

NATIONAL UNIVERSITY CORPORATION

TMDU

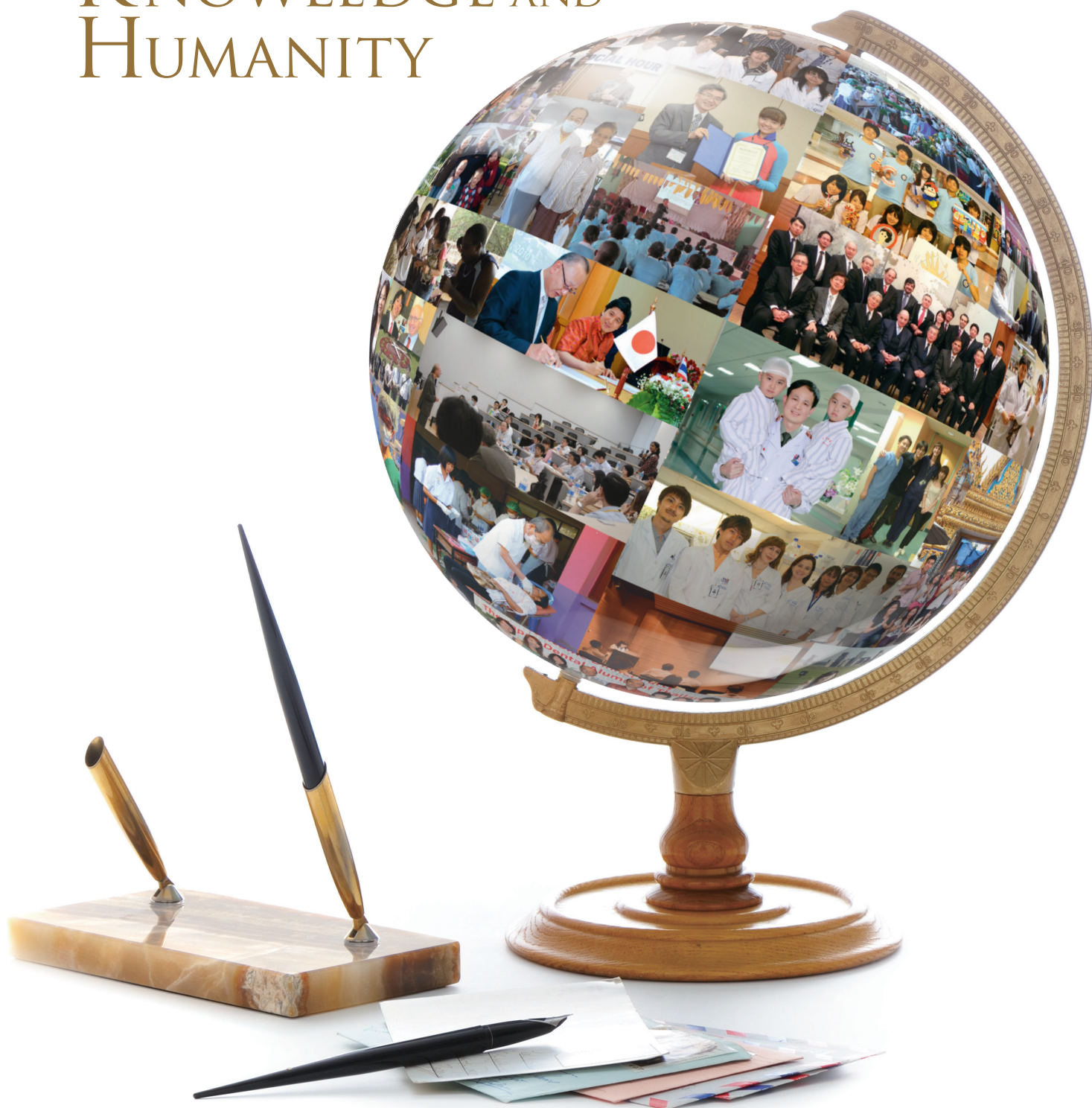
Tokyo Medical and Dental University

ANNUAL NEWS



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CULTIVATING PROFESSIONALS WITH KNOWLEDGE AND HUMANITY



MESSAGE
FROM
THE PRESIDENT

Educating Medical Professionals and with an International Perspective

Takashi Ohyama

President

NATIONAL UNIVERSITY CORPORATION

TMDU | **ANNUAL
NEWS** 

Tokyo Medical and Dental University

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Our school embraces three educational principles under our mission of “Cultivating Professionals with Knowledge and Humanity”: 1) To provide students with a broad education and a rich sensibility; 2) To educate creative people capable of diagnosing and solving problems independently; and 3) To train health care professionals with a rich international quality. Our world today is globalizing in every area. All over the globe, people are sharing knowledge, techniques and their way of life with others. Indeed, globalization is strongly seen in every health care field. It is also a universal truth that the 7.1 billion people who live in the world’s 195 countries need medical care in one way or another. We, as health care providers, are now expected to provide the best health care that is available to all of these individuals, regardless of their nationality or economic condition.

Therefore, teachers and researchers at a medical institution need to not only help provide the best health care they can, but also control the cost of this

Researchers

care to the greatest extent possible. At TMDU we pursue these goals by fulfilling our mission to advance research and development and train health care professionals with the knowledge, techniques and cost consciousness necessary to be members of the international community. In recent years, we have thus redoubled our efforts to educate medical professionals and researchers with an international perspective.

In 2009 we reorganized our “International Student Center,” which had focused on serving our international students by giving them the support they needed to succeed in studying at TMDU and living in Japan, into the “International Exchange Center,” which has a much broader scope of responsibility. Until we made this change, we were not able to efficiently gather and manage information about the experience that our students had abroad or the experience that international students and researchers had in Japan, nor could we measure the quality or outcomes of such international efforts.

TMDU currently has agreements for academic or student exchange with 72 universities and research institutions in 26 countries/regions. However, until 2009 these agreements were managed at the faculty level. As a result, we often lost contact with international graduates who understood our school and Japan well, and who played active roles in their health care communities abroad. To be sure, maintaining a long and continuous relationship with a partner institution as well as the individuals involved is a very important aspect of international exchange. Therefore, we are relying on the International Exchange Center to help us construct a network between TMDU and our international students and graduates, who are precious resources for us, as well as to centralize the keeping of records of personnel exchanges with our partner institutions.

TMDU aims to train health care professionals who can advance the state of education, research and clinical practice on the basis of Japanese culture in our globalizing world. The sayings, “If you wish to



be an internationalized person, you need to be a good citizen in your country” and “You can be a true citizen of the world only if you know your own country” should be kept in mind. Taken together, these maxims mean that one must be an intellectual person who behaves according to one’s own philosophy while keeping Japanese-style moderation. Accordingly, we provide various overseas research and training support programs for our students so they can experience research and training in another culture after studying Japanese culture as much as possible in our College of Liberal Arts and Sciences.

Concretely, we send 13 students to various countries every year, with respect to their wishes and their teachers’ advice, under our new Short-term (a few weeks to 6 months) Overseas Training Program. Furthermore, we send many students to our three international collaboration centers: 6 medical students are dispatched yearly to the Ghana-TMDU Research Collaboration Program on Emerging and Reemerging Infections at the Noguchi Memorial Institute of Medical Research, which was founded in 2009 in Ghana; another 6 medical students are dispatched yearly to the Latin American Collaborative Research Center (LACRC), which was founded in 2009 in Chile; and 2 medical students are sent for five months, and 10 dental students for two weeks, to the Chulalongkorn University-Tokyo Medical and Dental University Research and Education Collaboration Center, which was founded in 2010 in Thailand. The students may stay overseas only a short time, but they gain invaluable life and research experiences with the TMDU researchers who work at these centers, as well as with the other international colleagues they meet while abroad. The programs are designed to give our young students motivation to develop their future selves as global citizens by observing how our resident researchers work overseas and make international contributions, find pleasure in doing collaborative research, and derive satisfaction from training local professionals.

In addition, 8 sixth-year medical students had clinical internships at Harvard University and 4 fourth-year medical students went to Imperial College London on research-based internships. On our side, we accepted 4 students from Imperial College for research-based internships at TMDU. In all, approximately 60 of our 275 undergraduate medical students, some at private expense, experience some type of study abroad experience during their undergraduate days.

We began to send students to Harvard University based on a cooperation education agreement in 2004, and the total number of students dispatched on this program reached 64 by 2012. We are proud that the participating students, who once thought and acted passively, transformed themselves through their experience into positive students who search out knowledge with energy and confidence. Additionally, these newly active students encourage their juniors to become more international. We believe that our dispatched students will play an important, central role in helping us realize our goal of developing global education.

Harvard University Medical School’s curriculum, known as “New Pathway,” sets a good example for us to practice global education. To begin with, we sent some of our professors to Harvard so they could understand the curriculum in depth. Two years later we gave our students the opportunity to go to Harvard for clinical training. During this entire process we had several discussions with participants, and the teachers and students involved shared many ideas with us. It was a good opportunity for us to discover our core goals for the program. Overall, the best result was that we realized the possibility and necessity of continuously improving our medical education.

Upon their return, the students wrote a report entitled, “Proposal for medical education at TMDU and an action guidance for each actor in medical education,” which was based on their experience at Harvard University, and in which they gave their ideas on how TMDU should change its medical education. The novel ideas in this report are reflected in our new curriculum, which is managed by the Center for Interprofessional Education.

By now there have been approximately 130 participants; professors from the Faculty of Medicine, the Faculty of Dentistry, and the College of Liberal Arts and Sciences, who have participated in the Leadership Course and Faculty Development tutorial at Harvard. While there, these professors actively discussed how we could realize our mission. Importantly, they were able to exclusively focus on this activity during their particular visit. In Japan, it might be difficult for these professors to get together or devote an extended amount of time to a discussion as they have so many other demands upon their time. Fortunately, participating in the tutorial gave them the opportunity to discuss educational goals and strategies intensively and holistically, and they

were also able to share their knowledge and gather many ideas from each other. After they returned to Japan, we conducted extensive discussions based on their reports. Needless to say, feedback from the participating students was included in these discussions. As a result of this process we developed our interprofessional education curriculum. Further, we established the aforementioned Center for Interprofessional Education to evaluate and improve our medical education on a continuous basis.

As for our graduate students, we initiated the Overseas Research Supporting Program to enable up to 8 students a year to study overseas. Three students studied abroad under this program in 2011.

As shown above, we vigorously support overseas training and study for young researchers and students through the programs we have recently initiated.

TMDU has student exchange agreements with many universities. The school also has many international students. As of May 2012 there were 210 international students in total at TMDU. 188 are in a graduate program; 7 are undergraduates; 12 are research students who are preparing to enter a graduate program; and 3 are studying Japanese language in preparation for graduate-level study. 89 of these students are Monbukagakusho Scholars (i.e., they are studying thanks to a scholarship offered by the Japanese government), and 121 are supported privately. As for nationality, more than 90% of our international students are from Asia. A large number of the international students in Japan who study in interdisciplinary medical/dental and engineering fields are at TMDU.

Our graduate international students who have returned to their own countries play an active part in education, research, health care and administration of health policy. They also contribute to health care professional training and collaborative research in Japan as well as in their respective countries through close interaction and exchange of information with us.

In addition, we have held the “International Summer Program (ISP)” every year since 2009 to promote excellent young researchers and students, primarily from Asia. Every year we set a research theme and invite students from overseas to apply. We typically receive 80 to 90 applications and select approximately 25 invitees. The invited participants attend lectures and a symposium, visit laboratories, talk with potential advisors, and learn about the possibilities of studying at TMDU. After conducting in-



terviews with interested participants, we accept up to 4 students who are very keen to pursue graduate study at TMDU. We offer these students a special scholarship. At this time, more than 10 ISP alumni, including those who received a Monbukagakusho Japanese government scholarship, are enrolled in our graduate school.

We are also glad to report that the Japanese government has acknowledged our international strategy. In 2012, two large projects, the “Project for Promotion of Global Human Resource Development,” which focuses on sending undergraduate students to developed countries, and the “Re-inventing Japan Project: Inter-university exchange program toward medical and dental networking in Southeast Asia,” which focuses on exchanging students and researchers with partner universities in Thailand, Indonesia, and Vietnam, were approved by the Japanese government. These two projects will help us advance our internationalization efforts. In being awarded these two projects, it is recognized that all TMDU members will work toward our internationalization goals. In another words, by accepting these awards we are also accepting the responsibility to meet the Japanese government’s high expectations regarding these projects and their outcomes.

It is thus important for all of us at TMDU to understand that we need to develop our international strategies continuously and collaborate in our efforts to expand and improve TMDU’s international exchange and cooperation activities.

Takashi Ohyama

Takashi Ohyama, President

Medical Education Alliance Agreement with Harvard University

Pursuing Innovation in Medical Education to Lead Not Only Asia But the World

Since 2002, Tokyo Medical and Dental University and Harvard University have undertaken a number of initiatives based on our medical education alliance. The main features of this medical education alliance are the appointment of faculty members to study at Harvard Medical School, the invitation of faculty members from Harvard to visit TMDU, and externships for students in clinical clerkships at Harvard.

A TOTAL OF 130 faculty members have pursued studies at Harvard to date. The faculty members who have studied at Harvard Medical School have applied their learning to develop a unique education program at TMDU. This has led to innovations such as the block system, clinical clerkships, and Interprofessional Medical and Dental Education. In 2004, externships began for sixth-year students of the Faculty of Medicine, and, to date, a total of 64 students have taken part. During these three-month externships, students care for actual patients, give presentations on their cases and decide treatment plans, all in English. These externships are also offered as the elective curriculum subject Clinical Clerkships with Harvard University Students.

Professor Yasuhito Yuasa, Dean of the Faculty of Medicine, participated in a faculty exchange in September 2012. He says that the medical education alliance agreement with Harvard University has had an impact that goes beyond innovation in the educational curriculum.

“This alliance has contributed significantly to the reputation of the medical education at this university, not only in Japan but also in various other countries, particularly in Asia. Also, a good number of candidates in recent years have cited the option to take an externship at Harvard Medical School as one of the reasons for choosing TMDU.”

The reputation of this medical education alliance is the catalyst for additional new education and research projects.

In 2005, in recognition of our work with Harvard University, the Program to Train Cosmopolitan Medical Professionals and Researchers Who Can Thrive in Global Competition was selected to receive Special Funds for Education and Research by the Japanese government. In 2011, the university was chosen by the Japan Society for The Promotion of Science (JSPS) for the Strategic Young Researcher Overseas Visits Program for Accelerating Brain Circulation, and in 2012 for the Project for Promotion of Global Human Resource Development, placing its initiatives towards the training of doctors and medical re-

The History of the Medical Education Alliance

Looking Back on Ten Years' Partnership in Medical Education

Ten years have passed since TMDU and Harvard University started their alliance in medical education. A total of 130 academic staffs from TMDU have participated in the education and training program at Harvard University as exchange staff. A total of 64 sixth year students of the School of Medicine have participated in externships in clinical training at the Harvard Medical School. We have also made improvements in our curriculum incorporating the recommendations of faculty invited from Harvard University.



2001

Decision to focus on education as a priority issue for reform.

2002

Signed a medical education alliance agreement with Harvard University. The 2002 Curriculum starts.

2004

Incorporation as a National University. Clinical clerkships at Harvard University begin.





