

# More Intensive Collaboration and Exchange for Research Promotion and Development of Human Resources

Ghana-Tokyo Medical and Dental University Research Collaboration Project

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**THE GHANA-TMDU COLLABORATION** Project has been implemented under the support of the Ministry of Education, Culture, Sports, Science and Technology (MEXT), Japan, since 2008 for the purpose of research promotion on emerging and re-emerging infectious diseases and also of development of human resources in the field of infectious diseases. The project is also part of J-GRID (Japan Initiative for Global Research Network on Infectious Diseases), which is led by Professor Yoshiyuki Nagai. TMDU established a research center in collaboration with the Noguchi Memorial Institute for Medical Research (NMIMR), University of Ghana, and two faculty members are dispatched there from TMDU. We are at the mid-term of the 2<sup>nd</sup> phase of the J-GRID program, which is the time point at which research activities are expected to be maximized, according to the program road map.

As a research collaboration project, our activities should be evaluated by the quality and quantity of the scientific outcomes achieved. NMIMR is the center of medical research in the West African sub-region, and we share the same scientific mind as our Ghanaian counterparts. Professor Eiji Ido is a virologist specializing in HIV/AIDS, and he is coordinating joint research with Department of Virology of NMIMR. One of the important themes currently being pursued is the monitoring of the efficacy of drugs used for HIV-positive in-

dividuals in Ghana, which was introduced as a WHO guideline on the basis of research on European patients. The outcome from the analysis of this subject is of direct benefit for Ghanaians because the research will lead to better HIV/AIDS control measures being used in Ghana.

As his second main subject, Professor Ido is promoting research on the molecular aspects of virus evolution by using HIV samples collected in various areas in the African continent. He has established many footholds through his field research in Africa, and his work is contributing to the monitoring of the appearance of new and unexpected viral strains with higher virulence through genetic recombination of viral genome. As for the third research subject of virology, hemorrhagic viral infections are now under the consideration. Ebola, yellow fever and dengue fever are endemic in Africa, but epidemiological information has not yet been elucidated in detail. Moreover, three patients with Lassa fever were reported in Ghana in the end of 2011. Considering those situations, surveillance of viral hemorrhagic fever seems to be one of the most urgent subjects in Ghana and also for Japan.

Dr. Takashi Suzuki, Associate Professor of Parasitology, is researching African trypanosomiasis. Safe and effective drugs have not yet been developed for the human African trypanosomiasis (HAT) pathogen. Parasite genes controlling "movement" are targets for drug development, and several proteins encoded by those genes are candidates of new drugs for HAT. Furthermore, although trypanosomiasis is a Neglected Tropical Disease (NTD), Dr. Suzuki has shown that tsetse flies in Ghana, intermediate hosts for African trypanosomes, are infected with African trypanosomes in an unexpectedly high frequency, and transmission of the parasites seems to be more common compared to our former assumption. Among insect-borne diseases, malaria is the most important infectious disease in Ghana. Although



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many malaria research projects are ongoing at NMIMR, our unique collaboration focuses on vector mosquitoes. Our new parasitology project starts to develop gene-manipulated mosquitoes that have a reduced malaria-transmitting capacity. Innate immunity of anopheline mosquitoes against malaria parasites has been studied, and gene-manipulated mosquitoes with enhanced expression of anti-parasite proteins could prove effective in blocking malaria transmission. For this purpose, the insectary of NMIMR was improved, and new experimental systems for mosquito research are being transmitted from Japan to Ghana.

A new activity in our joint research center at NMIMR is issuing our "News Letter". This publication is written in Japanese because its main scope is to introduce Ghana to Japanese people. The News Letter is put out as a monthly issue via web-based distribution. Contents of our News Letters include scientific progress in our research collaborations, reports of scientific meetings related to our research projects, and introduction of Ghanaian events, tradition, culture and foods and fashion. Many readers are interested in Ghanaian life style, and Ghanaian foods such as *fufu* and *wache* were becoming familiar to Japanese. Through these reporting activities, we expect that our research collaboration project will be understood in more detail and will be supported not only by researchers, but also by people who are outside the infectious disease research field.

