hygiene specialists. I have been fortunate to be in an environment where I could learn and work in oral hygiene, and I aim to enhance my knowledge and experience as an oral health specialist.



A model tooth that I made and me



At a night market in Taiwan



With the teachers and students



Saki Nara

3rd year student,
School of Oral Health Care Sciences

An Invaluable Experience in Taiwan

I participated in an exchange program to Taiwan for 5 days from November 19th to 23rd, 2019. All 3rd year students in the Track of Oral Health Engineering attended this overseas program. In this program, I had a chance to visit Taipei Medical University and some dental laboratories. For the first time in a long time I left Japan and visited Taiwan for the first time, so everything was new and exciting. The airport, city, people, and food. I absorbed many things in a short time, and I enjoyed this overseas program.

On November 20th, I visited Taipei Medical University and they showed us around the campus and hospital. Taipei Medical University Hospital is an exceptionally large hospital. There is a department called Family Dentistry in Taiwan. I thought it was one of the things that was different from Japan. Our guide explained that if you did not know the cause of the pain and did not know which department to go to, you should go to Family Dentistry. I thought it was like General Dentistry in Japan.

During my stay in Taiwan, I visited 4 dental laboratories: Arch Dental Laboratory, Evolution Dental Laboratory, Jien-Shin Dental Laboratory, and Smilden Dental Laboratory. They welcomed us and showed us how they work in the dental laboratory. They are proactively adopting digital systems for making dental prostheses. What I noticed during the tour of the four dental laboratories in Taiwan was the high level of English proficiency of the dental technicians. I am convinced that this exchange program in another country is a wonderful experience for students who are eager to work globally in the future.

November 21st was the day for us to show our practice results for the presentation and carving. We started presentation preparation 6 months before the program. We were divided into groups and practiced English with native speakers. I gave a presentation in English with more confidence than when I was practicing. In the competition for carving skills, we competed with students from Taipei Medical University. I had a very meaningful time. There were still some points that required improvement, but I was incredibly happy and satisfied with the result. I could say I'm proud of myself for improving my carving skill further compared to what it was before by practicing my carving repeatedly for the contest.

During my spare time before the awards ceremony, I went to Taipei 101 with students from Taipei Medical University. I really enjoyed talking with Taiwanese students.

During this overseas exchange program, I was able to spend my 5 days productively because I explored not only dental technology in Taiwan, but also the Taiwanese culture. I would like to express my gratitude to all the people who supported me.



At The Carving Contest



At Taipei Medical University



Night View of Jiufen Old Street

Letter from TMDU Overseas Alumni

TMDU graduates are active at the forefront of their fields in countries worldwide. Studying abroad helped them deepen their knowledge as healthcare professionals, benefiting both their field and patients around the globe.



Arun Kumar Rajendran

Senior Researcher (KRF Post Doctoral Fellow),
Biomimetics and Stem Cell Engineering Laboratory
School of Chemical and Biological Engineering,
Seoul National University, Seoul, South Korea.

TMDU, a place where professionals are cultivated with knowledge and humanity.

My journey with TMDU started right back when I was doing my Master's degree in India. TMDU had established collaborative research networks with Indian Universities and I chose to be a part of an Indo-Japan collaborative research project for my Master's thesis. This gave me the opportunity to work with Professor Sachiko Iseki (Department of Molecular and Craniofacial Embryology) and get to know more about the programs in TMDU. My first opportunity to visit TMDU was when I was selected for the International Summer Program (ISP) 2014. It was such an eye-opening experience for me to interact with numerous researchers from almost 17 different countries in Asia and various professors of TMDU. This gave me a great idea about the vision of TMDU and how it welcomes international students in the pursuit of their careers. The extensive research resources within the campus, highly motivated professors, technologically advanced library and TMDU's consistent top ranking in the world for dentistry are some of the key features that led me to choose to do my doctoral course at TMDU. Along with the Japanese government's MEXT scholarship, joining TMDU was an exciting experience.