On November 4, 2012 a symposium was held with President Ohyama on the topic of TMDU's future strategy.

searchers on a global level.

The Strategic Young Researcher Overseas Visits Program for Accelerating Brain Circulation sends young researchers from the university's Faculty of Medicine in the fields of nephrology, gastroenterology, molecular and cellular biology, angiocardiology, and psychiatry to pursue international joint research in the research facilities at Harvard Medical School. So far the university has sent nine young researchers, and in the future, the aim is to expand the range of joint research sectors and domains.

"We need to continue our innovations in medical education and raise the level of our research capabilities. With the Strategic Young Researcher Overseas Visits Program for Accelerating Brain Circulation, we can make joint use of Harvard University's research facilities. Naturally this encourages personal exchanges, and I think we can expect this to be reflected in the research results," says Professor Yuasa.



"Aiming to enhance our research capabilities in step with education"

Looking back, the medical education alliance agreement with Harvard University started from the strong relationship of trust between former President Akio Suzuki and Harvard University. Professor Yuasa went on to consider the future of the medical education alliance.

"We plan to continue sending students to Harvard for clinical clerkships as we do now. In addition, we should take the ten years of the alliance with Harvard Medical School and selection for the Project for Promotion of Global Human Resource Development as an opportunity to advance to the next level. For example, we're thinking of extending the content of the alliance beyond medical education so that students can attend MBA and pedagogy lectures in combination with the Harvard University Summer Program, as well as holding lectures in medical English by Harvard University academic staff."

The day is steadily approaching when TMDU will be the global leader in medical science.

between TMDU and Harvard University

2005	2006	2009	2010	2011	2012
The university's Program to Train Cosmopolitan Medical Professionals and Researchers Who Can Thrive in Global Competition was selected to receive Special Funds for Education and Research.	Clinical clerkships begin to be offered. 	The intake of the School of Medicine reaches 90 students. 	The intake of the School of Medicine reaches 100 students. (regional quota 4, researcher quota 1)	The intake of the School of Medicine reaches 105 students. Transition to the 2011 Curriculum. Selected for the Strategic Young Researcher Overseas Visits Program for Accelerating Brain Circulation by the Japan Society for the Promotion of Science (JSPS).	Introduced Interprofessional Medical and Dental Education. Selected for the Project for Promotion of Global Human Resource Development. Participation in the Re-Inventing Japan Project. Prepared and distributed the Clinical Clerkship DVD for MEXT's 2011 Commissioned Research on Promoting Radical Reform of Universities.

The Core Research Partnership Structure for Japan and West African Sub-Region: For the Next Step of Exchange by Young Researchers from Both Sides

Ghana-Tokyo Medical and Dental University Research Collaboration Center

Nobuo Ohta
MD, PhD

Professor, Environmental
Parasitology, TMDU

Research Collaboration in Africa

Our international research collaboration project between Japan and Ghana was started in 2008 as a member of the program of Ministry of Education, Culture, Sports and Technology (MEXT) entitled “Program of Founding Research Centers for Emerging and Reemerging Infectious Diseases.” The aim of this program was to promote on-site research on infectious diseases to improve public health of Japan and each counterpart country, and also develop human resource in the field of infectious disease research. We are now in the second phase of the MEXT program under the new title of “Japan Initiative for Global Network on Infectious Diseases (J-GRID).” From a global point of view, sub-Saharan Africa is one of the hot and urgent areas for controlling infectious diseases. In J-GRID’s structure, there are only two projects being implemented in Africa. One of the two projects is our Ghana center in West Africa, and the other one is the Zambia center in east Africa. In this sense, our situation in the MEXT project is quite important, and, also, it is expected to expand more intensive research collaboration in Africa.

The counterpart institution of our MEXT project in Ghana is the Noguchi Memorial Institute for Medical Research (NMIMR). By the use of the scheme, TMDU founded its international collaboration center at NMIMR in 2008. Since then, two

researchers, Professors Eiji Ido and Takashi Suzuki, have been dispatched to the collaboration center at NMIMR, and they are in charge of research implementation and also of exchange of students and researchers between TMDU and NMIMR. After five years operation of our collaboration activities, we have to consider the next step for our collaboration center. Several activities have been added to our project to step forward in the future.

Education and Training in Ghana

Our international collaboration center at NMIMR was founded to promote exchange not only in research, but also in education and training. For the latter purpose, several schemes of mutual visits to/from Ghana were agreed, and more than 15 young Japanese and Ghanaian staff and students have visited each other in the past two years. To provide experiences of African situation for young students and researchers, we have sought to establish a scheme to dispatch Japanese undergraduate students to Ghana. In the past two years, medical students from TMDU were dispatched to NMIMR to join the MEXT research project. In the academic year 2012, TMDU started official support for dispatched students by covering part of their living costs in Ghana, through which students can stay more easily to accomplish research on tropical diseases.

The Asian-African Research Forum on Emerging and Reemerging Infections 2013 was hosted by the Ghana-TMDU Center.





- ① TMDU students at "Week-end party" at the University of Ghana.
- ② Medical students from TMDU visited the Embassy of Japan in Accra.
- ③ Lecture on infectious diseases by Professor Ido in Accra.

It is a big opportunity for Japanese medical students to experience the different culture, social structure, and medical demands that they can find in Ghana. One such visiting student was inspired to become a researcher of tropical medicine, and applied to the TMDU graduate school this year.

Visits of Japanese young people to Ghana through the collaboration center activities seem to have a good influence on Japanese residents in Ghana as well. Mr. Yoshikazu Tamura, President of Japanese Association in Ghana, understood the importance of these visits by medical students of TMDU to Ghana, and he kindly proposed to provide air tickets for their travel between Tokyo and Accra. In December 2012, Mr. Tamura and President Ohyama signed agreement papers, and tickets were donated to two students who were scheduled to visit NMIMR in January 2013.

Monthly Newsletter on the Homepage

For informational transparency of the Ghana-TMDU center as part of the international exchange activities of TMDU, it is important for our activities in Ghana to get wider attention and understanding by the Japanese side. For this purpose, the Ghana-TMDU center started to distribute a newsletter through the homepage of TMDU. This publication is distributed monthly, and the contents are not limited to research outputs. Indeed, an introduction of Ghanaian culture is rather more concentrated. The first issue was in October 2011, and the latest issue introduced activities of dispatched students from TMDU to NMIMR.

AARF 2013

The biggest event of our collaboration project in 2012 was the organization of the Asian-African Research Forum on Emerging and Reemerging Infections (AARF). The forum is held as an annual meeting on scientific outputs from each research collaboration center in the J-GRID pro-

gram. AARF in the fiscal year of 2012 (AARF 2013) was held on January 23 and 24, and the venue was Akio Suzuki Memorial Hall, TMDU.

The number of participants for AARF 2013 was 323 in total, and among them, foreign participants were 85 (26.3%). They came from 11 countries, including China, Thailand, Vietnam, Philippines, Indonesia, India, Myanmar, Kenya, Zambia, Congo and Ghana. Our Ghana project was the host of AARF this year, and we planned to have discussion on the matters of infectious diseases in Africa.

Professor Satoshi Omura, from Kitasato Institute, related his experience in discovering ivermectin, a highly effective drug for many parasitic helminthes causing "Neglected Tropical Diseases" in Africa. Our other specially invited speaker, Dr. Heinz Feldmann, of the National Institute of Allergy and Infectious Diseases, USA, gave a presentation on endemic episodes of Ebola fever in Africa. More than 120 papers were submitted, and all participants enjoyed active and fruitful discussion during AARF 2013.

As mentioned above, activities of the Ghana collaboration center at NMIMR are successful, and the new Director of NMIMR, Professor Kwadwo A. Koram, is willing to continue more intensive exchanges between TMDU and NMIMR. We have established a good partnership in these years, and our mutual understanding is to expand collaboration activities. The current structure of collaboration is limited to areas of limited research fields. However, TMDU and NMIMR have more possible resources such as dental research and biomedical research. We will continue to discuss how to expand our research partnership structure, for example by inviting more external researchers for our mutual benefit in future.

The Newsletter of the Ghana-TMDU Collaboration Center has been released monthly since 2011.



TMDU Colorectal Cancer Screening Project: Expanding from Santiago to Other Cities in Chile, and from Chile to Ecuador and Paraguay

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

Yoshinobu Eishi
MD, PhD
Professor, Human
Pathology, TMDU

LACRC Activities in 2012

The Latin America Collaborative Research Center (LACRC), located within Clinica Las Condes (CLC) in Santiago, Chile, is operated by staff from three TMDU departments and a CLC secretary (Fig. 1). Dr. Koji Tanaka has been working as an endoscopist on the project since January 2012. He works at the training center of the Chilean-Japanese Institute of Digestive Diseases at the National Hospital San Borja Arriaran. Dr. Hiroshi Kawachi has been working as a pathologist on the project since March 2012. He reviews all pathology samples and clinical data obtained by the colorectal cancer screening project so as to standardize diagnostic criteria. Dr. Maki Kobayashi has been working as a molecular biologist on the project since July 2012. She is supported by a JSPS grant to perform molecular research using materials obtained from the project. Thanks to support from the three participating TMDU departments, their staff members, and the able assistance of Ms. Rieko Shinomiya of CLC, the LACRC secretary, six TMDU students were able to complete their project semester, from October 2012 to February 2013, at LACRC.

① TMDU staff members associated with LACRC and the LACRC secretary in front of the LACRC office. From left: Dr. Kawachi, Ms. Shinomiya, Prof. Eishi, Dr. Kobayashi, Mr. Sekine, and Dr. Tanaka.



② The Colorectal Cancer Screening Project will eventually expand to eight cities in Chile.



Colorectal Cancer Screening in Chile

The pilot project for colorectal cancer screening has expanded from Santiago to other cities in Chile, including Punta Arenas, Valparaiso, and La Serena, and will eventually have a presence in at least eight cities (Fig. 2). The project has already led to the early diagnosis of 14 cancer patients via immunological fecal occult blood test screening of 2,200 people in Punta Arenas. The resultant detection rate of 0.64% is higher than the rates reported in other areas in Chile. In Valparaiso a new endoscopy center for the project is now under construction. In La Serena, a pilot screening project is now ready to be initiated from this March at the Hospital San Pablo de Coquimbo, in collaboration with the University of Catolica Norte. A TMDU mission will visit La Serena for a one-day conference this August, at which they will be able to assess the progress made by this newest branch of the pilot screening project.

New Training Center for the Project

The endoscopists and pathologists who will participate in the national screening project will be trained at the Chilean-Japanese Institute for Digestive Diseases in Santiago. The Institute's endoscopy unit has been renewed and enlarged by a USD\$500,000 fund from the Ministry of Health. The training center will be used for training doctors from other Latin American countries as well as from Chile. TMDU will give each successful trainee a certificate that will allow them to participate in the relevant national program held in their home cities and countries. Mr. Hidenori Murakami, the Japanese ambassador to Chile, expressed his gratitude for the project to a visiting delegation from TMDU and supporting Chilean doctors at a party held at his house on August 22, 2012 (Fig. 3).



TMDU Activities in Ecuador

TMDU mission members, including Professor Ohno, the Trustee for Planning and International Exchange, and Professors Sugihara, Kawano, Eishi, and Yoshida, and LACRC staff members, Drs. Tanaka, Kawachi, and Kobayashi, visited Quito, Ecuador, for a one-day TMDU conference on digestive diseases. Professor Ohno gave a presentation on brain metastasis of colorectal cancer, and, at the end of the conference, he signed a collaboration agreement between TMDU and the Ministry of Public Health of Ecuador (Fig. 4). The LACRC staff members plan to visit Quito again in February to provide a one-week training course at Hospital Pablo Arturo Suarez, where the colorectal cancer screening project is already underway.

TMDU's First Visit to Paraguay

In November 2012, TMDU President Takashi Ohyama and Professors Eishi and Yoshida visited Paraguay upon an official invitation from the President of Paraguay, Dr. Federico Franco (Fig. 5). President Franco is a medical doctor and he is eager to implement a colorectal cancer screening program in Paraguay. The meeting between TMDU, CLC, and the Paraguayan government was arranged through the kind efforts of Professor Ricardo Fretes, who is a top leader of the Latin American Association of Colorectal Surgery. At the meeting, President Ohyama expressed his intention that TMDU will support the project in Paraguay through the activities of LACRC and CLC. President Ohyama also met several Paraguayan medical doctors of Japanese descent who had previously attended JICA training courses in Japan, and asked them to support TMDU activities in Paraguay.

Japanese Grants for the Project

The Project is supported by grants, and will be



able to expand upon the receipt of newly-applied for grants. For example, a JSPS grant supports TMDU's research activities for molecular analysis of hereditary colorectal cancer patients in Chile. Another JSPS grant to support an analysis of the effectiveness of the endoscopy training held at the Chilean-Japanese Institute is under application. Funding for a third national training course to be held by TMDU and CLC, to train personnel from other Latin American countries, is currently under review by JICA. In addition, the Japanese Ministry of Economy, Trade and Industry recently encouraged mutual collaboration between TMDU and Japanese enterprises in distributing Japanese technologies and products throughout the region.

Project Semester Participation

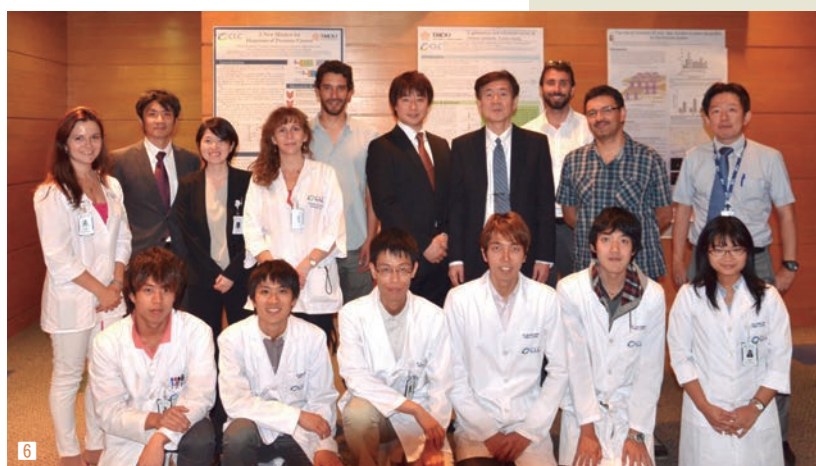
Six 4th year medical students from TMDU arrived in Chile in October, 2012 to study at CLC and the University of Chile. These six students are the third generation of project semester students to do research at LACRC since 2010. In all, 18 TMDU medical students have had 5-month stays in Chile. They all enjoyed the Chilean culture, food, and climate. The current students made poster presentations of their research on 21 January 2013, under the supervision of the assembled Japanese and Chilean professors (Fig. 6).

[3] The Japanese ambassador to Chile, Mr. Hidenori Murakami (front row, third from left), invited Chilean doctors, LACRC staff and TMDU visitors to his house to express his gratitude for the cancer screening project.

[4] Prof. Kikuo Ohno (center), TMDU Trustee for Planning and International Exchange, at the signing of the agreement to collaborate with the Ministry of Public Health of Ecuador towards implementing a national colorectal cancer screening program in Ecuador. Prof. Eishi is on the far right.

[5] President Ohyama visited Paraguay upon a formal invitation by the President of Paraguay, Dr. Federico Franco (second from left, holding a gift from President Ohyama). Prof. Eishi is on the far left.

