

Newsletter

School of Dentistry
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Enhancement of multidisciplinary education for future dental professionals

by Professor Takashi Miyazaki: Dean, School of Dentistry, Showa University

Japanese society is rapidly changing into an ultra-high aging society with a low birthrate and declining total population. This phenomenon will have repercussions for the social structure, economy, and health services in Japan. In particular, an improvement on medical services for elderly people is required as a top priority. Despite this, the dental profession has been adversely affected in terms of medical income and reduction of applicants to dental school during the past decade.



However, I believe that dentistry plays an important role in providing lifesaving surgical treatments as well as being integral to ensuring healthy aging. Dentistry supports the perioperative management of surgery, contributes to lifesaving treatments and facilitates

earlier recovery after surgery. Dentistry is also used to manage declines in feeding and swallowing function, immune function, and cognitive function of elderly people in hospitals, nursing homes, and home settings. To support these services dentists must work as part of a team in collaboration with other medical staff. Similarly, it is essential that other medical staff work in cooperation with dental staff. Therefore, the introduction of multidisciplinary education to all medical specialties is extremely important and necessary to equip future medical and healthcare professionals with the skills necessary to support the healthy aging of our society.

At Showa University, we have a medical school, a pharmacy school and a nursing and rehabilitation school along with our dental school. We have a history of a half-century of dormitory-based first-year education. We also introduced interdisciplinary education

curriculums more than six years ago (since 2006) that include PBL's, simulations, and clinical clerkships with multidisciplinary teams of students from the four different schools. This might be the most important challenge for medical education in the world. I fully expect my graduates to contribute to the healthy aging of the population through both hospital and community medical services as part of multidisciplinary medical teams. In addition, I believe the future of dental professionals is bright thanks to our excellent educational system.



Introduction of the Showa University Fujiyoshida Campus

by Masako Maeda: Faculty of Arts and Sciences at Fujiyoshida

In April 2013, I fortunately started my new position at the Showa University Fujiyoshida Campus where I used to live as a freshman. The campus is located at an altitude of 900 meters at the foot of Mount Fuji. Mount Fuji is the highest mountain in Japan and was selected as a UNESCO World Heritage site in June 2013. The number of tourists visiting this area has increased, and even more are expected in the future.

Approximately 600 first-year students of all four departments of our university: Medicine, Dentistry, Pharmaceutical Sciences, and Nursing and Rehabilitation Sciences, study at the Fujiyoshida Campus. The students live together in the dormitory. They study hard and participate in extracurricular

activities, including cooperation with one another.



Located in a beautiful natural environment, the campus possesses a riding ground, a tennis court, a rugby field, and a soccer field. In the spring of 2013, the Showa University Educe Garden was constructed at the campus, where I planted seeds of flowers and vegetables along with the students. A this summer,

we harvested eggplants, green soybeans, cucumbers, tomatoes, pumpkins and Japanese radishes. All of the harvest was enjoyed as the dormitory's summer time cuisine.

The members of each dormitory host their own events. Starting with orientation, the Dormitory Festival, Halloween Party, and Christmas party are held each year. These events are engraved deeply into each student's reminiscences of their college years.



The Introduction of the Website for International Exchange Program

by Professor Hirotaka Kuwata : Department of Oral Microbiology and Immunology

We introduce to you the website for our international program, which is brand new for this year. Here you will find the purpose and policy of our international postgraduate program. The website also contains the information for application. We request your personal information (Name, address, nationality, etc.) and an essay. In the essay, please describe the reason for applying to our program. Applicants can add other supplemental information, for example, pre-dental experience and so on. There is no page limit and format specification, but we expect your supplements to be organized and abstracted. Usually, the application deadline is around July or August, but we recommend you to check the website occasionally for the most current information.

Though this website, we can also guide you to the form (pdf, rtf and doc files) for our fellowship award. A limited number of applicants (3-4) can receive scholarship stipends (1,200,000 Yen/year for one year). Candidates are selected based on their academic record and essay.

You must fill in all the required sections and send it to us by email. Additionally, if you already have a recommendation letter, please provide the name of the person and send us the recommendation letter by mail. You can find our mailing information on the website. The letter must have a letterhead and a signature.

For a comfortable stay during the program, we can offer you residences which are a 1-minute walk away. The Hatanodai station, which

connects the Tokyu Ikegami line and Oimachi line, is a 10-minute walk away. You can view images of our rooms on the website (<http://www.showa-u.ac.jp/en/international/program/dent/index.htm>). Please contact us if you need additional information (int-exc@ofc.showa-u.ac.jp).