Exchange of young students and researchers from the both sides should be promoted more strongly. From Ghana, TMDU has invited two NMIMR staff researchers, and also five young researchers have made short-term visits to TMDU. The latter five researchers belong to the Science and Technology Research Partnership for Sustainable Development (SATREPS) project, which is implemented under the budget of JST and JICA; however, TMDU is responsible for planning, coordinating and implementing the collaboration

project with Ghanaian side. On the other hand, TMDU medical students are scheduled to be dispatched to NMIMR as an educational activity as part of their "Project Semester" portion of the Faculty of Medicine curriculum. In the 2011 school year, six students in all were nominated: three for parasitology research and three for virology research. These students will stay at NMIMR for four to seven weeks. During their stay, Professors Ido and Suzuki will guide their research, medical training and daily living in Ghana. Mutual exchange is very important in our project. For Japanese students and young researchers, experience at the front line of infectious diseases will undoubtedly be highly motivational for their interest in research, and it cannot be ignored that such experiences are not available in Japan.

As this is the fourth year of our research collaboration project, we need to expand and intensify our exchange with our Ghanaian counterparts both in research and human relationship. Ghana is geographically distant from Tokyo, but we are convinced that true collaboration is deepening through our face-to-face interaction, and that our two dispatched researchers are accomplishing their difficult missions. Finally, I have to let the people of Japan know that our Ghanaian friends gave their warm hearts to support us after March 11, 2011 and that donation boxes were seen in various places in Accra.



Ghanaian warm hearts : Call for donation to support the big disaster of March 11, 2011.

- ① The main entrance of NMIMR.  
② Research supervision in the Parasitology Laboratory. Dr. Takashi (left) and Mitsuko Suzuki (right)  
③ Dr. Ido is instructing a Ghanaian researcher in HIV research.

Memorial Garden for Dr. Noguchi in Accra.



# Transfer Japanese Knowledge and Techniques to Doctors in Chile and the Greater Latin American Region

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

The Latin American Collaborative Research Center (LACRC), located within Clínica Las Condes (CLC) in Santiago, Chile, has been operating since May 2010 as one of TMDU's overseas activity centers. LACRC is managed in collaboration with CLC, the University of Chile, the Ministry of Health of Chile, and the Chilean-Japanese Institute of Digestive Diseases, which is located within the Chile's largest national hospital, Hospital Clínico San Borja Arriaran.

## LACRC Activities

Dr. Takashi Ito, a human pathology specialist, and Dr. Tetsuro Nishikage, an esophageal and general surgeon, were posted to LACRC in 2011. Their mission is to work on the national colorectal cancer screening program in clinical practice (endoscopy and pathology), do research, and improve the educational training of young Chilean doctors. They were joined in December 2011 by Dr. Kouji Tanaka, who will take over Dr. Nishikage's position in early February 2012 (Fig.1).

Dr. Ito has been engaged in research activities and pathological diagnosis at CLC with the aim of standardizing different diagnostic criteria between Japanese and Chilean pathologists. Drs. Nishikage and Tanaka are working with CLC doctors to train young Chilean doctors working in CLC and San Borja Arriaran Hospital in diagnostic total colonoscopy procedures and endoscopic mucosal resection methods (Fig.2). As they are surgeons, they also assist with surgical operations held in these hospitals.

## Symposium and Training Course

TMDU dispatched a delegation composed of three professors of clinical medicine (Drs. Kenichi Sugihara, Tatsuyuki Kawano, and Masakazu Nagahori) and three professors of basic medicine

(Drs. Kyoichi Nakamura, Hiroshi Hukamachi, and Yoshinobu Eishi) from August 13 to 25, 2011 to Chile and Ecuador. These TMDU professors (Fig. 3) participated in a symposium and training course held at CLC over a three-day period, with the aim to transfer Japanese knowledge and techniques to doctors in Chile and the greater Latin American region.