[6] TMDU students at the poster presentation held at CLC. Front row, from left: Mr. Tashiro, Mr. Yanagawa, Mr. Sega, Mr. Inoda, Mr. Akiyama, and Ms. Ohki. Standing behind them are CLC staff, Chilean professors, TMDU staff members, advisors and researchers.



Overseas Dental Seminar and Consultation Helps Japanese Residents in Thailand with Dental Problems or Concerns

CU-TMDU Research and Education Collaboration Center, **Thailand**

Yoko Kawaguchi

DDS, PhD
Professor, Oral Health
Promotion, TMDU

Dental Support Activities for Japanese Residents in Thailand

One of the purposes of the CU-TMDU Research and Education Collaboration Center is to provide health support for Japanese residents in Thailand. On September 9, 2012, “The 1st Overseas Dental Seminar and Consultation” was held for Japanese residents at Imperial Queen’s Park Hotel, Bangkok. The CU-TMDU Research and Education Collaboration Center organized the event with the support of the Japan Dental Alumni of Thailand (JDAT). The participants of this seminar and consultation were schoolchildren and their guardians of the Thai Japanese Association School in Bangkok.

After the opening address by TMDU President Takashi Ohyama, Professor Ikuko Morio (Director of the International Exchange Center) gave a speech outlining the history, current projects, and

future endeavors of the CU-TMDU Center. Eight lecturers from TMDU presented on variety of dental topics in the seminar.

At the same time, dental consultations with Japanese residents in Thailand were held. Each consultation was carried out in a private compartment by a two-person team consisting of a member of the TMDU and a Japanese-speaking Thai dentist (JDAT member) who have the same specialty. In all, 75 Japanese residents in Thailand who had particular problems or concerns received advice on dental treatment in Japan and Thailand.

Continuing these kinds of activities and expanding the amount of information available to Japanese living in Thailand must be necessary for future CU-TMDU center activities. Based on this experience, we have high hopes for our next projects.

Voluntary Contribution in Mobile Dental Services by President Ohyama

The Faculty of Dentistry of Chulalongkorn University provides mobile dental services for Thai people living in the north in dentistless areas, who cannot otherwise receive dental treatment, as a Royal Project. In December 2012, President Ohyama participated in this project as a volunteer and provided dental treatment to local people. Both Thai dentists and Thai people highly appreciated his contribution, as President Ohyama made excellent dentures and also directly talked

Seminar Topics and Lecturers

1. Prevention and treatment of dental caries
Dr. Yoshiaki Ono (Pediatric Dentistry)
2. Basic knowledge of orthodontic treatment
Dr. Yoshiro Matsumoto (Orthodontics)
3. Basic knowledge of bad breath prevention
Dr. Yoko Kawaguchi (Fresh Breath Clinic)
4. Tooth whitening
Dr. Naoko Seki (Cariology and Operative Dentistry)
5. Bruxism, metal-free dental treatment
Dr. Yuji Fukui (Fixed Prosthodontics)
6. Prevention and treatment of periodontal disease
Dr. Hiroaki Kobayashi (Periodontics)
7. Self-check of oral cancer
Dr. Yusuke Nakajima (Maxillofacial Surgery)
8. Dental implant treatment
Dr. Shinji Kuroda (Dental Implant Clinic)



President Ohyama giving the opening address for “The 1st Overseas Dental Seminar and the Consultation.”



with people in their own language.

Celebration Meeting with JDAT Members

JDAT is an alumni society made of members who have studied dentistry in Japan. The society has an important role in activating academic exchanges between TMDU and institutions in Thailand. Since its members can speak Japanese and understand Japanese culture, there is a great opportunity to support Japanese residents in Thailand with dental care.

On September 8, President Ohyama and TMDU staff joined the JDAT meeting to celebrate Dr. Thosapol Piyapattamin's inauguration as the Dean of the Faculty of Dentistry at Naresuan University. Dr. Piyapattamin is the second TMDU graduate to become a dean of a dental school in Thailand, after Dr. Naronsak at Srinakharinwirot University.

It was indeed a great and warm-hearted meeting for TMDU alumni both in Japan and Thailand. There was a big round of applause from everyone when President Ohyama gave the congratulatory address, in Thai, for Dr. Piyapattamin's achievement.

TMDU Students' Program in CU

In fiscal year of 2012, two 4th year medical students spent five months in CU during their project

semester. Ten 4th year dental students (from the Schools of Dentistry and Oral Hygiene) also spent one week in CU under the overseas dental training program. The lecture the students received at the CU-TMDU Center was broadcast to TMDU by the Video Conference System (VCS) and a lively Q&A session between Tokyo and Bangkok ensued.

The VCS system was also used for the graduate school lecture sessions and business meeting between TMDU and CU-TMDU Center. As the time difference is only 2 hours between Tokyo and Bangkok, it is very convenient to hold meetings between the two schools.

Coordinators of CU-TMDU Center

Dr. Atiphan Pimkhaokham (Faculty of Dentistry, CU) has been working as a coordinator of CU-TMDU Research and Education Collaboration Center, and has been the main administrative supporter of the center's activities until August 1, 2012, when Mr. Katsuji Onoda (International Exchange Center, TMDU) was also appointed as a coordinator. Therefore we have coordinators from both TMDU and CU. Now that the CU-TMDU Center is expected to expand its activities as a "center" of Southeast Asia, it will contribute a lot for a newly established TMDU project, which aims to harmonize and develop medical and dental education network in Southeast Asia and Japan.

① The Royal Project mobile dental service serves Thai people who live in the north in dentistless areas and is managed by CU staff.

② President Ohyama participated in the project as a volunteer and provided dental treatments for local people.

③ President Ohyama, Dr. Piyapattamin (Dean) and JDAT members of Naresuan University.



The two coordinators of the CU-TMDU Center: Dr. Atiphan Pimkhaokham (right) and Mr. Katsuji Onoda (left).

TMDU and JDAT participants at the Dental Seminar and Consultation 2012.

International Summer Program: Report on ISP2012 and Announcement of ISP2013

TMDU is continuously working to increase its international profile and serve the international community. In addition to sending students and faculty members to partner institutions such as Harvard and Imperial College and to our overseas research centers in Ghana, Thailand and Chile, a key part of our internationalization effort is the recruiting of top students and researchers worldwide.

Hidehiro Mizusawa

Professor, Department of
Neurology and Neurological
Science, TMDU

Kevin Cleary

Associate Professor,
International Exchange Center,
TMDU

FOR THE PAST four years the TMDU International Summer Program has been an increasingly important part of our international outreach. Each year's ISP brings approximately 25 students and young researchers to the TMDU campus for four days of lectures, lab visits, cultural introductions, social events and other activities.

As of May 1, 2012, there were 210 international students studying at TMDU, and many of them are ISP alumni. With the advent of the ISP Special Selection program, which was introduced as part of ISP2012, we look forward to the ISP and its alumni having an even deeper integration with our graduate schools and university community as a whole in the coming years.

In late 2011, a working group to organize the fourth International Summer Program, ISP2012, was convened under the leadership of Professor Kikuo Ohno, the Trustee of Planning/International Exchange. Professor Hidehiro Mizusawa of the Department of Neurology and Neurological Science was chosen to chair the ISP2012 Working Group, which included representatives from several departments, especially those involved with neuroscience. The faculty and staff of the International Exchange Center also participated actively

in the planning of ISP2012. The working group finalized the theme, "Brain and Mind: Neuroscience Up-to-date" and invited leading researchers such as Professor Don Cleveland of the University of California, San Diego, and Professor Shinsuke Shimojo of the California Institute of Technology, to speak at ISP2012, which was held August 26 to 29, 2012.

As with previous ISPs, ISP2012 featured a two-day Lecture Course, a Poster Session, and an International Symposium. As mentioned above, ISP2012 also featured our first "ISP Special Selection," in which selected participants were able to take an examination to enter the Ph.D. program at TMDU and become eligible for a full scholarship. In addition to the presentations, all of the participants enjoyed meeting researchers, attending various social functions on offer, and getting to know other invitees and presenters.

Along with Professors Cleveland and Shimojo, featured speakers at ISP2012 included Professors Takeo Yoshikawa and Atsushi Iriki, both from RIKEN Brain Science Institute, and several of the TMDU-based researchers who are conducting leading-edge research in the field: Professor Itsuki Ajioka, Professor Hidehiro Mizusawa, Profes-



Prof. Mizusawa at the Social Hour party.



Dr. Don Cleveland gave a lecture and a symposium presentation.

Tokyo Medical and Dental University

5th International Summer Program (ISP2013)

August 26th - 29th at the TMDU campus, Tokyo, Japan

Biomaterials: From the Laboratory to the Clinic

Bringing together students and young scientists from Asia to study with leading international researchers in the field

We will provide support to selected students and young scientists from Asia to attend ISP2013 (including airfare and onsite accommodation). Please visit the website for more information.

Organized by: Tokyo Medical and Dental University

To register: Please apply via the International Exchange Center (IEC) website

<http://www.tmd.ac.jp/TMDU-e/isc/isp2013>

**Aug. 27 - 28 (Tue & Wed)
Lecture Course**

**Aug. 29 (Thu)
ISP Symposium**



sor Toru Nishikawa, Professor Hitoshi Okazawa, Professor Masahiko Shimada, Professor Yuriko Sugiuchi, Professor Masato Taira, Professor Kohichi Tanaka, and Professor Sumio Terada.

A new development for ISP2012 was the holding of mini-lectures as part of the lab visits. In all, eight departments hosted lab visits, introduced their work and held mini-lectures for ISP2012 participants.

Applications to ISP2012 were very strong, in quantity and quality. For the general program we received 46 applications from 15 countries. Of these, 8 were selected, representing 7 countries. For the ISP Special Selection we received 22 applications from 7 countries, of which 16, from 5 countries, were accepted. Overall, the 24 invited participants were from 10 countries: Bangladesh, China, India, Korea, Laos, Malaysia, Myanmar, Taiwan, Thailand, and Vietnam. An additional participant attended at private expense. We are glad to report that the feedback from these participants was very positive; for example, 96% reported that “their interest in studying at TMDU became stronger” as a result of ISP2012.

At the Social Hour, which was held on the third evening of ISP2012, the invited participants, invited speakers and TMDU faculty and students gathered together at the Faculty Lounge on the top floor of the M&D Tower. After President

Takashi Ohyama officially welcomed the participants to the reception, the window shades were raised, revealing the stunning night view from the 26th floor. Everyone enjoyed a night of talking, eating and snapping pictures.

The next day, the Special Selection participants took an entrance exam for the TMDU Graduate School. At this time, 8 of them plan to enter TMDU from 2013 as a result of passing the exam, and several of these new international students will receive a full scholarship to support their Ph.D. studies.

The 5th annual ISP, ISP2013, will be held August 26–29, 2013, with the theme “Biomaterials: From the Laboratory to the Clinic.” The planning for ISP2013 will be led by Professor Kikuo Ohno, the Trustee for Planning/International Exchange, and Professor Kazuo Takakuda of the Institute of Biomaterials and Bioengineering, who will chair the ISP2013 Working Group. Continuously updated information on ISP2013 will be made available on the website of the International Exchange Center throughout the planning period. The IEC website also has full information on the first four ISPs, which helps students and young researchers across Asia learn more about this increasingly popular international outreach program.

① Dr. Hajime Karasuyama and a participant from Vietnam.

② Prof. Masato Taira listening to a presentation by a participant from Bangladesh at the ISP2012 Poster Session.

③ Participants at a mini-lecture, a new facet of ISP Lab Visits.

④ ISP2012 speakers and invited participants at the Social Hour party on Tuesday evening.

ISP2012 Working Group

Prof. Hidehiro Mizusawa (Chair), Prof. Itsuki Ajioka, Prof. Hajime Karasuyama, Prof. Akinori Kimura, Prof. Ikuko Morio, Prof. Hitoshi Okazawa, Prof. Takashi Ono, Prof. Masato Taira, Prof. Kazuo Takakuda, Prof. Kohichi Tanaka, and Prof. Kei Watase.

Observers: Assoc. Prof. Kevin Cleary, Assoc. Prof. Matazo Izutani, Assoc. Prof. Koji Masuda, Assoc. Prof. Yoko Okita, Prof. Yoshihiro Takemoto, Prof. Takeshi Yoshida.

⑤ A list of the departments that held mini-lectures.

ISP2012 Mini-Lectureas

1. Department of Cell Biology
Prof. Takao Nakata
2. Department of Medical Biochemistry
Prof. Yutaka Hata
3. Molecular Genetics Division,
the Center for Brain Integration Research
Associate Prof. Kei Watase
4. Department of Neurology and Neurological
Science
Prof. Takanori Yokota
5. Department of Neurosurgery
Senior Assistant Prof. Tadashi Nariai
6. Department of Pharmacology and Neurobiology
Senior Assistant Prof. Hironao Saegusa
7. Department of Physiology and Cell Biology
Assistant Prof. Atsushi Tanaka,
Mr. Quy Pham Nguyen (graduate student)
8. Department of Systems Neurophysiology
Prof. Izumi Sugihara
Senior Assistant Prof. Keiko Izawa
Assistant Prof. Mayu Takahashi



Representatives from Eight Countries in Southeast Asia Exchange Views on Dental Education

A special event, entitled "Development of Dental Education in Asia: Workshop and Exchange," was held at TMDU November 5-7, 2012. At this event, TMDU Faculty of Dentistry staff and representatives from 15 dental schools located in Southeast Asia with which TMDU has concluded an academic exchange agreement met to discuss dental curricula, past, present and future, and related issues.

Ikuko Morio

DDS, PhD
Director, International
Exchange Center, TMDU

THE "INFORMATION SHARING on Dental Education" workshop was held in a meeting room of the Faculty of Dentistry (Building No.1, 7th floor). TMDU President Takashi Ohyama opened the workshop's afternoon session with a welcome address, and then an active exchange of opinions and discussions took place in an amicable, but suitably intense, manner. The workshop contents included: 1) Presentations on the features of the dental curriculum at each participating school; 2) A group discussion regarding the development of each school's current curriculum, the importance of English education, and the possibility of enabling a credit transfer system in the future; and 3) A tour of the TMDU Dental Hospital.

After the presentations and discussions, the representatives all signed the "Tokyo Declaration on the Development of Dental Education in Asia: Workshop and Exchange" agreement. The Declaration holds that we all aim to actively pursue exchanges of students, staff, and research, and co-operate with each other to develop dental education.

Four groups toured the TMDU Dental Hospital. These groups were led by Professor Yoko Kawaguchi, Executive Advisor to the President (Plan-

ning and International Exchange) and Professor and Chairperson of the Oral Health Promotion Section; Junior Associate Professor Jun Tsuruta of the Dental Education Development Section; and Junior Associate Professor Yuji Fukui and Assistant Professor Naoko Seki of the International Exchange Center. The four groups toured the TMDU Dental Hospital and were welcomed to Pediatric Dentistry by Junior Associate Professor Yoshiaki Ono, to Periodontics by Junior Associate Professor Satsuki Hagiwara, and to the Oral Surgery Ward and Operation Rooms by Assistant Professor Kae Tanaka. The participants also visited the TMDU Dental Museum and expressed interest in the history of dentistry in Japan.