The 49th ISO/TC 106 Dentistry in Korea

by Yasuhiro Hotta: Department of Conservative Dentistry, Division of Biomaterials and Engineering

In 2013, I participated in the 49th ISO/TC 106 Meeting in Incheon, Korea. The ISO/TC 106 section has been held since 1962, and this year there were over 308 participants from 21 countries around the world. Since most of dental-related items are standardized by the TC 106, all participating members debate the hot topics to prevent an unfavorable decision for their own country. Japanese members were selected from various dental councils and companies, and then worked to promote the Japanese Industrial Standard.

Until last year, Dr. Tamaki (Oral Biomaterials and Technology) and Prof. Okano (Dental Radiology) had been participating in the ISO/TC106 meeting from Showa University. Since Prof. Okano retired from the university this year and Dr. Tamaki moved to Asahi University, this meeting seemed to be estranged from Showa University. However, a lot

of new work item proposals related to CAD/CAM SYSTEMS have increasingly been discussed at the ISO/TC106 SC9 session. Therefore, Professor Takahashi, who is the chairman of SC9, invited me to join the meeting as an expert of Ad-hoc 1 "Interoperability of CAD/CAM systems" because I was already in the Japanese committee.

Presently, CAD/CAM systems in dentistry are being widely used and various companies, which are mainly in Europe, have competed in the

development and sales. In the future, the opportunity to take the initiative in this field will be accelerated with the creation of ISO standards.

Because Japan made great efforts to attend this SC meeting, we won two principal posts (Chair and Secretariat). Japan can proceed advantageously on various ISO proposals and show good leadership. Therefore I will be actively involved in the future and work closely with various CAD/CAM-related companies in Japan.



Showa University's medical support team for cleft lip and palate in the Republic of Madagascar

Amelie Hashimoto
(6th-year Dentistry student)

I joined Showa University's medical support team for cleft lip and palate in the Republic of Madagascar from June 18th to July 2nd in 2013. This project has been active since 2011. Four students (from the Schools of Medicine, Dentistry, Pharmacology, and Nursing and rehabilitation) also participated. We stayed at the Clinic Ave Maria in Antsirabe for two weeks. Our team examined more than 50 patients with cleft lip and palate, and performed 21 surgical operations. I performed a variety of perioperative care, including anesthesia, besides observing the surgeries. We also visited the home of a postoperative patient and a dentist in Antsirabe. My experiences there touched me a lot. In Madagascar, poverty is a serious problem. It looked to me that not enough food is provided. Most patients with cleft lip and palate suffer from malnutrition because of dysfunctions in their



feeding and eating in addition to poor food. I heard that most Malagasies don't have the habit of brushing their teeth except for the wealthy class. Knowing these facts, I realized the importance of dentistry for such developing countries more than I expected before visiting. There are many ways that dentists could provide a more healthy life for these people, for example, by providing secondary bone grafts on the defect, applying palatal obturator, providing orthodontic treatment, dental caries prevention, dental hygiene treatment, and so on. Next time, I hope dentists also take part in this project.

From this experience, I recognized that financial background, hygiene, and education are all prerequisites for a healthy life. If I hadn't taken part in the project, I wouldn't have noticed this very important fact.

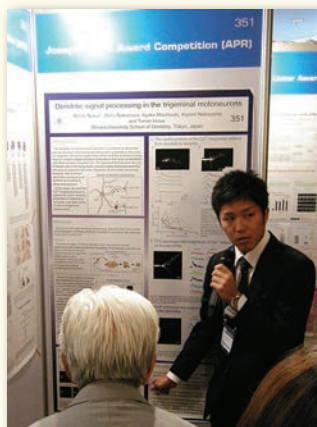
I would like to express my deepest gratitude to those people who gave me this precious chance.



Poster Discussion at IADR-APR 2013 at Thailand

Kento Nakai
(5th-year Dentistry student)

I received the JADR/Joseph Lister Award in 2013 for my research on "Dendritic signal processing in the trigeminal motoneurons" and was given a chance to present our paper at the poster session of the IADR-APR 2013 meeting from August 21-23 in Bangkok, Thailand. I studied dendritic signal processing at the Department of Oral Physiology in our school as a student of the Multi-Doctor program. I found that somatic action potentials evoked rises in calcium concentrations in dendrites and that the pattern of the response along the dendrites differed from dendrite to dendrite. Furthermore, the voltage dependent sodium channel blocker tetrodotoxin decreased the calcium responses, whereas the A-type potassium channel blocker



4-AP enhanced the responses in almost all dendrites.