At the symposium, Dr. Fernando Fluxa, an organizer of the conference, included a special session to introduce the history and legacy of the Chilean-Japanese Institute of Digestive Diseases, which was established 20 years ago with support from JICA and TMDU. Some Latin American doctors in the audience were alumni of the Institute, where they took a training course to learn endoscopic and pathologic techniques and increase their knowledge of digestive diseases, focusing especially on gastric cancer. They showed their appreciation for the teaching of Drs. Pedro Llorens and Kyoichi Nakamura (Fig.4) at the Institute with a warm round of applause.

## The First Visit of TMDU Mission to Ecuador

On the way from Chile to Japan, TMDU mission members visited Quito, the capital city of Ecuador, to discuss TMDU's support for implementation of a national colorectal cancer screening project in Ecuador. A pilot study will be started in Pablo Arturo Suarez Hospital, the largest national hospital in Ecuador from February 2012. This study is supported by a budget from the Ministry of Public Health and involves more than 5,000 asymptomatic people in Quito. TMDU's mission visited the Pablo Hospital and met with the Vice-Minister of Public Health, the Director of Pablo Hospital, the Japanese ambassador to Ecuador, and the director of JICA in Ecuador. The mission members also visited University of the Americas and Central University of Ecuador where many TMDU-JICA training course graduates are now

working in an academic capacity, including Dr. Jaime Acosta, the Director of the Postgraduate Institute. Dr. Acosta organized the ceremony in appreciation for TMDU's role in the previous training course for Ecuadorian doctors and support for the colorectal cancer screening. TMDU will support this project by dispatching TMDU professors for the annual meeting on the way from Chile and LACRC doctors for a short stay in Quito, and inviting Ecuadorian doctors to Chile for their training in San Borja Hospital.

## National Colorectal Cancer Screening in Chile

A large sized colorectal cancer screening (10,000 patients per year) will be done in the San Borja Hospital. This screening is supported by a grant (USD\$500,000) from the Ministry of Health. Two smaller screenings (serving a total of 6,000 patients per year) are supported by a budget from the local governments in Valparaíso, the parliamentary city of Chile, and Punta Arenas, Chile's most southern city, which has the highest mortality rate of colorectal cancer in Chile.

In these projects, all of the immunological fecal occult blood test samples will be collected and analyzed at the CLC laboratory, with the goal of standardizing pathological diagnostic criteria and total colonoscopy methods according to Japanese guidelines. Dr. Manalich, the Minister of Health, has proposed to make a new agreement between TMDU, Ministry of Health, and Chilean-Japanese Institute of Digestive Diseases in order to start the new project and to collaborate for training young colonoscopists in the training center within the Chilean-Japanese Institute in San Borja Hospital.

After the agreement, licenses for qualifying abilities to attend colorectal cancer screening program will be provided from LACRC and Ministry of Health to the doctors who have successfully completed their training course in the training center.

## Japanese Research Grant for the Project

The first Japanese research grant to be approved by JSPS and supported by JICA for the collaborative research in connection with this project is entitled "Identification of environmental and genetic risk factors of colorectal cancer in Chilean population". Using this grant TMDU will dispatch Dr. Maki Kobayashi, a molecular biologist, to sup-



3 TMDU mission members (from left, Profs. Eishi, Yoshida, Nakamura, Sugihara, Hukamachi, Kawano, and Nagahori) visited the University of Chile to discuss collaborative research and the student exchange program.

port research activities in LACRC from July 2012 for two years. She will work together with Dr. Hiroshi Kawachi, a TMDU human pathology specialist, who will start working in CLC from March 2012 with Kimihiro Takemura, a TMDU medical student in the MD-PhD course. They will collaborate with research staff in the oncology and genetic laboratories at CLC and the University of Chile.