The visitors then had the opportunity to tour the GC headquarters in Chiyoda-ku and the GC factory in Gotemba, where they learned in detail about the manufacturing process and special features of many dental materials that are used in their countries.

This workshop marked the first time for TMDU to invite such a sizable group of deans or associate deans for academic affairs to Tokyo for a meeting. The participants all found the workshop to be very meaningful and helpful in

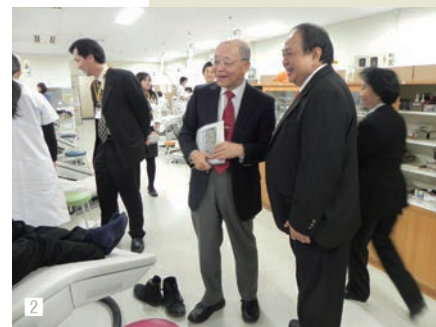
strengthening the ties we share. To help us work together to develop and harmonize dental education, we are planning to hold a related symposium in 2013 at which we will continue the sharing of information and the discussions that we had at this event, with the aim of further improving the dental curricula at each of our institutions.

President Ohyama (center left), Prof. Tagami (center right), and representatives from 15 dental schools located in Southeast Asia.



① TMDU faculty members explaining the details of the education program at the question and answer session (from left, Dr. Jun Tsuruta and Prof. Tagami).

② During the TMDU Dental Hospital tour (center left: Dr. Yoshiaki Ono, center right: Dr. Bambang Irawan).



Distinguished Guests from Dental Schools in Southeast Asia

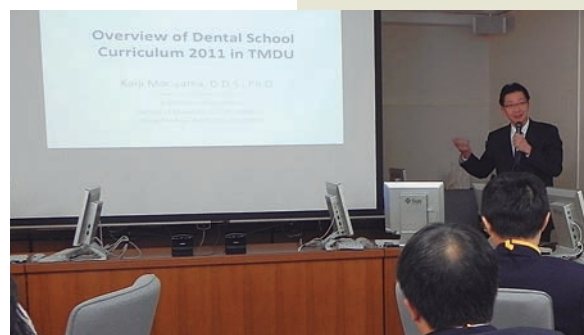
- Dr. Suchit Poolthong (Dean, Chulalongkorn University, Thailand)
- Dr. Narongsak Laosrisin (Dean, Srinakharinwirot University, Thailand)
- Dr. Thongnard Kumchai (Dean, Chiang Mai University, Thailand)
- Dr. Thosapol Piyapattamin (Dean, Naresuan University, Thailand)
- Dr. Kewalin Thammasitboon (Vice Dean for International Relations, Prince of Songkla University, Thailand)
- Dr. Teekayu P. Jorns (Assistant Dean for International Affairs, Khon Kaen University, Thailand)
- Dr. Pornpoj Fuangtharnthip (Mahidol University, Thailand)
- Dr. Bambang Irawan (Dean, Universitas Indonesia, Indonesia)
- Dr. Grace Ong (Dean, National University of Singapore, Singapore)
- Dr. Norsiah Yunus (Deputy Dean, University of Malaya, Malaysia)
- Dr. Sun Sun Win (Professor, Institute of Dental Medicine, Yangon, Myanmar)
- Dr. Le Duc Lanh (Dean, The University of Medicine and Pharmacy at Ho Chi Minh City, Vietnam)
- Dr. Truong Manh Dung (Dean, School of Odonto-Stomatology, Hanoi Medical University, Vietnam)
- Dr. Lay Vuthy (Vice Dean of Faculty of Dentistry, University of Health Sciences, Cambodia)
- Dr. Bounnhong Sidaphone (Associate Dean for Academic Affairs, University of Health Science, Lao PDR)

TMDU Participants

- Dr. Takashi Ohyama (President)
- Dr. Kikuo Ohno (Trustee / Vice-President, Planning and International Exchange)
- Dr. Yoko Kawaguchi (Executive Adviser to the President (Planning and International Exchange), Professor and Chairperson, Oral Health Promotion)
- Dr. Junji Tagami (Dean, Faculty of Dentistry; Dean, Graduate School of Medical and Dental Sciences; Professor and Chairperson, Cariology and Operative Dentistry)
- Dr. Masahiko Shimada (Director, Dental Hospital, Associate Managing Trustee (Dental Treatment), Professor and Chairperson, Orofacial Pain Management)
- Dr. Keiji Moriyama (Director of Dental School, Professor and Chairperson, Section of Maxillofacial Orthognathics)
- Dr. Kouji Araki (Associate Director, Center for Education Research in Medicine and Dentistry (MD center), Professor and Chairperson, Educational System in Dentistry)
- Dr. Ikuko Morio (Director, International Exchange Center, Professor and Chairperson, Dental Education Development)
- Dr. Takashi Ono (Vice Dean, Faculty of Dentistry, Professor and Chairperson, Orthodontic Science)
- Prof. Kevin Cleary (International Exchange Center)
- Dr. Jun Tsuruta (Dental Education Development Section)
- Dr. Yuji Fukui (International Exchange Center)
- Dr. Naoko Seki (International Exchange Center)
- Prof. Takashi Yoshida (Director, Office of International Exchange)
- Mr. Katsuji Onoda (International Exchange Center)
- Mr. Yoshinobu Goto (Office of International Exchange)
- Ms. Hirono Takeda (Office of International Exchange)



President Ohyama (left) welcomed the attendees and Prof. Tagami, Dean, Faculty of Dentistry (right), gave the Opening remarks.



Presentation by Prof. Keiji Moriyama about the undergraduate curriculum of TMDU's School of Dentistry.

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

Letters from TMDU Overseas Alumni

Letter 01

My days in Japan and China



Lian Duan
307 Hospital
from China



TIME FILES. I have been back to China for more than ten years now. But my days in Japan remain clear and vivid. I'm grateful to everyone at TMDU. There has never been a day passed without thinking of you. In 1996, with the help of Professor Hirakawa, I was able to study at TMDU in Japan with a government scholarship. During my stay in Japan, I had appendicitis. Professor Ohno organized the necessary

surgery and took care of me. In scientific research, Dr. Aoyagi offered me some advice and helped me get my Ph.D. I really appreciate their great help. My experiences in Japan changed my life. I was involved in a lot of surgeries which guided me to develop my special interests in revascularization surgery for Moyamoya disease (MMD). I had performed surgery on several patients in China before I went to Japan,



I performed surgery for these twins with moyamoya disease in China.

yet the outcome had not been satisfactory. The diagnosis of MMD was not clear. In addition, a large number of people diagnosed with definitive MMD were treated conservatively, including ischemia-onset type, hemorrhage-onset type, and asymptomatic type.

So I began giving lectures about MMD in China in order to educate and clarify the definition and diagnosis of the disease. Since then the interval between the disease's onset and the patient's admission was greatly reduced.

In the meantime I started to perform revascularization surgery on more patients. This was a hard beginning. Some patients were reluctant to receive this surgery. I still remember the first day when I performed the first double bypass surgery, which took quite a long time. As the number of our cases increased, an increasing number of patients benefited. More and more specialists in China realized the curability of this disease. Not until I became the director of my department of neurosur-



With my department fellows.

gery in 2006, did MMD become the focus in my department. Since then, my clinic and basic research has been focused on MMD. With the joint efforts of my staff, our department has gradually established its position as the leading academic institute for the study of MMD in China. So far, we have treated 3,000 MMD patients, the largest MMD number of cases in the world. In addition, a minimum of 300 new patients are on the waiting list at any given time.

As we become more and more experienced, the clinic and basic research of our department has made considerable progress, with much of our work published in Chinese and in international journals. For example, my group is the first one to investigate genetic risk factors of MMD in the Chinese population and we found that the functional polymorphism in the MMP-3 promoter might be associated with susceptibility to both MMD and FMMD in the Chinese Han population (Cerebrovasc Dis, 2010). From a study of pediatric patients, we reported that increased thyroid function and elevated thyroid auto-antibodies are associated with MMD (Stroke, 2011). Another major contribution of our group is the clinical features of MMD in mainland China. Patients had low rates of postoperative ischemic or hemorrhagic strokes, and the majority of patients had improved neurological functions after revascularization



At the 2012 Moyamoya Disease Forum in Beijing.

(Stroke, 2012).

In order to promote the collaborations of Moyamoya all over the world, we have successfully hosted the Moyamoya Disease Forum for three consecutive years from 2010. We invited Dr. Jeong Eun Kim from Seoul National University Hospital, Dr. Yoshiharu Matsushima, my mentor, from Tokyo Medical and Dental University in Japan, and Dr. Edward R. Smith, Director of Pediatric Cerebrovascular Surgery, Boston Children's Hospital, and many others. Through these collaborations, we have kept updated with the development of MMD and provide a framework for construction of evidence-based guidelines for the diagno-

sis and treatment of Moyamoya in China.

In 2008, I was invited by Professor Ohno to give a presentation in Japan about craniocerebral injury from motor vehicle accidents in China. I felt at home while I was there. On June 2, 2011, I was invited by Professor Miyamoto to attend the Asian Neurosurgical Conference on Moyamoya Disease in Kyoto. The conference provided an excellent opportunity for many MMD experts in Asia to meet and share the most recent findings about MMD. We are convinced that in the future we will eventually uncover the mystery hidden in this disease, and patients all over the world will benefit.

Letter 02

What I got from Japan and what I have done for Thailand



Narongsak Laosrisin
Srinakharinwirot University (SWU)
from Thailand



AFTER GRADUATING FROM the Faculty of Dentistry of Chulalongkorn University in 1985, I was immediately accepted as a Monbusho Scholars to study for a Ph.D. degree in Dental Sciences and gain clinical skills in Periodontology at Japan's most well-

known dental school, TMDU, under supervision of Professor Isao Ishikawa, until 1990. At the beginning, I had studied Japanese language and started experiencing Japanese culture at the Osaka University of Foreign Studies for 6 months.



At the signing ceremony for the MOU between TMDU and Srinakharinwirot University.

After that, I pursued the rest of my dental education to TMDU. During my studies at the Department of Periodontology, I was able to learn and gain knowledge thoroughly in periodontal immunology and microbiology and to

enhance my skills comprehensively in clinical periodontology. My Ph.D. thesis was published in the most recognized dental journal, the Journal of Periodontology, and gave me the opportunity to present my works in several academic meetings, not only in Japan but also in other countries such as USA. Becoming the very first Thai dentist who received a Ph.D. degree from TMDU (and also from Japan), there is no doubt that I feel very proud to have been given this opportunity.

Returning to Thailand in 1990, I became a lecturer and Assistant Professor at the Faculty of Dentistry of Chulalongkorn University and became involved in several roles of administrative functions, clinical practice, teaching and research, with a strong emphasis on administration. Since I was the only dentist who had graduated from Japan, and was familiar with the Japanese dental education system, I worked closely with senior faculty members to establish a cooperative relationship with TMDU, recognized as the first partnership agreement between Thai and Japanese dental schools. This agreement brought about academic relationships between TMDU and seven other dental colleges in Thailand afterwards.

Experiencing the high academic standards and oral health services in

TMDU, I was very eager to enhance the Thai dental college standard to a new level. In 1996, I enthusiastically became one of the founders of the newest dental school in Bangkok at that time, SWU, and was involved in several roles of administrative functions. Later, in 2009, I was honored to serve as the fourth dean of SWU's Faculty of Dentistry. Other than administration, I am still involved in the SWU's annual Outreach Project by mobile dental unit in rural areas in Thailand and the People's Republic of Laos, and also several research projects such as periodontal medicine, periodontitis related to systemic disease especially diabetes, and periodontal therapy by sub-gingival ultrasonic debridement and laser therapy.

In addition, I am also actively associated with several organizations. I was the founder and the first president of the Japan Dental Alumni of Thailand (JDAT), in 2006-2010, the president of the Thai Association of Periodontology (2004-2006 and 2010-2012), Board committee of the Thai Dental council (2009-now), and Thai councilor of the Asian Pacific Society of Periodontology. The Japanese community in Bangkok numbers over 50,000.

Six years in Japan, and learning the language and culture of this great country, makes me feel at home in



Prof. Isao Ishikawa (left), after being made an honorary member of the Thai Association of Periodontology in Bangkok 1999.

communicating with Japanese patients, and confident in providing them with high quality dental treatment and educating them so as to prevent any further oral disease so they will be able to maintain a healthy, comfortable and fulfilling quality of life.

Recently, I had the opportunity to sign a Memorandum of Understanding (MOU) between TMDU and SWU in 2010. TMDU is recognized as one of the world's best dental schools. But to me, it is where I gained a lot of knowledge and fulfilling life experiences, and is my second home outside Bangkok. I was excited and deeply appreciated to have this privileged opportunity to review this relationship and I am looking forward to cooperating with TMDU much more in the future.



Prof. Kawaguchi (front row), Prof. Morio (second from left) and TMDU's International Exchange Center staff members visited Srinakharinwirot University in conjunction with the Student Exchange Program: Nippon Discovery.

Letter 03

TMDU made my dream come true



En-Xin Zhu
Dalian Medical University
from China



THE BEST THING that ever happened to me was being admitted to TMDU and getting my DDS Ph.D. here. Especially, I appreciate Mr. Mukaibou Takashi, the former president of Tokyo University, who was my father's school-mate and friend. My great appreciation is also dedicated to my supervisor Mr. Yamamoto Hajime, who was the former president of TMDU. Both of them made my dream of studying abroad come true and gave me meticulous care and concern.

If anyone should ask me why such affections I have retained for TMDU, I would say there were touching stories happened to me. I entered TMDU in 1986, and was admitted to the Graduate School of TMDU in the next year to begin my doctoral studies. I was the first student from mainland China to study for a DDS Ph.D. at this university. My major was Oral Pathology, so I was required to take long hours to use with microscope everyday due to pathologic diagnosis and animal experiments. Due to long-term overuse, an eyeground hemorrhage occurred in my left eye and I almost lost my vision. This painful

event seriously affected my mood and my work. During this tough period, Professor Yamamoto and other teachers supported and helped me out to get up my courage and overcome this illness. As a result, I completed substantive biopsies, scientific research and my doctoral dissertation, as well as other several related papers, solely with my right eye, so my years-long dream of gaining my Ph.D. finally came true.

During my eight years of study at TMDU, I became acquainted with many celebrated professors and learned a lot of world-leading dental technologies. I felt a great responsibility to bring these technologies to China as soon as possible. Not long after returning to China, I became the Dean of the School of Stomatology of Dalian Medical University. With the help of Professor Etou Kazuhiro, then the Dean of the Faculty of Dentistry at TMDU, our two colleges concluded friendly relations with each other. We signed academic exchanges agreements, so there having been more than ten professors from TMDU coming to Dalian Medical University every year to give lectures and clinical guid-



The sakura in my city blooms as beautiful as it does in Japan.

ance. As for dental technology and production, Mr. Ishiwata Masaru, then the dean of the School for Dental Technicians, had been coming to Dalian Medical University, giving lectures and guide in person for 15 consecutive years without any trouble, which is very unusual for anyone to do, and I am very grateful for his tireless efforts. This exchanges program was strongly supported by Professor Tagami Junji, the current Dean of Faculty of Dentistry of TMDU. We greatly appreciate it. Thanks for the selfless help of TMDU, it's acknowledged that the stomatology teaching, scientific research and health care in our college have been improved in a dramatic way.