A lot of excellent studies were presented by students and young researchers from different Asian countries at this conference. I felt that these people will lead the development of dental science. I was very impressed by the attitude of the student participants from Thailand who tried to study the papers with eagerness. These experiences at this conference inspired me to continue to do research. I hope to get some good results that will benefit dentists in the future. Finally, I would like to thank to my supervisor Prof. Tomio Inoue, Dr. Shiro Nakamura and other staff of the lab.

Introduction of Multiphoton confocal microscope

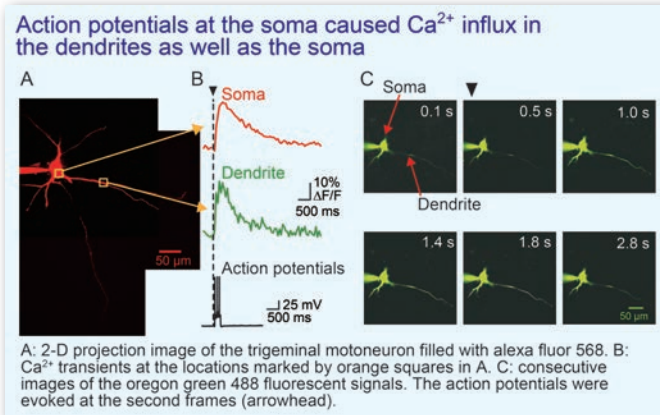
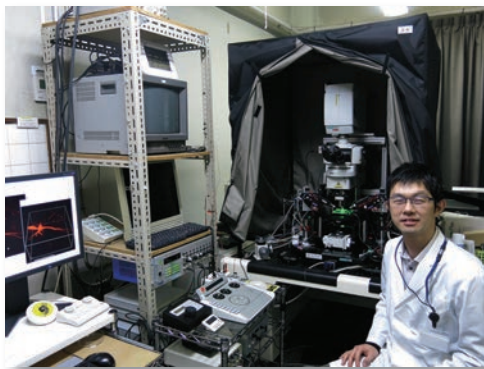
by Shiro Nakamura: Department of Oral Physiology

Nikon's A1R MP multiphoton confocal microscope was installed in 2009 at Showa University's School of Dentistry, and was supported financially by the MEXT (Ministry of Education, Culture, Sports, Science and Technology, Japan) Program for the Strategic Research Foundation at Private Universities (2012-2016). The A1R MP is a powerful multiphoton confocal imaging system featuring a high resolution galvanometer scanner and a high speed resonant scanner that is capable of frame rates from 30 frames per second (fps)

at 512 x 512 pixels to 420 fps in band scan mode. This system also allows fluorescence imaging down into deep regions of the specimens of up to about 1 mm, using pulsed long-wavelength light from 700 to 1,000 nm for two-photon excited fluorescence.

In our laboratory, we have used the multiphoton imaging to investigate the neural mechanisms controlling jaw movement. Specifically, we have examined the dendritic signal processing in rat trigeminal motoneurons by monitoring the intracellular calcium

concentration using a calcium imaging method. We are further developing a combined single-photon glutamate uncaging and two-photon imaging method, which will enable two-photon imaging during dendritic optical stimulation. These data obtained by using the A1R MP provide a compelling demonstration of the active dendritic properties of trigeminal motoneurons and will contribute to the prevention of irregular excitability of trigeminal motoneurons in pathological conditions such as bruxism.



Ph.D. Program Introduction

by Wu Rihan: Dalian Medical University, China



I am Wurihan, from China. I was enrolled in the PhD course for dental biomaterials in autumn 2010. I used to be a dental practitioner in a dental hospital for nine years and then became a dental academic. It was my great pleasure to be a PhD student in Showa University's School of Dentistry.

My research topic is in surface modification of dental implants under the supervision of Prof. Miyazaki. I was impressed by the range of his knowledge accompanied with his way of thinking. My appreciation also goes to Dr. Shibata. I often noted his careful instructions even in daily life. My friends in the Lab overcame our language barrier, and so I became familiarized with Japanese society and traditions very soon. Aside from dental biomaterials in the Lab, my PhD work is often in collaboration with the biochemistry

department. Many thanks to Professor Kamijyo, Dr. Yamada and Dr. Suzuki as well as the members of this group for their kind assistance. When I was struggling with operating instruments or facing some trouble, they were always willing to deal with it quickly. My sincere appreciation is extended to all the staff of Showa University, and especially the staff of the international exchange center and student affairs office. All of them are so kind to me and show great patience.