## TMDU Project Semester

In October 2011 six TMDU medical students were dispatched to Chile. Three of the students went to CLC and three went to the University of Chile. During their five-month term they will do medical research as part of their project semester. These 4th year students are now working in CLC laboratories such as oncology and molecular genetics, pathology, and urology, and in University of Chile laboratories such as melanoma immunotherapy, neuroscience, and ulcerative colitis. These TMDU students are exchanging their knowledge and culture with Chilean students at their laboratories and with students who are studying Japanese at the University of Santiago. On January 11, 2012, the project semester students (Fig.5) presented their research results to the assembled Japanese and Chilean professors.



4 Profs. Pedro Llorens (left) and Kyoichi Nakamura (right) attended the TMDU-CLC conference held in August 2011, where the history and legacy of the Chilean-Japanese Institute of Digestive Diseases were introduced.



1 TMDU staff members (from right, Drs. Ito, Nishikage, and Tanaka) at LACRC in January 2012 with a LACRC secretary (far left, Ms. Rieko Shinomiya), in front of the CLC hospital.



2 TMDU Dr. Tetsuro Nishikage (center left) is shown demonstrating endoscopic mucosal resection procedures with Dr. Fernando Fluxa (center right), Director of CLC Endoscopy Center, to young Chilean doctors at the CLC hospital.



5 Six TMDU 4th year medical students (from left, Yuri Teramoto, Fumitaka Ihara, Yukiko Shigemasa, Fumina Sawayanagi, Ikuno Yamashita, and Shohei Yamashita) have just finished giving formal presentations of their research at the CLC conference center.

# New Video Conference System Helps Promote Activities at CU and TMDU

CU-TMDU Research and Education Collaboration Center, Thailand

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## President Ohyama Receives Honorary Degree

President Takashi Ohyama of TMDU was awarded an Honorary Degree from Chulalongkorn University (CU) for his longstanding contribution to CU in the field of education, research and clinical practice. After the conclusion of the Agreement of Academic Affiliation between both Dental Schools at TMDU and CU in 1991, many projects have been carried out between the two schools. In particular, the Japan/Thailand Core University Program in Dentistry of JSPS, which was conducted over 10 years from 1996 to 2005, became a trigger for active mutual exchange of faculty members and collaborative research. At the same time, the number of international students from CU to TMDU has increased dramatically. Currently, more than 20 faculty members who obtained a PhD from TMDU work actively at CU.

An Agreement of Academic Affiliation was also signed between both Medical Schools in 2009, and the CU-TMDU Research and Education Collaboration Center was established at CU in 2010. Such vigorous promotion of international ex-

change is truly due to the leadership of President Ohyama.

President Ohyama also has participated in mobile dental services for dentistless areas in Thailand over the years, and has contributed to the improvement of oral health in Thailand. Every year, the Faculty of Dentistry at CU provides mobile dental services for poor northern Thai people, who cannot otherwise receive dental treatments, as a Royal Project. President Ohyama voluntarily participates in this project almost every year. He directly talks with people in Thai, makes dentures and gives dental treatments, and thus his conduct has been really appreciated.

As the international accomplishments that he has contributed to CU and Thailand privately and publicly are highly regarded, he was awarded an Honorary Degree from CU. On July 7, 2011, a grand ceremony was held at CU. TMDU Professor Takashi Ono and Dr. Jun Tsuruta accompanied the president. Princess Sirinthon gave the Certificate of Honorary Degree to three recipients. President Ohyama was the only international recipient. The ceremony was broadcast over the Internet from CU. On that day, as graduation ceremonies were also conducted and the CU campus had a festive mood.

## New Video Conference System

A new Video Conference System (VCS) was installed in the CU-TMDU R&E Collaboration Center to smoothly conduct collaboration and communication between the two universities. Because the VCS has already been set up at several lecture rooms, auditoriums and the International Exchange Center in TMDU, it is possible to exchange much information through this system. Professor Atsuhiko Kinoshita (Institute for Library and Media Information Technology) has given critical support for the installation project of VCS.