With a background in dental sciences and nanotechnology, I joined the Department of Molecular and Craniofacial Embryology headed by Professor Sachiko Iseki. Under her guidance and collaboration with Professor Nobuhiko Yui from the Department of Organic Biomaterials, I learned how to develop biomaterials that could be used in the treatment of developmental bone pathologies. During this period, I learnt new scientific concepts and gained hands-on experience with highly sophisticated instruments, which helped to improve my scientific reasoning and knowledge. As a prominent research-oriented center in Japan, TMDU motivates and supports its students to cultivate a passion for extracurricular activities and nurtures strong multinational

friendships. The Japanese language classes, the picnics and tours arranged for foreign students, the "Travelling around the World" sessions, the various festivals celebrated in the TMDU campus such as the Mochi-Tsuki, Summer Festival, and Tanabata Matsuri helped me grasp the varied and interesting culture of Japanese society. The kind staff, easily approachable professors, warm and helpful seniors and friends made me feel TMDU as a family.

After graduating from TMDU, I am currently working as a senior researcher at the Department of Biomimetics and Stem Cell Research at Seoul National University, Seoul, South Korea. The knowledge obtained during my period in TMDU has greatly helped in writing research proposals and obtaining grants such as the Korean Research Fellowship. The expertise gathered during my doctoral course in TMDU is helping me design new biomaterials for regenerating bone tissues, which will be helpful for society in the future.

Set in Tokyo's buzzing metropolis, TMDU is a unique research center with an integrated medical-dental hospital and school and state-of-the-art research facilities. It is a favorable place to grasp societies' medical and dental needs and move research forward accordingly. TMDU stands by its motto of cultivating young professionals with knowledge and humanity for generations to come.



Getting introduced to Japanese culture in the International Summer Program (ISP2014) held in TMDU.



A casual dinner along with laboratory friends.

TMDU Topics

August
8-9

Online Open Campus 2020

To prevent the spread of COVID-19, the Open Campus for FY2020 was held online. Part of the program is being released on the university website, including videos of an address by President Yujiro Tanaka and a discussion between the President and undergraduate students; so, those of you who could not take part on the day of the event are encouraged to watch the videos.

<https://www.tmd.ac.jp/admissions/faculty2/event/opencampus/index.html>



September
25

The University Reform Idea Contest held

As part of the efforts to create a new university in the post-COVID era, we had issued a campus-wide call for ideas to help ensure an even more attractive university environment for the faculty, staff members, and students. Although this was the first such initiative, we received 73 applications and adjudged nine award winners. The Special Award went to Assistant Professor Koichi Suga of the Department of Nephrology for "Opening an Online Second Opinion Outpatient Clinic."



October
15

Tokyo Medical and Dental University designated as a designated national university

On October 15, 2020, Tokyo Medical and Dental University (TMDU) received designation by the Minister of Education, Culture, Sports, Science and Technology as a designated national university during the fourth midterm goal phase—the designation implies that TMDU is expected to unveil educational and research activities of the highest level. Going forward, we will strengthen our research capabilities and, at the same time, foster clinician scientists and medical data scientists; we will also aim to realize global-level total healthcare by promoting international collaborations.

October
31

M&D Data Science Center's symposium

On April 1, 2020, TMDU installed the M&D Data Science Center, which will play a central role in promoting medical and dental research, as well as medical practice and education from the data science aspect. The symposium, entitled "Aiming at different-dimension leaps and bounds of medical and dental research," introduced the center and discussed its aims and outlook while offering lectures by speakers from both inside and outside the university.



December
4

International Symposium 2020 on dentistry held online

For the purpose of strengthening the global network with our international dental alumni through sharing information on dental research, clinical care, and education, the International Symposium 2020 on dentistry was held online. With a total of 76 participants from 27 countries, the symposium served as a place to reinforce the network of the TMDU faculty members, graduate students, and former international students and provided an opportunity for dental healthcare professionals and dentistry faculty members to exchange their views.