As a consequence of the fact that Showa University provides the support and a useful platform for research, many overseas students and researchers from a range of countries have visited our facilities. I am sure new ideas were inspired as well as cooperation and friendship because of these international relationships.

It was so happy to have met everyone at Showa University. I really enjoy my life and will always cherish the time spent together at Showa University.

International Exchange Center

by Takeshi Miura: International Exchange Center

At the International Exchange Center of Showa University, we support the foreign students and research fellows who want to study at Showa University. There are schools in our University: Medicine, Dentistry, Pharmacy and Nursing and Rehabilitation.

Starting from April 2013, we have welcomed 45 foreign students and research fellows from India, Indonesia, China, Taiwan, Korea, Thailand, Singapore, UK, France, Austria, Germany, Hungary, Madagascar, and US. In this academic year, we have offered scholarships to 9 research fellows, and offered our dormitory to 30 research fellows and foreign students.

Our dormitory was replaced with a new one last year. These dormitories have a "common space" area (shower, toilet, and kitchen) that the foreign research fellows share with their roommate. They have enjoyed experiencing not only Japanese culture, but also another country's culture from

their roommate.

In May, we had a welcome party for the research fellows (cf. the photograph).

During Summer and Autumn, we visited Asakusa & Ryogoku with some foreign students and students of Showa University and we also had an

international exchange party with them. We wanted to create a chance for the foreign students to interact with our students from all of the departments, and also provide an opportunity to better experience Japanese culture. In addition, we help our students and doctors travel abroad for study and research, and also help our university



international exchange party with them. We wanted to create a chance for the foreign students to interact with our students from all of the departments, and also provide an opportunity to better experience Japanese culture.

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Number of international guest scholars at the School of Dentistry in 2013.

Country	Number
India	6
Taiwan	5
Indonesia	1
China	1
Germany	1

Introduction of Foreign Research Fellow

by Dr. Darshan B Mundinamane (Rajiv Gandhi University of Health Sciences, Bangalore, India)



Warm greeting from INDIA to everybody at Showa University School of Dentistry.

To begin with I would like to express my sincere gratitude to Showa University for giving me this opportunity to work as a research fellow in the Department of Periodontology since April 2013. I received my Master's degree in Periodontology from the Rajiv Gandhi University of Health Sciences, Bangalore, India and

I am currently a faculty member of D.A.P.M.R.V. Dental College, Bangalore. I've been having a pleasant stay in Tokyo Japan with my wife Shwetha.

The Department Chair of Periodontology, Professor Matsuo Yamamoto's tremendous knowledge and vast experience has been a supportive factor in my research endeavour. Additionally, Dr. Reiko Suda, Dr. Takashi Takiguchi, Dr. Yasushi Miyazawa, Dr. Yoko Koide and all the other staff of the department have helped me become familiar with the university campus. Dr. Takashi Takiguchi also has been guiding me in publishing an article and Professor Yamamoto

gave me an opportunity to attend the 10th meeting of the Asia Pacific Society of Periodontology in Nara.

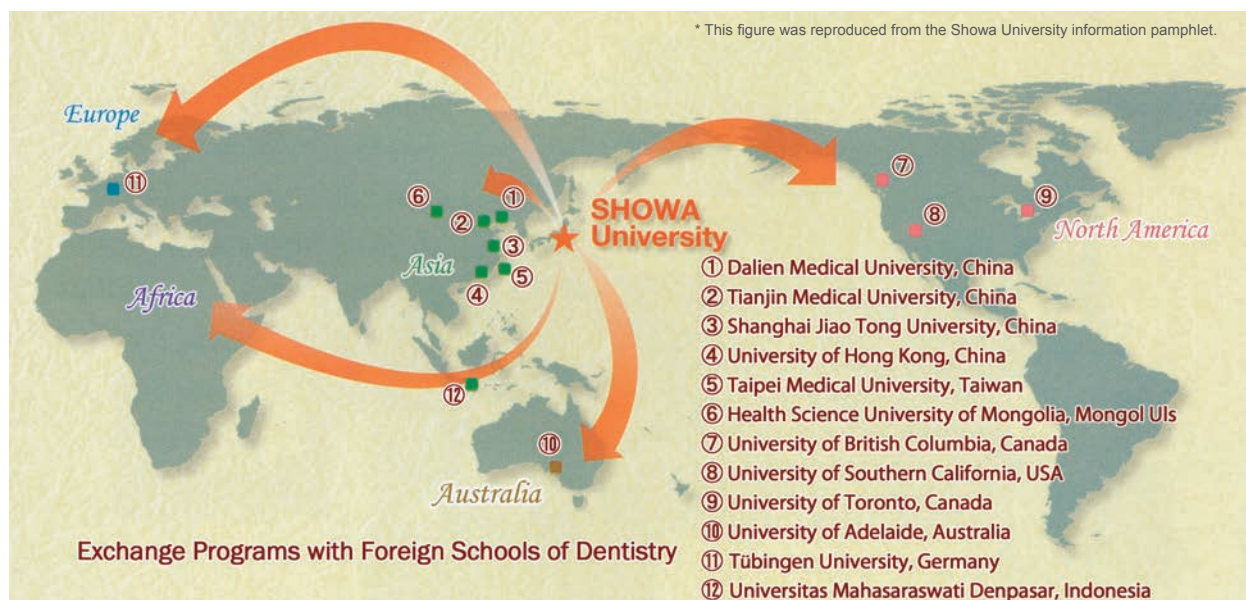
Currently I'm working under the able guidance of Dr. Hiroataka Kuwata, the Department Chair of Oral bacteriology. He is an unpretentious, down to earth person with impressive skills and a wealth of knowledge. Dr. Hirobumi Morisaki is a very humble person and an expert teacher.