In personnel training, TMDU always gave me great support during the ten years that I was the dean of School of Stomatology. Professor Tagami opened the door to accept our teachers. We dispatched more than 10 in total, and helped them care with further study. Most of these teachers have gained their Ph.Ds at TMDU and have come back to



Dr. Ishiwata Masaru and other professors from TMDU came to Dalian Medical University to give lectures and clinical guidance.



The School of Stomatology of Dalian Medical University and TMDU established friendly relations in 2000.

work, and currently become great assets to our college.

In particular, my daughter Zhu Lei also went to TMDU, studied under Professor Tagami, and gained her DDS Ph.D. She is now a lecturer at Dalian

Medical University. My father graduated from Manchuria Medical University and gained his MD degree in 1946. It is not common to see that three generations of a family in China with Ph.Ds from Japanese universities. Therefore, I

have a retaining gratitude towards my alma mater, TMDU. It can be said that I would not be what I am today without the cultivation offered by TMDU, and the school will always have a special place in my heart.

Letter 04

Crossing the Borders



Dinesh Weerasinghe
Kuraray America, Inc.
from New York

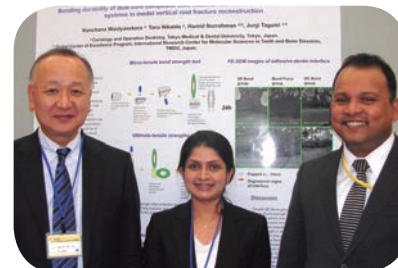


A FEW MONTHS ago in the autumn, I happened to be lined up with people who were arriving to enter the big city known as New York. Who am I and what am I going to do in this country, I thought. While I was just arriving and did not know much, I found myself without much fear and prepared to take challenges not only in my life, but in fathering a family.

“Next, please.” I walked forward to identify myself, and explained my purpose for what I am going to do inside the borders without much effort. I never gave much thought to who I had become before crossing the borders from Japan, after spending 10 years of my life in Tokyo, almost half of them at TMDU.

“Why TMDU?” I ask myself. Honestly, I really do not have an answer, but I know for sure this is the place that I

learned the most important aspects of my life. I travelled for nearly 10 hours by plane from a faraway Asian island, Sri Lanka, where I was born and lived for 27 years, before leaving to study in Japan. I was a dentist and also a teacher at dental school in my country; having the enthusiasm to learn new things and do research. I guess those were the main reasons to select TMDU. My school in Sri Lanka had many Faculties spread out on a large campus, which I now call horizontally dispersed. I was somewhat shocked from the outside appearance of the school in Japan, which was arranged in a very small area of a land, but with skyscraper buildings that I now call vertical. I had an appointment with my professor and knocked on his door on my second day at school. I was unable to understand the words that he used when I knocked the door, I

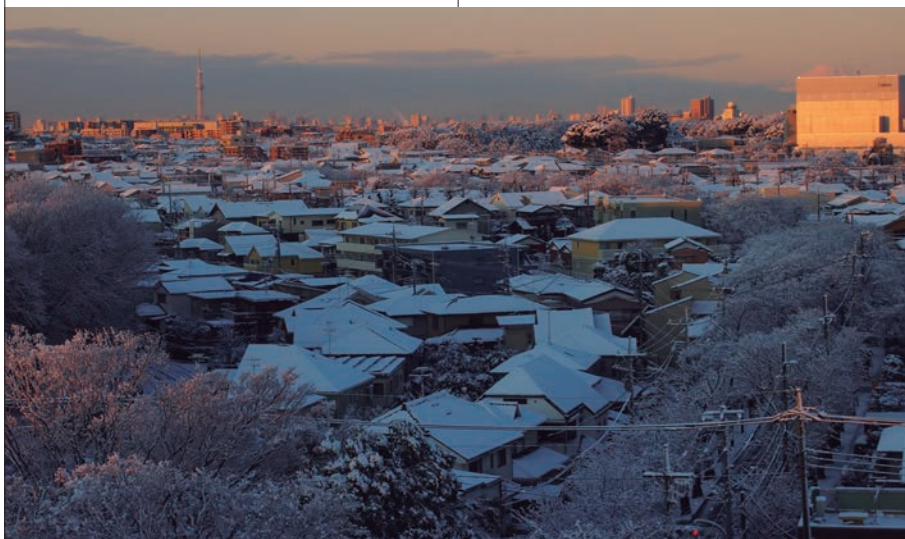


At a research meeting with my wife (center) and mentor (left)

but guessed that I had permission to enter. The room was very small with stacks of files and books. I could have missed him, had he not gotten up. I had no idea that meeting this individual, Dr. Junji Tagami, would change my life.

I studied for my doctorate in dentistry for four years, having chances to communicate with patients who demanded quality treatment with national health insurance coverage. I examined myself, contemplating that we had some wealthy patients who pay more for dental treatment at private offices in big cities in my homeland. Here, some wanted to have the best treatment for a low fee at my dental school. I learned many cultural differences, for example to bow and greet the patients, and after completing their treatment completing their treatment ran to the computer to catch up with the next appointment.

“You are ready to go and are stamped,” I heard from border control office, without which it is not possible to enter. I passed into this big city, crossing the borders from the far away Asian islands of Sri Lanka and Japan. Here I would use the things that I learned from TMDU regarding technical and clinical knowledge in dentistry with American dentists. The snow this year reminded me that it is no longer autumn in TMDU; however, my experiences will always gives me the breath to take new challenges in life.



The view from my home in Japan

Letter 05

The discovery and validation of novel biomarkers for early diagnosis and monitoring of disease



Alejandro H. Corvalan
Pontificia Universidad Catolica de Chile
from Chile



MY LABORATORY IS located in Catholic University (Pontificia Universidad Catolica de Chile) in Santiago, Chile. Our major activity is Translational Cancer Research. The laboratory's specific research focus in the discovery and validation of novel biomarkers for early diagnosis and monitoring of disease by epigenetic approaches, mostly by DNA methylation and microRNAs. Currently, we are developing a novel screening and triage test for early detection of gastric cancer based on methylation status of the promoter region of Reprimo, a p53-dependant tumor suppressor gene.

In addition we are investigating the role of Reprimo and p73 (another p53-dependant tumor suppressor gene) in the pathogenesis of gastric cancer. We focus on gastric cancer because it is the leading cause of death in Chile and second in the world. In one of our projects, entitled "Screening and triage test for early detection of gastric cancer" (Fondef#D09-1137), we are evaluating our own discovery of a potential biomarker for the early detection of gastric cancer (Clin Cancer Res. 2008;14:6264-9). In this proposal we are testing the detection of circulating tumor (ct) DNA of Reprimo methylated in conjunction with other markers such as H.pylori and Pepsinogens to establish a novel screening and triage strategy for early detection of gastric cancer.

In a first step we tested 1,000 males/females between 30-74 y.o. symptomatic to determine sensitivity and specificity for Reprimo in the detection of gastric cancer in a high-risk population evaluated by upper gastrointestinal en-

doscopy. Now, we are characterizing at clinical, pathological and molecular level cases of gastric cancer identified and non-identified by direct detection of Reprimo along with H. pylori and Pepsinogens. With this information, we are going to develop an algorithm for screening in a general population (3,000 male/female, 30-65 y.o.) from a high-risk area for gastric cancer in Chile (STEAD study, clinicaltrials.gov, identifier NCT01774266). In this step we will evaluate also acceptability, efficacy and efficiency of the proposed algorithm.



Reprimo (RPRM, geneID 56475) maps to 2q23, a locus with frequent allelic imbalance in human cancer. RPRM contains only one exon and is codified for a protein of 190 aa and 11 kD. RPRM has a putative role of a tumor suppressor gene causing cell cycle arrest at the G2/M boundary. We have hypothesized that loss of expression and function of Reprimo plays a role in the pathogenesis in gastric cancer. These losses might occur at early steps of the natural history of gastric carcinoma and should contribute to tumorigen-



Above and center: Working at the Catholic University in Santiago.

ic characteristics of gastric cancer cells. Therefore, in a second project (Fondecyt#1111014) we are currently evaluating the role of RPRM through clinical and experimental models.

For a clinical model, we are testing the clinicopathological significance of the loss of protein expression of Reprimo in early, advanced and precursor lesions of retrospective and prospectively collected cases of human gastric carcinoma. Loss of protein expression has been tested by commercially available anti-Reprimo antibodies and data is integrated by our method of histology/tissue marker integrative approach (Clin Cancer Res, 2010;16;3253-9). To establish an in vitro experimental model to study the role of Reprimo in gastric cancer, fifteen cell lines from East and West origin (because of geographic/ethnic differences) are being characterized for the loss of expression of Reprimo at DNA level (methylation of the promoter region and mutational analysis of the full coding sequence), at RNA level (qRT-PCR) and at protein level (western blot) before and after treatment with DNA methyltransferase (5-Aza-2'-deoxycytidine) & Histone deacetylase (Trichostatin A) inhibitors. Cell lines with mutational inactivation of Reprimo will be characterized for in vitro changes in tumorigenesis after stable transfection of the full coding sequence of Reprimo. Changes in tumorigenesis will be evaluated in vitro by proliferation assay, viability assay and colony formation assay. Finally, tumorigenic changes will also be evaluated in primary gastric cells with and without expression of Reprimo be-

cause of the limited number of doubling cells.

Finally, the laboratory also has a

strong interest in computational biology/bioinformatics to explore cancer heterogeneity by utilizing a data min-

ing approach. For this effort we use existing databases and open source/in-house bioinformatic software.

Letter 06

Unforgettable study and life in Japan



Mashal, Mohammad Tafuiq
Preventive Medicine
from Afghanistan



I HAD NEVER dreamt of studying abroad in Japan before I was proposed for a scholarship from the Public Health Leaders Program of the Graduate School of TMDU. My greatest honor was to be one of the people who were selected to join this opportunity. Through my studies at TMDU I have the honor of being the first Ph.D. holder in Social Medicine in Afghanistan. My experience at TMDU changed my dream to reality.

I did not know how gorgeous Japan is until I first arrived at Japan in 2003, although everything looks different from my country. Upon my arrival at TMDU, I was welcomed by Professor Takehito Takano of the Graduate School of Public Health of TMDU, where I would eventually belong. In my first week of studies of the department, I was warmly welcomed by my supervisor, Dr. Keiko Nakamura, all of the staff and senior students. The theme of our study was diversity in learning and we mainly accomplished it through self-study, self-learning and self-support. This approach creates a sense of self-

confidence and enables the sustainable gaining of knowledge.

At TMDU I realized what a friendship beyond frontiers is. We met international friends from various countries: China, Thailand, Cambodia, Vietnam, Laos, Cote-d-voire, Fiji, and Mongolia. We became close friends and learned about each other's culture and society. It was my first experience to join a multi-national and multicultural environment. I really enjoyed my time at TMDU, probably because I met a great group of people, where everybody was important, from the most senior professor to the newest team member.

Every day we have to study and learn a topic based on our annual plan, every week we had bi-weekly seminars, every six months we had to provide results for evaluation, and each year we had an Annual Planning Meeting and study visits. The comprehensive research I did provide the first detailed epidemiological profile for Afghan health system and evidence for factors associated with the health and nutrition status of children under five years



Working as the General Director at Preventive Medicine.

of age in Afghanistan, with major attention on family behavior related to women and a past experience of war-related hardship.

I feel that my studies at TMDU have brought about a real change in my life, a change that will never go away. Not only I was lucky enough to receive the most up-to-date knowledge, but also I successfully advanced my career after returning to my own country, where I am currently working as the Director of General Preventive Medicine, in the Ministry of Public Health (MoPH) of Afghanistan. It is a senior position, as I am leading the largest program in the MoPH, taking care of all public health aspects of the health sector and overseeing 18 departments.

The knowledge I gathered in TMDU from the classroom and Japanese society, and the examples leadership shown by my seniors has made me stronger and more confident both as a public health practitioner and as a leader in my country. In my national contribution



Professor Takano, Dr. Nakamura and members of the Public Health Leaders course during our Annual Planning Meeting at TMDU in 2006.

I have established the first Non-communicable Disease Control and Oral Health departments, and I have brought about several functional and organizational reorganizations. In my interna-

tional contribution I worked as a senior advisor to the World Health Organization for post-conflict health need assessment of Libya.

My four years in Japan were too short.

I still feel myself very close to Japan and Japanese society, as I see a number of Japanese people working at the Ministry of Public Health and I can sense their honesty, sincerity and humanity.

Letter 07

Message from former student of TMDU



Ngoy Mean Heng
Ministry of Health, Cambodia
from Cambodia



I WORKED IN Phnom Penh in public health management at the grassroots level as the head of a health center which served 60,000 inhabitants in the 2000s. Despite graduating from the Faculty of Medicine in 1991 in Phnom Penh, and working as a medical doctor, my knowledge on public health management was limited.

To contribute in improving the health status in Phnom Penh, the capital city of a less economically developed country, we should look for the cost-effectiveness way as disease prevention rather than spending on disease treatment. Those reasons encouraged me to continue my study in public health.

I learnt about epidemiology, health statistics, health research, health promotion, public health, and international health development while studying at

the Department of Health Promotion and International Health of TMDU from 2002 to 2006.

I hesitate to describe about the difference in medical field between Japan and my country, previous studies have revealed that health status was significantly associated with the socio-economic status. Therefore Cambodia, a less economically developed country, understandably has a lower health status compared to Japan, an economically developed country. Japanese government establishes health policy based on health research. The Cambodian government is not able to choose this way yet because of scarce financial resources. I hope that Cambodia will do as Japan has done when we have sufficient resources.

I have worked as a deputy director of Phnom Penh Municipal Health Depart-



I have been working as the Deputy Director of the Phnom Penh Municipal Health Department, Ministry of Health, Cambodia since May, 2009.

ment in charge of its Healthy City Program, health promotion, non-communicable disease control and prevention, and food hygiene since 2009. I also serve as a permanent member of the Phnom Penh Healthy City Secretariat.

The secretariat of the Phnom Penh Healthy City Committee plays a role in implementing Healthy City Program by expanding healthy settings-healthy communes, schools, markets, workplaces, and hospitals, in Phnom Penh. Last December we introduced the Non-Communicable Disease Prevention program through implementing healthy settings in Phnom Penh (please see the website: phnompenh-healthdept.org).



The secretariat of the Phnom Penh Healthy City Committee conducted the Workshop on Usage Monitoring Checklists for Healthy Settings in Phnom Penh on July 26, 2011 at Capital Hall of Phnom Penh.



The secretariat of the Phnom Penh Healthy City Committee conducted the Dissemination Workshop on Implementing Healthy Settings and Raising Awareness on Non-Communicable Disease Prevention in Cambodia.



There are a wide variety of exchange programs for young people at different levels.

TMDU students and young researchers improve their skills by participating in training programs abroad.

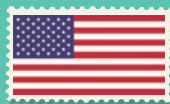
Reports of TMDU Students in the World

Report 01

Travels



Mitsuru Mukaigawara
6th year student, Faculty of Medicine
Clinical Clerkship at Harvard Medical School



STIRRING UNCERTAINTY, travels remind us of who we really are. On a beautiful sunny day when the cherry blossom season reached its peak along Boston's Charles River, I received an email saying that a doctor who had always been kind and helpful to me had successfully entered the US's top residency program. I was as happy as I had ever been, as if it had been I who had been given such a wonderful opportunity. She was also a graduate of this TMDU-HMS program. The connections she made during her days in Boston backed up her success, the message

continued.