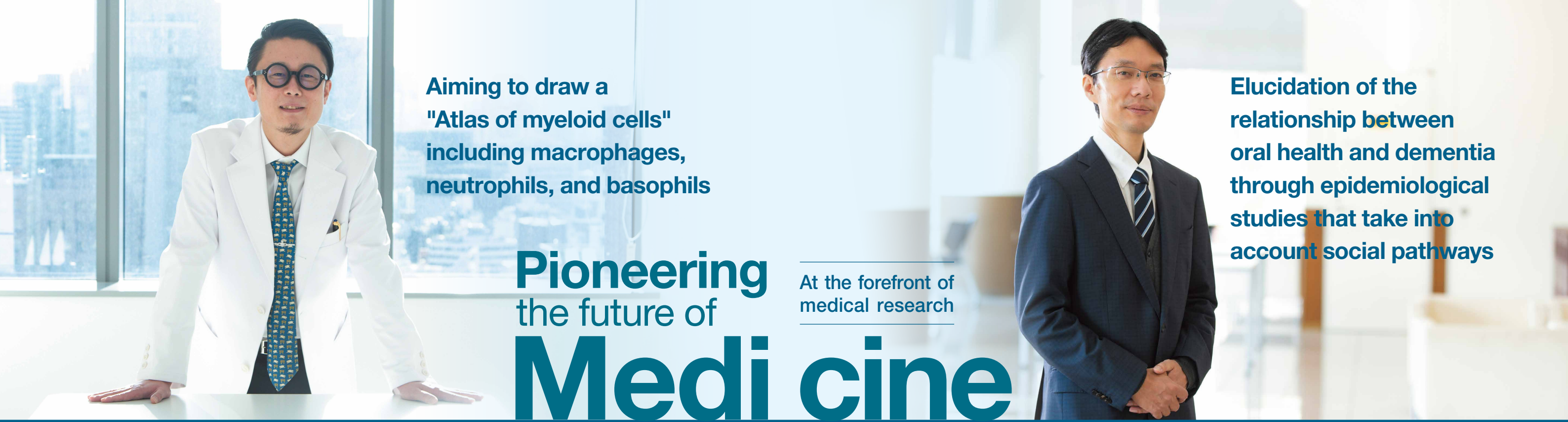


February
12

The Union of Four Universities in Tokyo Consortium for a Post COVID-19 Society's inaugural symposium

TMDU, Tokyo University of Foreign Studies, Tokyo Institute of Technology, and Hitotsubashi University established the Union of Four Universities in Tokyo Consortium for a Post COVID-19 Society to promote research and education on COVID-19 and the post-pandemic society. At the inaugural symposium, participants were limited to the four universities' teachers, students, and related personnel. Going forward, however, we plan to continuously hold such events and announce the results of research that can help improve people's health.





Aiming to draw a
"Atlas of myeloid cells"
including macrophages,
neutrophils, and basophils

Elucidation of the
relationship between
oral health and dementia
through epidemiological
studies that take into
account social pathways

Pioneering
the future of
Medicine

At the forefront of
medical research

Takashi Satoh
Professor

Department of
Immune Regulation

Completed the doctoral course at the Graduate School of Medicine, Osaka University in 2010, and awarded Doctor of Philosophy in Medicine. Worked as a Specially-Appointed Research Fellow at Osaka University Immunology Frontier Research Center in 2010. Appointed as an assistant professor at the center in 2013, and an associate professor at the center in 2018. He assumed his present position in 2020. In 2017, through a "Study of Functional Diversity of disorder specific macrophage," he proved the presence of multiple macrophages that are specifically involved in various diseases, and received the "Japan Society for the Promotion of Science (JSPS) Prize" and the "Minister of Education, Culture, Sports, Science and Technology Young Scientist Award."

Jun Aida
Professor

Department of
Oral Health Promotion

Graduated from the School of Dental Medicine, Hokkaido University in 2003. Completed the doctoral course at the Graduate School of Dental Medicine, Hokkaido University in 2007 (Doctor of Philosophy in Dental Medicine). Worked as a visiting researcher at University College London and an associate professor of the Department of International and Community Oral Health, Graduate School of Dentistry, Tohoku University. He assumed his current position in 2020. His specialties are public health and social epidemiology. He has been engaged in research on oral health inequalities, the relationship between oral and systemic health, social capital, and the health of disaster victims of the Great East Japan Earthquake.