The library has a very wide range of journals and books that is ample enough for writing good research publications.

The staff of the International exchange centre are kind and very helpful. I would like to thank Mr. Takeshi Miura and Ms. Taeko Suzuki, without whom I and my family could not have managed by ourselves. Furthermore, the accommodation they provided to me has been quite comfortable.

Last, but not least, I would like to thank Dr Nagesh, Former Dean; Dr. Dinesh, Dean; and Dr. Suchetha, Department Chair of Periodontology at D.A.P.M.R.V Dental College for providing me this opportunity. The time spent in this esteemed university is undoubtedly one of the most memorable periods in my life till now.

Exchange Agreements with Foreign School of Dentistry



Ph.D. Program: Application Information

Showa University Graduate School of Dentistry offers interdisciplinary training programs in basic and clinical dental sciences, leading to a Ph.D. degree. Our Ph.D. program, for enrollment in either September 2014 or April 2015, accepts applications from international students. For further information, please contact Showa University International Exchange Center (e-mail: int-exc@ofc.showa-u.ac.jp). <http://www.showa-u.ac.jp/en/index.html>

Paper published in Nature Immunology

by Professor Masanori Nakamura: Department of Oral Anatomy and Developmental Biology



Our paper was published in the journal *Nature Immunology*, volume 14, pages 554-563. Past research has shown that mast cells mature toward an anaphylaxis-sensitive phenotype. In this study, we showed that PLA2G3, a mammalian homolog of the anaphylactic bee venom phospholipase A2, regulated this process.

This study was a collaboration between the Tokyo Metropolitan Institute of Medical Science and Showa University School of Pharmacy. To my delight, an ultrastructural photograph from our study was adopted as the cover of this journal volume. Even if an article can be accepted by the journal, it is the first and maybe the last to be adopted on the cover in my life.



Invitation for contributions of articles and presentations to Showa University Dental Society

by Executive Director: Masanori Nakamura

Showa University Dental Society ended its history of 33 years in 2013 and is now integrated with The Showa University Society (TSUS). TSUS consists basically of researchers, postgraduate students and undergraduate students of the four schools (Medical, Dental, Pharmaceutical and Nursing and Rehabilitation Sciences) and research collaborations. TSUS organizes a scientific meeting six times a year and publishes an official scientific journal (The Showa University Journal of Medical Sciences: TSUJMS) twice a year. The journal is a peer-reviewed scientific journal dedicated to the dissemination of new knowledge and information on all sciences. Manuscripts relevant to dentistry (including the oral cavity and associated structures) on topics related to health and disease are very welcomed. In addition to the original emphasis on basic and clinical research, the journal is also accepting papers on technical advances, which



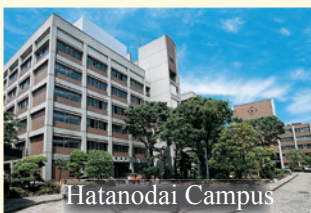
report original and new research on clinical tools and techniques.

TSUS welcomes contributions of articles to TSUJMS and also participation in our meeting from domestic and foreign researchers who are working in this scientific field.



Cover Photograph: "Mt.Fuji and Fujiyoshida Campus " Mount Fuji were registered as the world heritage on June 22, 2013.

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School of Dentistry http://www.showa-u.ac.jp/en/researches/research_school_dentistry.html



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