The first broadcast was done between TMDU



and the R&E Collaboration Center on June 2, 2011 when Professor Ikuko Morio (Director, International Exchange Center) and Dr. Tsuruta visited the R&E Collaboration Center in Thailand. One week later, a live broadcast from TMDU was attempted during a symposium with dentists from the Thai Ministry of Public Health, but there was trouble with the voice communication. After several adjustments, more than 20 programs, including seminars, symposiums and research meetings have been broadcast. The time difference between two countries is only two hours, which helps us to promote this international educational activity.

Particularly between the respective endodontic departments, the "TMDU-CU International Lectures of Tooth Pulp Biology and Endodontics for Graduate Students" was held and much information was exchanged each other using this VCS.

The audience at CU can participate in the lecture by watching a real time presentation on a big screen via the system. In a lecture by Professor Hideaki Suda (Pulp Biology and Endodontics), 25 PhD students of TMDU and 20 CU faculty members and graduate students attended and had fruitful discussions. These experiences suggest that large-sized lectures and hands-on workshops for clinical and basic education have great potential.

Regarding student exchange programs, Professor Yoshinobu Eishi (Human Pathology, Faculty of Medicine) and two medical undergraduate students of TMDU were able to meet and interview Dr. Kasaya Tantiphachiva (Faculty of Medicine, CU) and talk about their plans before they visited Thailand.

The system features a sophisticated camera and audio equipment which enables smoother communication between two universities than the existing free video-chat systems can manage. The system will be applicable to various purposes in many fields, regardless of borders in the future.

## Activities of the CU-TMDU R&E Collaboration Center

At present, the coordinator of the center is Assistant Professor Atiphon Pimkhaokham, a TMDU alumnus and faculty member of CU, but there is no full-time TMDU staff member yet. Dr. Jun Tsuruta (Dental Education Development) was the first researcher to stay at the CU-TMDU Center, from June through July in 2011. His research topic is "Dental education at the era of free-movement of dentists across the border." He had many chances to meet people who were deeply involved in dental education in Thailand in this center. Observation and discussion are two very important elements to improve dental education system in both universities.

On August 3, 2011, a "Young Researchers' Meeting" was held at the CU-TMDU R&E Collaboration Center. Two professional groups, Prosthodontics and Operative-Pedodontics, had a group discussion on their research topics. At the same time, in Tokyo, Professor Morio and Professor Kinoshita joined the meeting via VCS. All participants realized the importance of more involvement of the young generation for further collaboration.

Since the CU-TMDU R&E Collaboration Center is a well-equipped facility and its working environment for research is excellent, we greatly encourage more TMDU academic staff members to use this center in the future.

① An audience in Thailand virtually attends a lecture by Prof. Suda at TMDU's Tokyo campus.

② Young Researchers' Meeting at CU.

③ Prof. Junji Tagami is a strong supporter of young researchers at CU and TMDU.

### Participants of Young Researchers' Meeting

TMDU: Four young researchers and Prof. Junji Tagami (Dean), Prof. Hiroyuki Miura (Fixed Prosthodontics), Dr. Noriyuki Wakabayashi (Removable Partial Prosthodontics), Dr. Tsuruta.  
CU: Seven young researchers and Dr. Atiphon, Dr. Orapin and Dr. Bussayarat.



President Ohyama (right) receiving a CU Honorary Degree from Princess Sirinthon.

President Ohyama (right) was the only international recipient of an Honorary Degree.



## Flood Disaster in Thailand

From mid-October to December in 2011, Thailand suffered from devastating flooding throughout the country. CU is located in the center of Bangkok, but the university buildings could avert catastrophe fortunately. However, many homes of staff members, students and patients were damaged by the flood. Moreover, hospitals and universities were forced to close until January 2012. Some exchange programs between CU and TMDU were also cancelled or postponed. All the staff members and students in TMDU express our sincere sympathies to those who were affected by the flood and pray for the early recovery and reconstruction in the country.