Disorder specific macrophage
Their great potential

In recent years, it has been identified that macrophages, which are a type of white blood cells, have subtypes that are specific to respective diseases. Dr. Takashi Satoh, a professor of the Department of Immune Regulation, is leading a study of "disorder specific macrophage."

"Macrophages are immune cells, which were discovered over a century ago. While other immune cells comprise a diversity of subtypes, macrophages were considered to be only one type. Focusing on this point, I consider that, like other immune cells, there may be multiple types of macrophages in the body, and have been researching this area."

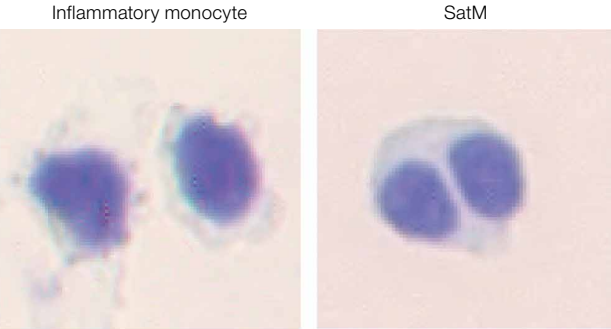
In 2017, Professor Satoh discovered a novel macrophage subtype involved in the development of fibrosis. In 2020, he revealed crosstalk between macrophages and the non-immune system. Since no effective cure has been found for fibrosis, drugs that suppress fibrosis are currently being developed based on these two discoveries.

Professor Satoh is also conducting multiple studies on cancer, dementia, and COVID-19, in addition to fibrosis, under an approach based on disorder specific macrophage.

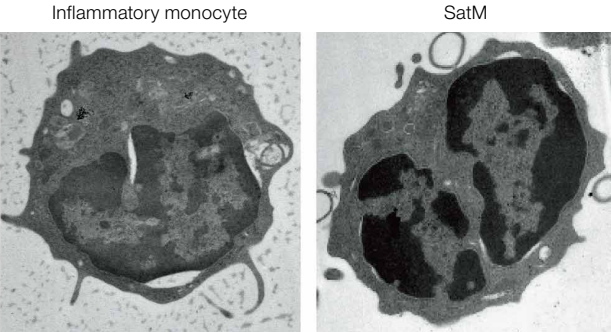
"In our university, where basic research and clinical research are closely related with an atmosphere of openness, I would like to elucidate the diversity of myeloid cells including neutrophils and basophils, as well as that of macrophages. Then, we would like to clarify the interactions among them and the relationships between

them and diseases or the non-immune system, and eventually we would like to create a "myeloid cell atlas" to map the myeloid cells in the human body."

Optical microscope



Electron microscope



A newly discovered macrophage (SatM). SatM is different in shape from normal macrophages.

**Daily denture cleaning is effective in
preventing aspiration pneumonia**

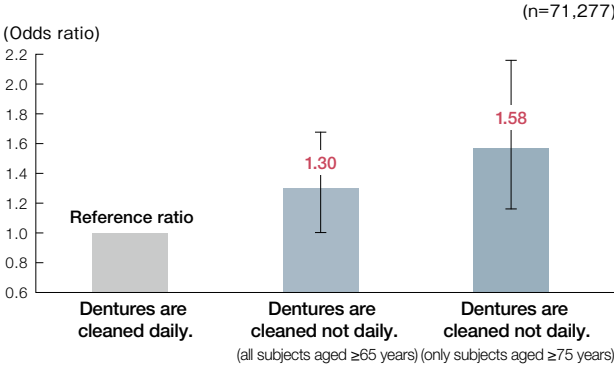
Research on the relationship between oral health and systemic health has been advancing in recent years. In particular, it has been demonstrated that oral care is effective in preventing aspiration pneumonia. However, studies on the relationship between oral health and pneumonia have been conducted only in inpatients and nursing home residents, and no study has been conducted in local elderly residents.