Happiness soon turned into impatience. In this world, the measure of power is connectedness, as Anne-Marie Slaughter noted [1]. My days in America's best hospitals had been fruitful, but I had not been as ambitious as my doctor friend had probably been. Restless and at loss, I emailed her: "Do you have any career building tips for me during my days in Boston?" Her response was the most beautiful message I had ever received. "Appreciate opportunities given to you every day, concentrate on your daily activities, and share your



TMDU-HMS Program
Class of 2012.



Prof. Grand (right), the first pediatric gastroenterologist in New England.

thoughts about what you believe is your mission at every opportunity possible. Those who feel like supporting you will be sent into your life."

Since then I have followed her advice, which made all the difference to my life in Harvard. A professor whom I met in an outpatient clinic kindly set up a chance to talk with the world's renowned experts whom he thought I should meet in Boston. "I can break the ice for you", he smiled to me, after listening to my stories about the mission I had in mind. A resident whom I worked with even called me after work to discuss my career development. Only with my friend's advice could this all have been possible. Her blessed words gave me the opportunity to broaden my perspectives and to understand what my mission really was.

So my advice to TMDU students, if I am entitled to give any, is to utilize a number of opportunities in front of you to study abroad and to widen your horizons. A passion for studying abroad

cannot fuel you for the entire six years, but believe me, your days in distant regions of the world will make you listen to your heart, and that is where you will find your treasure. In so doing, you must dive into uncertainty.

After all, back in Tokyo, I am still stirred in uncertainty. In Boston I decided not to apply for residency programs in Japan instead, aspiring to spend a year in a resource-limited area to help provide health care as a human right.

Making such a decision was of course challenging, but that was what I found as my mission during my days in Harvard. Most importantly, as Paulo Coelho beautifully crafted:

“Making a decision was only the beginning of things. When someone makes a decision, he is really diving into a strong current that will carry him to places he had never dreamed of when he first made the decision.” [2]

Through my precious experience in

the TMDU-HMS program, I firmly believe that travel reminds us of who we really are. The journey ahead will not be easy, but in times of difficulties, I believe I can pave the way for the future, with my senior classmate’s advice in mind.

References

- [1] Slaughter, Anne-Marie. America’s edge: power in the networked century. Foreign Affairs 2009;88(1):94-113.
- [2] Coelho, Paulo. The Alchemist. New York, NY: HarperCollins, 2006.

Report 02

My stay at Imperial College London



Megumi Tanozaki
4th year student, Faculty of Medicine
Exchange program in UK



ALMOST A YEAR has passed since my stay at Imperial College London. It was a life-changing opportunity that most medical students unfortunately do not have the chance to experience. I hope this short essay will explain my precious days in London.

My first experience of research took place in the Anaesthetics Department of Chelsea and Westminster Hospital. The research was concerning a nociceptive receptor called “TRPV1 channel” which is found in hot chili pepper. “Capsaicin” is a well studied ligand which provokes pain through the channel and it is known to cause depolarization in the cell. I used electrophysiological techniques to compare the role of Capsaicin and a ligand called “Anandamide” which is not yet fully understood but has potential anaesthetic benefit.

My supervisor was very supportive and let me explore within the study to really get to grips with the topic. He even took me to his classes several times, and there I was treated as one of the students. I was amazed at their presentation skills and the eagerness they displayed in class discussions. The lab members were also cooperative and they were always curious to know how my experiments were progressing, and

they gave me didactic advice.

I was also given a chance to encounter clinical medicine as well. The hospital held weekly grand rounds where interesting cases were discussed. One day, a Japanese tutor from another hospital took us on a hospital tour for half a day, which also helped me understand the medical system in the UK.

Although it was my first experience of living alone, I never felt isolated during the stay. The exchange seniors who formerly came to TMDU took care of us and we helped the next exchange juniors from Imperial back in Japan. I was constantly intrigued by the sense that I was surrounded by such a multicultural community.

Indeed, the atmosphere in London is so different from Tokyo in that wherev-



I joined many tours for international college students while I was in England.

er I went I found shops or people from all over the world! Life in the dormitories was full of exciting events and weekly English sessions in the campus were a great help for me in improving my English. I also belonged to the dance society and I cannot thank them enough for the memorable times we had.

Finally I can confidently say that the tight bond I made with the people during my stay is the most precious thing I got from this experience, and I am only too happy to keep in touch with them. I would also like to thank all the people who have supported me and have given me the chance to have this wonderful experience.



My supervisor’s class.



Farewell party thrown as a surprise from the members of the dance society.

From the antipodes of the earth — Chile



Masayasu Segá
4th year student, Faculty of Medicine
Project Semester in Chile



WE HAVE BEEN in Chile since October for our project semester, which is a part of our curriculum. I am now studying in a Laboratory of Oncology and Molecular Genetics, which belong to a hospital Clinica Las Condes (CLC). It has been a good opportunity for us to study and live in Chile, which is geographically one of the farthest countries from Japan.

Six students from TMDU have been in Chile in this program. Three of us go to CLC, and the other three students go to University of Chile. This program in which students can study here in Chile started in 2010. There is an office, the Latin American Collaborative Research Center (LACRC), in CLC. LACRC is one of TMDU's overseas activity centers and it is a product of the collaboration between TMDU, CLC, and the Chilean Ministry of Health. We are learning a lot of things and spending a great time in Chile thanks to this collaboration.

CLC is located in Las Condes, which is in the east side of Santiago. Santiago is growing larger and larger and there are many new buildings and houses in the east part. There is also a region

called Centro, where there are many historical buildings. Santiago is surrounded by mountains, so the climate changes very much by season. When we came to Santiago, it was spring and we faced some cold days after several warm days. Now it is summer with a lot of sunshine and the temperature is reaching around 35 degrees on hot days.

Under the great environment we are doing experiments in each laboratory under the supervision of the members of each laboratory. The topic of my project is about colorectal cancer (CRC). Here in Chile, CRC is one of a big health issues and people here endeavor to find a solution to improve the situation. It is very interesting for me to be involved in an ongoing field because before this project semester, most of the classes were lecture styles. Of course I



I cooked Japanese food for my host family.



I had a chance to observe endoscopic surgery at CLC.

have a lot of things to learn, I am always trying to find a way to contribute to the project. Also, before this project, I had little experience to think as a scientist who is standing very close to the clinical medicine. Now I have much clearer image of what it is like to do research activities and the way of thinking as a scientific researcher in medical field.

The research activities are very interesting, and there are also many other interesting aspects in my life in Chile. The biggest change of environment for me is the fact that Spanish is the main language spoken here. I am home staying with a Chilean family. At home, I can only use Spanish to communicate with family members. The situation is same when I go to a supermarket and have to ask a place of some merchandise. When I had just arrived, I could speak so little Spanish that I almost could not communicate without using my dictionary. After three months, I still have to use my dictionary for new words but I can feel my Spanish is improving in my daily life. To acquire new



With members of Laboratory of Oncology and Molecular Genetics.



At the research progress report meeting.

language means that we can expand one's world, so putting myself in a place only Spanish is spoken has been also a good challenge.

Of course I think we have to find ways to make use of all our experiences after we go back to Japan, and I am thus sure that what we have seen and learned are

going to be valuable experiences and broaden our capabilities. Here, I would like to thank everyone who supported us for this program.

Report 04

Studying in a country far removed from Japan



Sayaka Oki
4th year student, Faculty of Medicine
Project Semester in Chile



I HAVE BELONGED to the laboratory of Cellular and Molecular Neurobiology of the University of Chile from last October. It is not easy to explain my study, but to put it simply our group has been trying to discover how genes contribute to the development of neurons in human brains.

As you know, there are numerous neurons in a brain and each neuron has a different projection target. It is the combination of transcription factors expressed in each cell that decides this projection target. There are many kinds of transcription factors, but different cells have different expression levels of them.

I do immunofluorescence with brains of young mice and try to determine the populations of cells which have a unique combination of expression of transcription factors. The theme is not easy for me to understand, but I have been interested in neuroscience and neurobiology and I'm glad to be part of this lab.

Chilean people are very kind. My colleagues in the lab explain things to patiently when I have questions. In my lab, many people can speak English fluently. Sometimes their pronunciation sounds like Spanish, but it's not a big problem now. I feel the importance of English in the science field as a common language. My lab mates sometimes bring me to the Chilean restaurants. In Chile, lunch and dinner times are later than in Japan (they always eat lunch around 13:00 and dinner around 8:00 to 22:00) So I am worried about my weight a little, but I enjoy Chilean food.

We have some friends who are studying Japanese at University of Santiago. They took us to Vina del Mar, which is a resort city near Santiago, and we spent New Year's Eve there. In Chile, on New Year's Eve fireworks are set off in some places. My friend told me that the fireworks in Vina del Mar were ranked as the second most beautiful fireworks all over the world and over two million people came there to see it



Chilean friends at the Flower Clock in Vina del Mar, a resort city near Santiago.

every year. We watched wonderful fireworks over the sea and danced after that. This is the common way to celebrate the New Year in Chile. I think the New Year's Day is a quiet day in Japan, so I was surprised with the difference but we enjoyed the night.

Through my experiences in Chile, I have come to think about Japan more seriously and frequently. For example, the Chilean economy is now good because they export copper to foreign countries. But people in my lab say they are short of money because money is used for other fields which are more profitable and the budget for the education is not enough.

Then how about Japan? I have heard similar complaints in Japan, too. I find that in order to improve the level of academics, we need not only brilliant people but also a supportive environment. I think we should not try to gain only an immediate profit and must consider what really works for the further developments of our country. Until I came to Chile I had not thought about Japan so seriously. I think it is one of the good points of studying abroad to be able to get a new viewpoint on your home country.

Living in Chile, I sometimes face difficulties but I believe they will help me mature. I hope I can make use of these experiences in the future. Finally I would like to thank everyone who has helped organize this project for their wonderful support.



My presentation in the research progress meeting with Chilean and Japanese teachers.

Report 05

Study at Seinajoki University of Applied Sciences in Finland



M. Kobayashi, S. Ito
3rd year students, Faculty of Medicine
Study program in Finland



STUDENTS OF THE School of Health Care Sciences have an opportunity to take part in a program held at Seinajoki University of Applied Sciences (SeAMK) in Finland. Since starting this program, students who are interested in the studying abroad have visited Seinajoki and learn a lot of things, for example, the Finnish health care system, their culture and so on. This year, eight of us participated in the program, staying at SeAMK for two or three weeks in September, 2012. All of us are majoring in nursing or medical technology.

Written By Momoko Kobayashi

3rd year student, Nursing Science

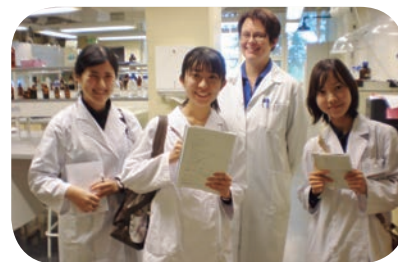
From 2 to 22 September, 2012 I participated in the intensive program at Seinajoki University of Applied Sciences (SeAMK), School of Health Care and Social Work. I visited there with my classmates, Haruka Ishihara, Aki Echizenya, Akari Nakamura and Chihiro Honma. Chihiro and I received a scholarship from TMDU for our studies.

In Finland, although the citizens pay a

high rate of tax, they can get many services from the government and municipalities. So my purpose of this training was to see what differences if any, exist in health care between Finland and Japan.

During my 3-week stay, I visited health care centers, the central hospital, elderly care facilities, kindergartens and so on. I also participated in lectures for international nursing students. And over the weekend, I stayed with a Finnish family.

Not only in Japan but also in Finland, there are problems due to an aging society. In Finland, using home care nursing services, elderly people can live their homes as long as possible. And if they come to live in elderly home, they can live in the facilities that are like their own home. On the other hand, the situation about birthrate is different from Japan. It's increasing in Finland. Through the visits to child care facilities, I felt that there is a lot of support for child raising. So many women go out to work if they have children. And parents don't have to worry about education expenditures very much. Through



Ms. Meria taught us at Food WEST. From left Koyanagi, Hamada, Ms. Meria and Ito.

the visits to these facilities, I felt that Finnish people put a great deal of value on maintaining quality of life and enjoying their lives.

By this training, I learned that to think about the quality of life is very important in our life. I thought it's my subject to think about the QOL of patients and their family.

Written by Saki Ito

3rd year student, Medical Technology

I participated in this program with other two students of medical technology, Satomi Hamada and Asuka Koyanagi. Our purpose was to learn about Finnish culture and their health care system. During our stay, we visited some laboratories and health care facilities to study their scientific skills and the system for health care. We also had homestays with Finnish families and a lot of contact with SeAMK students. By discussing each country's culture, I learned a lot about their daily life and some Finnish foods. So I found many different points between two countries. Through



With SeAMK students in their uniforms. From left; Echizenya, Ishihara, Honma, Kobayashi and Nakamura.



Aki Echizenya making a presentation about Japan for SeAMK international students.

a lot of encounters, I could study about Finland and I thought we should continuously keep these traditional things in the future because each country had a unique and wonderful culture.

During our visit to Seinajoki Central Hospital, we visited four kinds of laboratories and learned about the medical technology in Finland. Most of examination methods were not so different from Japan, but I was surprised by how safe the equipment for medical technologists and patients is in Finland. Many items were disposable and expensive,



Homestay with a family in Kuortane.

but their use helps prevent medical accidents. And also I learned about how the health care system is supported by Finnish people. I understood that by supporting each other, they kept their

health. It was a valuable opportunity for me to feel the worth of helping each other and a role of medical technology.

Thanks to the great amount of support provided to us, I could enjoy learning about Finland and also understand the good points in Japan. I found the importance of seeing the world from different points of view, so I would like to try to realize many thoughts and improve myself. Finally, we'd like to express our sincerest thanks for the people who supported our opportunity stay in Finland.

Report 06

Overseas Training Program in Thailand



Keitetsu Kure
4th year student, Faculty of Dentistry
Training program in Thailand



FROM SEPTEMBER 3 to 9, we took an overseas training course in Thailand, where we learned about the situation of dentistry in Thailand and conducted an oral health education class for Japanese kindergarteners living in Thailand. In addition, we visited local dental clinics and met students at Chulalongkorn University (CU) and Srinakharinwirot University (SWU). Our precious experiences there were really exciting.

Firstly, concerning the dental situation in Thailand, Dr. Thongchai at CU gave a lecture to us. According to his lecture, the number of dental offices in Bangkok is lower than that in Tokyo and the system of unified departments for dental practitioners started only 10 years ago. To our surprise, dental nurses, the profession that works there instead of oral hygienists, can support dentists in Thailand at present. In addition to normal work oral hygienists do in Japan, they can provide prevention and simple treatment to children after 2 years training. Dr. Thongchai taught us many other things about the dental situation in Thailand.

As for oral health education, we went

to Rainbow Kindergarten, which is for Japanese children living in Thailand. We put on a puppet show about the importance of washing one's hands and brushing one's teeth using characters from Snow White. After that we showed them how to wash their hands and brush their teeth as hands-on experience. They seemed to enjoy our teaching. Since that was the first time for us to do oral health education for children, it benefited us tremendously.

We visited several local dental clinics such as Fuji Japan Dental Clinic, which is for Japanese patients living in Thailand; DENTALAND, which is for native Thai patients; and Bangkok Dental



After our lesson on oral health education at Rainbow Kindergarten.

Imaging Center, which has an up-to-date imaging machine, one of only 10 such machines in the world. The teacher at CU guided us during the tour. He gave us a feel for what it is like to work at a Thai dental clinic, such as the number of patients coming there per day, typical office hours, the systems of clinics, and so on.

With regard to the student exchange between CU and SWU, we met 6th-year dental students at both CU and SWU. They showed us around each university and it was good opportunity for us to communicate with Thai stu-



We visited the Wat Phra Kaew temple.

dents in English. All of them were very kind and generous with their time.

For our sightseeing, the CU students also showed us around the Floating Market in the suburbs of Bangkok and Wat Pho and Wat Phra Kaew, which are the most famous temples in Bangkok, on the weekends. It was a lot of fun! We really appreciated their kindness and still keep in touch with them. And what's more, we could spend a wonder-

ful time talking with students studying Japanese at SWU. We talked about Japanese culture in Japanese with them. They really love Japan.

We experienced many, many precious things at our overseas training course in Thailand. Moreover, we could know the dental situation in another country for the first time and the experience seemed to show us what to study as dentists in the future.

Thanks to our experience, we decided that we will study much harder and visit more overseas countries to drive to be dentists who can be internationally active with some global views and perspectives. We deeply appreciate to the overseas training which led us to think this way.

Lastly, we wish to thank all of the teachers and students of TMDU, CU, and SWU. Thank you ever so much!

Report 07

Newly Established Dental Hygienists in Mongolia



Rei Muroga
3rd year student, Graduate School
Training program in Mongolia



I VISITED THE School of Dentistry of the Health Sciences University of Mongolia (HSUM) for 48 days. The main purpose of my visit was to study the situation regarding dental hygiene education in HSUM, which was implemented as a four-year bachelor's program in 2010. Sometimes I presented information about dental hygienists and dental hygiene education in Japan to HSUM students and teachers. At this time in Mongolia, only HSUM has a dental hygiene school. In addition, there are only two dental schools in the country: HSUM (a national university), and Ach Medical University (a private university). There is a plan to shift the length of dental education from present five years to six years.

The number of registered dentists in Mongolia is 1,318, but only 650 are active dentists now. Also, 485 dentists work in Ulaanbaatar, mostly at dental clinics. In rural areas, dentists mainly work in hospitals. Other dental health care providers are dental technicians (three-year program) and dental nurses. To be a dental nurse, you have to take a special course after becoming a nurse.

In addition, I joined the "10th International Conference Asian Academy of Preventive Dentistry (ICAAPD)" and "International Conference Dedicated to the 70th Anniversary of Health Sciences University of Mongolia." I was able to share information about the education of dental care providers and preventive dentistry, in terms of current practice



I enjoyed the great outdoors by taking casual hikes and going horseback riding at Terelj.

and future trends in Asian countries.

I went to the suburbs on the weekend, and I enjoyed the great outdoors by taking casual hikes and going horseback riding. In the capital city, Ulaanbaatar, people have a lot of stress in their daily life. The city is crowded, has traffic jams, a lot of air pollution and joblessness as a result of the rapid development of country.

I was also able to visit the State Dental Center and a general dental clinic in Ulaanbaatar thanks to the courtesy of the HSUM teachers. Nowadays in the Ulaanbaatar, an increasing number of cavities have become a serious problem, especially among children. In rural areas, people suffer from periodontal diseases



At a lecture room in HSUM with dental hygiene students. We exchanged information and opinions concerning dental hygienists in each country.

At the ICAAPD poster session, with an HSUM dental hygiene teacher (right).



rather than cavities. In response to these situations, Mongolian government has implemented a “National Oral Health Program.” At the State Dental Center, dentists and other dental care providers work hard to treat many patients who stand in line in front of treatment rooms.

In the Department of Preventive Dentistry, dentists often apply diammine silver fluoride to early decayed teeth of children, and dental nurses educated children and mothers how to brush teeth and have good daily habits, etc. But the supply of dental products dose not stable, because almost every product is imported.

In other departments, there were many cases of tooth extraction of children and adults. After losing a tooth, in many cases they left off without continuing to see a dentist.

So I understood there were many differences in the environment surrounding dental care from Japan. I really felt citizen’s health and hygienic concept were delayed, so I thought that public health education might benefit from an initiative such as a tobacco cessation campaign.

Hereafter in Mongolia, their system might change from a standardized health education to case-by-case health

education, and regular dental check-ups will become more important. Under these conditions in Mongolia, the position of dental hygienists will also become very important.

In the fall of 2014, dental hygiene students of the inaugural class will graduate (the class had 18 students when I visited). I hope that we will be able to continue to exchange information with each other and cultivate the friendship and cooperation between our universities. I greatly appreciate the support of all the people. I met in Mongolia for their hospitality and kindness and those that made my trip possible.

Report 08

Overseas exchange session: A helpful method to expand my view



GU, Bin
4th year student, Faculty of Dentistry
Study Abroad Program in USA



IT WAS A honor to have been chosen for this special overseas externship. During the summer exchange session, from 18 August to 16 September, I visited two esteemed dental schools in the United States: the School of Dental Medicine, University of Pennsylvania (August 20 to 24), and the Harvard School of Dental Medicine (September 4 to 14).

Because the school year in America starts from September, I did not have chance to attend lectures or labs at UPenn. Instead, I had a rotation in five different departments, including Endodontic, Periodontic, Orthodontic, Admission & Emergency Clinic and Pediatrics. Thus, I had a chance to see the medical environment and how it is different from Japan, and how staff or students do their jobs as well. I think that dentists work quite the same as they do in Japan. They see patients, listen to the patients talking about their medical histories carefully, do a routine examination, make treatment plans after diagnosis, and do the treatment. However, the

medical environment is much more severe. Without dental insurance, it is almost impossible for patients to afford treatment such as composite resin fillings or crowns. Therefore, to some extent, it seems that good oral care and treatment are available only for rich people.

During my visit to Harvard Dental School, I attended lectures, did lab work and saw patients in clinics together with the 3rd year students. Although the education system of dentistry is so



At Penn Dental School, with the dean of Penn’s Dental School, Professor Denis F. Kinane.



When I was at Harvard’s dental school, this lovely girl Lauren took care of me.

different, the curriculum is not so different. At TMDU, I take the same subjects and do very similar lab works from 4th year, and see patients from 5th year, just as dental students do in America. What I cherished the most is that we became friends through this visit. We shared our ideas, had very good communications, and I had a quite enjoyable time there. I find that the students in America behaved so differently from those in Japan. They tend to be more open, willing to express themselves directly and don’t feel uncomfortable if they are unique. Besides that, sometimes they would feel totally another way towards the same issue. It is allowed to eat and drink in the class, and I found that most of the students felt very free just like at home. However, I also noticed that they listened to the lecture very carefully, followed every word that professors said and discussed about the points they felt confusing with great zeal. I never saw anybody sleeping in class. Instead, they

were highly concentrated on their studies.

There is no good or bad between these two patterns of behavior, but I believe it is so helpful to go out and see people in other countries and talk to them, and experience the culture. Trying to understand others is an effective way for learning, not book knowledge, but the humanity. As a dentist, before treating a patient, having a pleasant communica-

tion and getting useful information is indispensable. Each individual would probably act and think distinctly. Therefore, having the ability to understand and sympathize as well as showing consideration is required.

Both Boston and Philadelphia played important roles on American history. Therefore, besides visiting these two schools, I also visited some historical spots, such as Independence Hall and

Freedom Trail, took the local delicious food and met some of my friends who are studying in America. I had a very good time and enjoyed it very much.

In a word, it was a really good experience to absorb new things or concepts, expand my views and form new ideas. I also became aware of things that I have never thought about and I believe this experience will be very helpful for my future studies and career.

Report 09

Possibility for Dental Hygienists in Japan as learned from Finland



Kanako Toda
4th year student, Faculty of Dentistry
Study Abroad Program in Finland



FROM SEPTEMBER 5 to 25, I visited Helsinki, Finland, and I experienced very special days. Finland is famous for its system of preventative dentistry. Many educated parents choose such products for their children. I had hoped to how they take care of their oral health. In Finland, the status of Dental Hygienists (DH) is very high, in fact it is equal to that of dentists. Dentists can leave their patients to DH with trust that they will provide oral health care and promote maintenance of health.

The Metropolia University of Applied Sciences was where I did my studies. When I visited the university for first time, the teachers warmly welcomed me. Especially I have to say “Thank you” to Ms Eeva Lindoor, a professor who specializes in elderly care.



At Metropolia University.

I took many kinds of classes. Students in Finland take classroom lectures in Finnish, so mainly I attended practical lectures. In clinical training, a student has a patient, decides on the reservation time, and takes charge of the patient to the last, fundamentally. For this, I believe that students can build up a strong relationship with their patients. However, it was in this situation where the opportunity for a teacher to guide the student about how to use an instrument decreases sharply and thus it is difficult for them to give clinical advice to actual patients easily.

Oral hygienists in Finland can do infiltration anesthesia. This practice is illegal in Japan. I was also surprised that when student succeeded in anesthesia 10 times or more under instruction of a tutor in a clinic, they are then able to perform infiltration anesthesia freely.

In Finland, medical care at public facilities for children aged 18 and below is free of charge by law. Medical expenses for adults (aged 18 and over) are 70% of the total amount, a very large sum as compared to Japan. People are thus very aware of the importance of preventing a disease, and there are many directions which the maintenance by an oral hygienist also receives posi-



With Ms. Eeva at Metropolia University.

tively. Therefore, I understood why oral hygienists have such a high social position.

In order to establish the importance of a patient’s comprehensive care and of the oral hygienists, contributions that can be made by cooperation with various professionals, including dentists is needed in Japan.

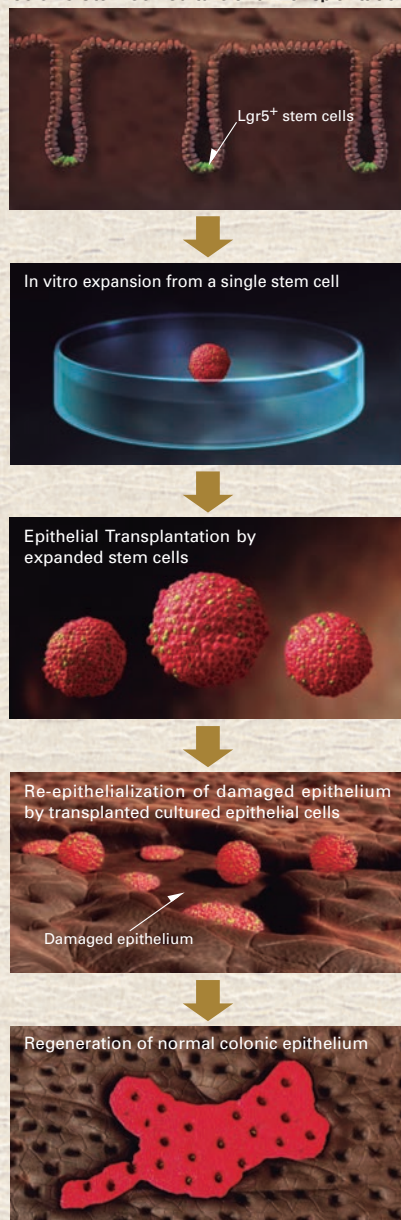
In recent years, at the Metropolia University of Applied Science, the curriculum was recognized and training at an elder-care institution for about one week newly was included. Northern Europe is aging, and it is important to consider the social security of elderly people. Those of us in the field of dentistry need for consider the importance of providing health care for elderly people. I think that oral care intervention for elderly people by an oral hygienist or a linguistic therapist will be needed as a subject of the oral field in future Finland. The oral care for elderly people is highly advanced in Japan, and there are many opportunities for a Japanese oral hygienist to play an active part in the world in this area.

Finally, I would like to express my whole-hearted gratitude to all the people who supported my visit and gave me such a precious opportunity.

Functional Engraftment of Colon Epithelium Expanded In Vitro from a Single Adult Lgr5⁺ Stem Cell

EPITHELIAL REGENERATION IS one of the critical steps necessary for the healing of wounds at the surface of small intestine and colon. We have investigated this process intensely and previously reported that damaged epithelia of the human intestinal tract were partly rescued by bone marrow-derived cells.¹⁾ However, regeneration of wounded surfaces mainly depends on the re-expansion of epithelial cells after damage and adult epithelial stem-cell therapy has been consid-

Fig. 1:
Colonic Stem Cell Culture and Transplantation



ered to hold promise for the treatment of various gastrointestinal disorders such as inflammatory bowel diseases, while it was impossible to evaluate even its feasibility because of the technical difficulties to expand intestinal epithelial stem cells *in vitro*.

Our group led by Drs. Shiro Yui and Tetsuya Nakamura recently succeeded to show the first positive evidence for these very challenging issues.²⁾ In this paper, we firstly reported our original organoid culture methodology, named TMDU protocol for long-term expansion of colonic stem cells, in which cells that are positive for leucine-rich repeat containing G protein-coupled receptor 5 (Lgr5). In brief, we used Type I collagen gel as an extracellular matrix of this three-dimensional culture protocol and the medium that we used contained only five types of recombinant proteins (Wnt3a, R-spondin1, Noggin, EGF and HGF) and BSA. Interestingly, Lgr5⁺ colonic stem cells appeared to expand unrestrictedly in terms of their proliferative capacity under this defined and completely serum-free condition, forming round cystic structures called colon organoids which maintained their original colonic identity. Secondly, we tested the transplantability of these cultured colonic epithelial cells by reintroducing GFP⁺ colon organoids into a superficially damaged mouse colon, and found that transplanted donor cells readily integrated into the mouse colon, covering the area that lacked epithelium as a result of the introduced damage by Dextran Sodium Sulfate (DSS) in recipient mice. At four weeks after transplantation, the donor-derived cells constituted a single-layered epithelium, which formed self-renewing crypts that were functionally and histologically normal. Moreover, we observed long-term (>6 months), histologically normal engraftment with



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transplantation of organoids derived from a single adult Lgr5⁺ colon stem cell after extensive *in vitro* expansion. In addition, engrafted recipient mice had higher body weights than ungrafted controls, implying a beneficial role of epithelial transplantation at least in DSS-induced acute colitis model. These observations clearly confirmed that Lgr5 marks genuine stem cells that retain their self-renewal and multilineage-differentiation properties even after prolonged culture, and also they exactly revealed the feasibility of colon stem-cell therapy based on the *in vitro* expansion of a single adult colonic stem cell.

Our study provided for the first time a proof of principle that cultured Lgr5⁺ cells can be used for stem-cell therapy to repair damaged epithelium. The most out-standing message of this paper was strongly highlighted in *Nature* as being “one-step closer to gut repair.”³⁾ Although further optimization is clearly needed, our study strongly implies that *in vitro* expansion and transplantation of gastrointestinal stem cells may be a promising, simple and safe option of regenerative and gene-therapy strategies for patients with severe gastrointestinal epithelial injuries.

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Etiologic Link between Sarcoidosis and *Propionibacterium acnes*

SARCOIDOSIS IS ONE of the best-known systemic granulomatous diseases. Despite intensive investigation, however, the etiology of sarcoidosis has remained unresolved for more than 100 years. Sarcoidosis seems to result from the exposure of a genetically susceptible subject to an environmental agent, and microbial etiologies of sarcoidosis have long been considered based on the clinical similarities to infectious granulomatous diseases.