Jun Aida, a professor of the Department of Oral Health Promotion, conducted a cross-sectional study on the relationship between the presence or absence of pneumonia in the past year and the frequency of denture cleaning in approximately 70,000 local elderly residents aged ≥65 years. The results revealed that the risk of developing pneumonia in people without daily denture cleaning was 1.30-fold higher in those aged ≥65 years, and 1.58-fold higher in those aged ≥75 years. "This is the first study showing the possibility that not cleaning dentures and the oral cavity increases the risk of developing aspiration pneumonia. Also in the general elderly, good oral hygiene is likely to contribute to a decrease in the incidence of aspiration pneumonia."

Furthermore, Professor Aida has focused on epidemiological research on oral and systemic health, taking into account not only biomedical mechanisms, but also social pathways in particular. At present, he is working on research on oral health and cognitive decline.

"Social isolation" is a risk factor for dementia. According to Professor Aida's study, it has been demonstrated that elderly people who have few natural teeth and do not use dentures are at higher risk of falling into social withdrawal than those who have 20 or more natural teeth. "We consider that poor oral health is a factor for social isolation, and a verification study on this hypothesis is ongoing. We will proceed with causal inference using advanced analytical methods and elucidate the relationship between oral conditions and dementia in terms of social pathways."

**The association of the frequency of denture cleaning on
development of pneumonia in the past 1 year.**



*Impacts from age, sex, smoking history, income, education history, current number of teeth, ADL, the history of cerebral infarction or dementia, and pneumococcal vaccination are statistically eliminated.

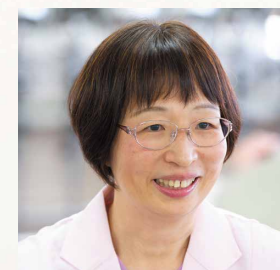
Kusama T, Aida J, Yamamoto T, Kondo K, Osaka K: Infrequent Denture Cleaning Increased the Risk of Pneumonia among Community-dwelling Older Adults: A Population-based Cross-sectional Study. Sci Rep 2019, 9(1):13734.

Listening to Passion for Medical Care

TMDU Clinical Specialists

Toshiko Adachi

Director,
Department of Dental Hygiene



Toshiko Adachi

Graduated from the School for Dental Hygienists of the Tokyo Medical and Dental University (TMDU) in 1986. Worked as a dental hygienist at TMDU Dental Hospital since April 1986. In 2009, appointed as the Director of the Department of Dental Hygiene, at the inception of the department.

It is people who make an organization function. We are committed to fostering human resources capable of working with confidence, as dental hygienists at TMDU

In recent years, oral care has attracted much attention from perspectives such as general health and frailty. Dental hygienists who are specialists in oral hygiene are expanding their fields of activity. Under these circumstances, Director Toshiko Adachi has been committed to training dental hygienists and improving their qualifications, as the top leader of the Department of Dental Hygiene of the TMDU Dental Hospital.

The only dental hygienist who serves as the director at a hospital in Japan

According to Toshiko Adachi, who has been leading the department as a director of the Department of Dental Hygiene since its establishment: "Our hospital, where dental hygienists work in an independent 'department,' is unique in Japan. In addition, I am the only dental hygienist in the whole country who has a managerial position. I believe that this system has been established based on the traditions of TMDU, where dental hygienists assume overall responsibility in their activities, including preparing treatment records by themselves."

Thirty-two dental hygienists of the department are assigned to all hospital departments and outpatient specialty clinics, except for surgical

departments. In particular, in the Oral Health Care Clinic, dental hygienists take the lead in providing health guidance and treatment in collaboration with dentists. Recently, dental hygienists have been carrying out perioperative oral function management at the TMDU Medical Hospital.