Granulomas serve as protective mechanism to sequester and degrade the invading agent. The pathologic hallmark of sarcoidosis is an epithelioid cell granuloma, thus some etiologic agent of sarcoidosis must be present or have been present within the sarcoid granuloma. Histopathologic studies are therefore essential to demonstrate suspected organisms or antigens within sarcoid granulomas to demonstrate an etiologic link between sarcoidosis and the organisms.

Propionibacterium acnes is the only microorganism that has been isolated from sarcoid lesions. We previously reported that many *P. acnes* have been detected in sarcoid lymph nodes using quantitative PCR (*Lancet* 354:120,1999) and in sarcoid granulomas by *in situ* hybridization (*J. Pathol* 198:541,2002) and that *P. acnes* trigger-factor protein causes a cellular immune response only

in sarcoid patients and induces pulmonary granulomas in mice sensitized with the protein and adjuvant, but only those with latent *P. acnes* infection in their lungs (*Am J Pathol* 163:631,2004).

Our recent study published in *Modern Pathology* (2012;25:1287-97) demonstrated *P. acnes* antigens within sarcoid granulomas using immunohistochemical methods with novel *P. acnes* specific monoclonal antibodies that react with cell-membrane-bound lipoteichoic acid (PAB antibody) and ribosome-bound trigger factor protein (TIG antibody). The PAB antibody reacted with small round bodies within sarcoid granulomas in 88% and 89% of lymph node biopsy samples from Japanese and German patients with sarcoidosis, respectively. Reactivity to the antibody was not observed in non-sarcoid granulomas, including those from patients with tuberculosis and so-called sarcoid reaction. The high frequency and specificity of *P. acnes* detected within sarcoid granulomas indicates that this indigenous bacterium is the cause of granuloma formation in many patients with sarcoidosis. Immuno-electron-microscopy revealed that the immunoreactive products of the PAB antibody and TIG antibody were differentially distributed in the outer and inner areas of the HW bodies that frequently appear in sarcoid lymph nodes



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(Fig. 1). Furthermore, conventional electron microscopy revealed that these bodies lack a cell-wall structure and occasionally exhibit protrusions from the body that appear to be yeast-like proliferating features (not mitotic, but sprouting or branching), characteristic of cell-wall-deficient (L-form) bacteria.

According to the results obtained by a series of our studies, we hypothesized the mechanism of sarcoid granuloma formation caused by *P. acnes* (Fig. 2). This indigenous low-virulence bacterium can cause latent infection in the lung and lymph nodes and persists in a cell-wall-deficient form. The dormant form is activated endogenously under certain conditions and proliferates at the site of latent infection. In patients with *P. acnes* hypersensitivity, granulomatous inflammation is triggered by intracellular proliferation of the bacterium. Proliferating bacteria may escape granulomatous isolation, spreading to other organs. Latent *P. acnes* infection in systemic organs can be reactivated by another triggering event, leading to systemic sarcoidosis.

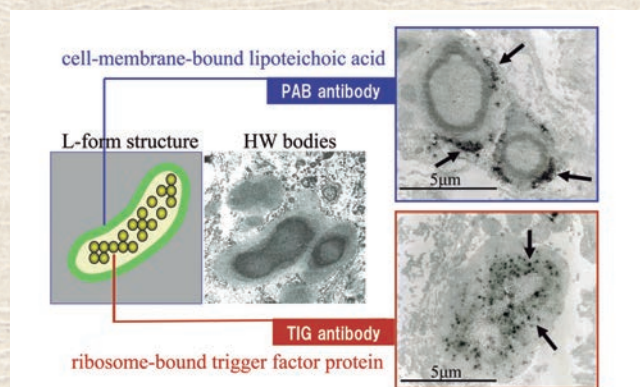


Fig. 1: Cell-wall-deficient *P. acnes* in sarcoid lymph nodes demonstrated by immuno-electron-microscopy with the novel monoclonal antibodies

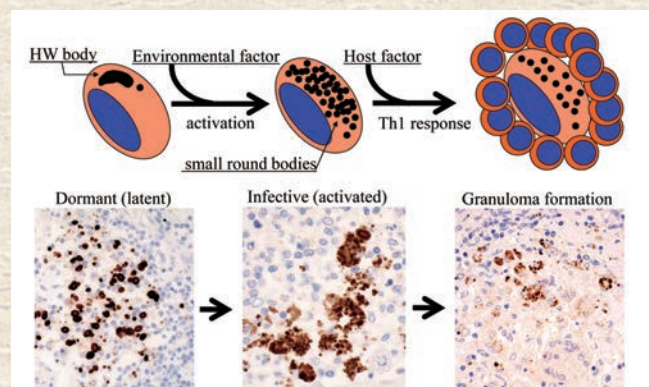


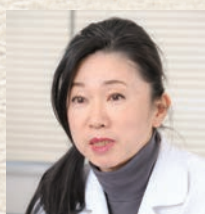
Fig. 2: Hypothesized mechanism of sarcoid granuloma formation as an endogenous infection caused by hypersensitivity to *P. acnes*

3D MRI Analyses Clarify that Pathologic Myopia is Caused by Eye Globe Deformity

THE PREVALENCE OF myopia (short-sightedness or near-sightedness) has rapidly increased worldwide, especially in East Asia. In urban areas in Asian countries, 80-90% of children completing high school are now myopic, whereas 10-20% can have pathologic myopia. People with pathologic myopia are at a substantially increased risk of potentially blinding myopic pathologies, which are not prevented by optical correction. Thus, pathologic myopia is a major cause of legal blindness worldwide.

The visual impairment in pathologic myopia is caused by development of vision-threatening complications in the retina and optic nerve. Most of these lesions are difficult to treat and it has long been unclear why and how pathologic myopia develops such vision-threatening complications.

TMDU is the home of the High Myopia Clinic, which was established by Honorary Professor Takashi Tokoro in 1974 as the world's only clinic specific to high myopia. Through our clinical experience, we have considered that pathologic myopia is not a simple exaggeration of myopia, but pathologic myopia might accompany severe eye deformity especially in the posterior segment of the eye. And such deformity of the eye can mechanically damage the nervous tissue inside the eye, such as neural retina and



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the optic nerve.

To visualize the entire eye shape, we used 3-dimensional high-resolution magnetic resonance imaging (3D MRI). Volume renderings of the T2-weighted images were done on a computer workstation. The globe margins were then identified semiautomatically, and the tissues outside the globes were removed. To analyze the eye shape quantitatively and objectively, we developed a software in collaboration of Dai Nippon Printing Company (DNP). The software incorporates six views of each 3D MRI image and automatically analyzes several parameters, including symmetry and pointedness of the posterior segment of the eye.

Our results demonstrate that normal eyes (without myopia) showed a completely spherical eye globe (Fig. 1). A normal eye is symmetrical in all directions. In contrary, there are different ocular shapes in eyes with pathologic myopia, and the difference in the ocular shape is correlated with the development of vision-threatening conditions in eyes with pathologic myopia. The



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eye deformity in pathologic myopia was classified into four distinct patterns: nasally-distorted type, temporally-distorted type, cylinder type, and barrel type (Fig. 2). Among these four types of eye deformity, optic nerve damage was significantly more frequently observed in eyes with a temporally distorted shape.

This study clarified that an important feature of pathologic myopia lies in eye deformity, especially in deformity of the posterior segment of the eye. The eye contains central nervous tissue (retina and optic nerve) just as the brain does. Unlike the hard skull bone which protects the brain, the eye wall is made of collagen fibers and is less rigid. Thus, an eye deformity can directly damage the retina and optic nerve, and this causes an impairment of vision. Pathologic myopia is probably the only disease which causes an acquired deformity of the eye.

Based on the findings obtained by 3D MRI analyses, our team is currently developing novel therapies to treat and prevent eye deformities. For this purpose, we are using a modified printing technique which we have long collaborated with DNP, and are transferring the collagen sheet with amniotic membrane into the deformed eye shell. We are also injecting stem cells into the space between the retina and sclera. We believe that this treatment will be a fundamental treatment against pathologic myopia and will rescue many patients worldwide who suffer from severe vision loss due to pathologic myopia.

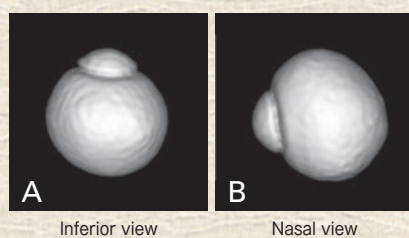


Fig. 1: 3D MRI images of a normal eye
Normal eyes are spherical.

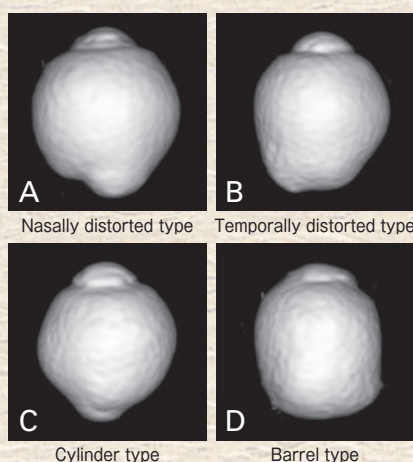


Fig. 2:
Four eye deformity patterns of pathologic myopia (inferior view of the right eye)

Opening Ceremony for Interprofessional Medical and Dental Education Starting in Fiscal 2012

AN OPENING CEREMONY was held on April 19, 2012 to mark the start of interprofessional medical and dental education in fiscal 2012. It was attended by 156 second year students from the School of Medicine and the School of Dentistry as members of the inaugural class, as well as by many executives.

Interprofessional Medical and Dental Education is an initiative that makes use of the distinctive features of a medical university with a Faculty of Medicine and Faculty of Dentistry. Over six years, students of both schools learn by teaching each other some of the knowledge and skills required at graduation through joint study which enhances the learning effect, and lays the foundation for providing future comprehensive medicine at various learning stages. TMDU established the Center for Interprofessional Education in February 2009. A curriculum for interprofessional medical and dental education was designed with advice and cooperation from Harvard University.

At the opening ceremony, President Ohyama made a speech, nothing, “We hope to contribute to society by fostering medical professionals with a comprehensive perspective and knowledge, through an educational curriculum that integrates medicine and dentistry.” Next, Yoshinori Murata, Director of

the Medical Education Division, the Higher Education Bureau of the Ministry of Education, Culture, Sports, Science and Technology gave a congratulatory message, saying, “I have strong expectations of the students who will be the first class to undertake interprofessional medical and dental education, in order to pursue comprehensive medical education in response to the aging of society.” Then Yujiro Tanaka, Director of the Center for Interprofessional Education at TMDU explained the background to the development of the curriculum for the interprofessional medical and dental education and its purpose. This was followed by a symposium on the future of interprofessional medical and dental education.



In addition to the 156 inaugural students, many other people from related fields attended the opening ceremony.

Event to Mark the Anniversary of the University Founding and Homecoming Day

TMDU HELD an event to commemorate the anniversary of its founding on October 12, 2012, and its 3rd Homecoming Day on October 14. On the 12th, the anniversary of the founding, as with the previous year, executives of the university cleaned the campus and surrounding streets as part of the My Campus Project to promote school spirit. From early in the morning, many executives, including President Ohyama and Trustees Itou and Suda, arrived in the same T-shirts specifically designed for this project to cut grass and pick up rubbish.

In addition, as part of the project to increase the greenery on the Yushima Campus, alumni of the tenth class who graduated fifty years ago donated two cherry trees. Under a clear autumn sky, President Ohyama and three representatives of the tenth class planted the trees on the campus. In the afternoon, a length of service award ceremony for fifteen academic staff who have contributed to the development of the university over many years was held.

For Homecoming Day, on the 14th, Tamotsu Aoki, Director of The National Art Center, Tokyo, gave a lecture in the Akio Suzuki Memorial Hall entitled “The Age of Cultural Power — Japan and Asia in the 21st Century.” The lecture was attended

with great interest by executives, emeritus professors, alumni and students. Next, in order to heighten the motivation of university staff, President Ohyama presented a certificate and plaque to two teachers as the Best Teacher Award for outstanding achievements in education, and the Outstanding Research Award to two researchers for excellent research outcomes. Then, following a presentation of certificates of appreciation to donors who contributed to the university fund and a tour of the campus, a social gathering was held in the M&D Tower Faculty Lounge for emeritus professors and graduates from fifty years ago or more.



President Ohyama and other executives doing campus cleanup.

Lecture by Tamotsu Aoki, Director of The National Art Center, Tokyo





EDITORIAL SUMMARY

WE ARE PLEASED to send you Vol. 5 of TMDU Annual News, with highlights of TMDU's international activities and campus events for the 2012 academic year. President Takashi Ohyama leads off this issue in **Message from the President** by introducing TMDU's international activities in light of the school's mission of "Cultivating Professionals with Knowledge and Humanity." In line with the thoughts expressed by President Ohyama, it can be seen throughout this issue that TMDU is continuously promoting the development of its students, faculty members, and staff with an eye to contributing to the increasingly international world of health care. To be sure, many of our students study abroad at one of the universities or research institutes with which we have exchange agreements, and this issue features a history of our **Medical Education Alliance Agreement with Harvard University**. In addition, we have three reports from each of our **International Collaboration Centers**, where TMDU faculty, staff, and students interact with international colleagues: the Ghana-TMDU Research Center at the Noguchi Memorial Institute for Medical Research in Ghana, reported by Prof. Nobuo Ohta; LACRC in Chile, reported by Prof. Yoshinobu Eishi; and the Chulalongkorn University—TMDU Research and Collaboration Center in Thailand, reported by Prof. Yoko Kawaguchi.

In addition, we have two reports from the TMDU **International Exchange Center**. First, Prof. Hidehiro Mizusawa and Assoc. Prof. Kevin Cleary report on the 4th TMDU International Summer Program (ISP2012), which attracted 24 students who are keen to study at TMDU, and Prof. Ikuko Morio reports on the Workshop on Dental Education, where representatives from 15 dental schools in Southeast Asia discussed dental curricula and related issues with each other and TMDU faculty and staff.

This issue also features nine glowing **Reports on Study Abroad Programs** from TMDU students and seven inspiring **Letters from Overseas Alumni** from graduates who tell us about their careers after graduation. Rounding out this issue of TMDU Annual News are three **Press Releases**, in which Prof. Mamoru Watanabe, Prof. Yoshinobu Eishi, and Associate Prof. Kyoko Ohno-Matsui and Prof. Ikuo Morita report on recent research successes.

THE EDITORIAL OFFICE expresses many thanks to those who took special time in preparing articles for this issue. If you have any suggestions and news to be included in the future issues of TMDU Annual News, please feel free to contact the Public Relations office by e-mail (kouhou.adm@tmd.ac.jp).

Newsflash!

The Nature Publishing Index 2012 has just been published. TMDU's feature is available on tmd.ac.jp, and the entire Index is can be viewed at the Nature website:

- ▶ http://www.tmd.ac.jp/cmn/soumu/kouhou/nature_asia_2012.pdf
- ▶ <http://www.natureasia.com/en/publishing-index/asia-pacific/>



Open Windows Leading to the Global World

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

This window represents TMDU as a global base for its speedy exchange of information.

TMDU

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