"It is rewarding to work at the Oral Health Care Clinic, because I can discuss my opinions from a different perspective from doctors, taking into consideration the patient's social position and home environment. When I started the work 35 years ago, there were only six dental hygienists, and their major duties were administrative and clerical work at clinics in some departments. The situation now is completely different from what it was."

What attracts me to this job is interacting with people and listening to patients

As an oral care professional, Director Adachi has been committed to interacting with patients and expanding the range of activities of dental hygienists for many years.

"The mouth is indispensable not only for breathing and eating, but also for conversation and emotional expression. It is the job of

dental hygienists to "protect" the mouth. In recent years, there has been growing social interest in the relationships among oral care, systemic diseases and frailty. The TMDU has offered treatment with a greater focus on chewing and articulation of speech for a long time. Now I feel that the fruits of our work with doctors are finally spreading in society."

Even though working hard as the director, she always spares time to interact with patients in clinical practice. Every time she interacts with patients, she truly listens to them. This approach is rooted in the off-campus training and field work during her studies at the Dental Hygienist School.

"In order to encourage patients to change their behavior, it is essential to listen to what they say and discuss things with them before we teach or give information. As a student, I experienced practical training in various workplaces, such as local health offices, nursery schools and private clinics of companies. During practical training, I was impressed by my seniors attitudes, who conveyed dental information efficiently. Also in the field work in Iwate Prefecture where we carried out a questionnaire survey, I realized that preconceptions and stereotyping lead to failures. Through this experience, I learned the basics of the dental hygienist's job, which are attractive to me: interactions with people. This experience made me who I am today.

In addition, dentistry for persons with disabilities is the field in which I have been working for the longest time in my career. At special needs education schools in the Tokyo Metropolitan Area, I am continuously working not only on health guidance, such as on tooth brushing, but also on providing a wide range of guidance, including that on eating.

"Even children with disabilities can brush their teeth thoroughly, if they are given health guidance continuously from kindergarten to high school ages. I was told that keeping their mouths clean would make it easier for them to get a job. One of their teachers said to me, 'tooth brushing provides benefits beyond the prevention of dental caries.' It gives me great pleasure to know that our core beliefs on good dental hygiene are being conveyed to them."

Wishing to pass on a vibrant working environment to the next generation

Director Adachi set forth the goal of "human resources development" when she assumed the position of director. In reference to the Department of Nursing, etc., she created manuals and curriculums through a trial-and-error process with the staff, and established a system for training new employees and supporting their career development. Moreover, she is also involved in establishing requirements for improving the qualifications of all dental hygienists, not only those working at TMDU, but also those at university hospitals nationwide.

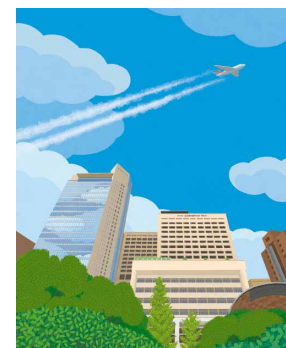
"An organization cannot function without people. As a dental hygienist at TMDU, my goal is to foster human resources capable of working with confidence. Our staff members are often told, "You look like you enjoy your work." I would like to continue to foster a vibrant working environment for all staff members. Moreover, I think it is my responsibility as a director to pass on a great workplace to my younger colleagues."



Medical Hospital

Dental Hospital

With the Functional Enhancement Building serving as the entrance to both the Medical and the Dental Buildings, we will integrate the Medical Hospital and the Dental Hospital by the concentration of functions and the effective utilization of buildings, with the aim of preparing the highest level of healthcare environment to address an ultra-aging society.



Cover of this issue

Yushima campus of Tokyo Medical and Dental University.

The two university hospitals, the Medical hospital (center) and the Dental hospital (right), will start initiatives for future integration.

While contributing to people's well-being by offering total healthcare of the world's highest quality, we aim to propagate a medical care model, in which medicine and dentistry are integrated.

NATIONAL UNIVERSITY CORPORATION

TMDU
TOKYO MEDICAL AND DENTAL UNIVERSITY

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