

# Newsletter

School of Dentistry  
Showa University

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## Beyond globalization

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



Dentistry, as well as other areas of education in Japan, is currently facing globalization and standardization. Consequently, it has become a greater challenge to determine whether we can graduate our dental students at a level congruent with global standards. We have been teaching our students using the Japanese language and textbooks that cover international standards; however, the quality of teaching depends on the capacity of the professors. In 2001, a significant improvement in Japanese dental education was made by introducing

a national model core curriculum covering approximately 60% of the 6-year course contents of the Japanese dental program. The Common Achievement Test (CAT) was then introduced as a compulsory student assessment for all dental students to evaluate their levels of competence before commencing a clinical clerkship. However, some believe the level of clinical education in Japan is behind world standards, particularly because of the lower minimum requirements of clinical cases in undergraduate clinical training. This may be due, in part, to the fact that the final assessment for the national dentistry license is a governmental, paper-based examination. Thus, the applicants must spend significant time in preparation for this examination. We, therefore, introduced a new curriculum in 2004 that covers the model core curriculum, as well as team-approach training with other medical and related fields, community-

based learning and self-oriented problem-based learning. These changes were made to provide better-educated dentists capable of contributing to the demands of our aging society. Furthermore, the members of the professors' board in our dental school participated in a workshop held in July 2009 to discuss the clinical competence of our students including their professionalism, communication skills, team approach with medical staff and community dental services. We will also administer an Advanced Objective Standard Clinical examination (OSCA) in March 2010, after the clinical clerkship training in the 5th year of the dental program. This examination will be reviewed by an international assessment board from the Universities of Adelaide and Hong Kong. We must continue to innovate our dental curricula to meet not only rising global standards but also demands of a quickly aging society in Japan.

## An integrated oral medicine project sponsored by eight allied universities

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

Japanese society is experiencing a rapid shift towards becoming an extremely quickly aging society. Because of the increase in the number of medically compromised patients and the importance of oral function, dentistry is facing new challenges. Thus, the cooperation of dentists with medical doctors, nurses and other medical staff has become increasingly important. Beyond an individual scope, a cooperative, team approach is the primary educational goal of the dental program at Showa University where students acquire skills to work collaboratively so they can provide the best services to future patients. Recently, we introduced an oral physician course as one of four main courses of our DDS program. This course has not only been developed in our school but has also become popular in

dental education throughout Japan. With the strong leadership of Dr. Kenzo Tanaka, president of Fukuoka Dental College, eight allied schools have joined this challenging project to integrate oral medicine with their programs. These schools include Fukuoka Dental College, Kyushu Dental College, Health Science University of Hokkaido, Iwate Medical University, Kanagawa Dental College, Tsurumi University, Fukuoka University and Showa University. This project started in 2008 under the aid of the Ministry of Education, Culture, Sports, Science and Technology. Oral medicine covers the prevention and treatment of oral diseases related to systemic diseases, as well as the performance of oral care to prevent and to alleviate general diseases of handicapped or hospitalized patients.

To date, we have installed a television lecturing system in each of the eight schools and are using them for curriculum planning. The preparation of lectures between the schools is also under way. Additionally, we plan to conduct an annual oral medicine symposium to highlight the integration of oral medicine and dentistry among the dental and medical societies.



## Interprofessional Education for Freshmen

by Associate Professor Ryuta Kataoka: Dental Medicine Education Unit

Unique to Showa University is its Fujiyoshida Campus, an all-freshman dormitory community located at the base of Mt. Fuji. Generally, four students from our Schools of Medicine, Dentistry, Pharmaceutical Sciences, and Nursing and Rehabilitation Sciences live in each dormitory room. Through student life in the so-called "cross-school learning" environment, students can study and experience the basics of a "team care approach." By doing so, we prepare the groundwork for the development of the students' skills and abilities and their future responsibilities as professionals working in "team care" fields.

What makes Fujiyoshida Campus special is indeed a course on the "Basics of Team Care Approach." This course, including four-school joint PBLs and practical trainings for essential medical communication skills, is designed to

provide students with opportunities to build common ethics, necessary for a patient-centered team approach in all medical fields.

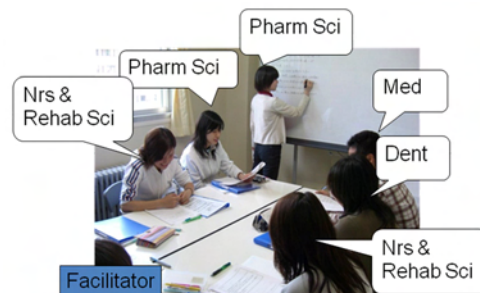
Moreover, in order to not only understand the current situation surrounding medical care and welfare, but also develop motivation and responsibility as a professional and member of a team, small group of students from our four schools have on-site learning experiences at hospital and welfare facilities. On such a group basis, practical training also includes the following:

-- Disability awareness simulation exercises

-- Development of life-saving-related skills for resuscitation (e.g. BLS)

-- Discussions and presentations

Meanwhile, aside from the above interprofessional training, study visits to dental clinics located in Fujiyoshida and the Kofu area are independently carried out by the School of Dentistry to provide our dental students with opportunities to learn more about the work of dentists and to recognize the importance of communication with patients and staff.



## International Exchange Program for Dental Students

by Professor Matsuo Yamamoto: Department of Periodontology

The Showa University School of Dentistry currently has international exchange agreements with eight foreign dental schools; since 2005, 12 students have visited our dental school. During the introduction and observation of some of our dental departments and research laboratories, our student visitors were able to construct clinical designs and plans using their previously acquired knowledge and skills. In addition, their experiences at Showa University made them aware of the similarities and differences between Japan and their own countries.

In our school and hospital, the foreign students were able to see how dental diagnosis and treatment are being carried out with some of our latest technology and systems, such as computer-simulated implant treatment planning CAD/CAM-based prosthodontics, volumetric radiographic imaging of the dental and

maxillofacial anatomy and disorders, and the application of originally developed Cone Beam X-ray CT of the dento-maxillofacial region for orthodontics. In addition, our visiting students were able to see how patient-specific images are used clinically indicating changes in conventional planning and the coming of a new era in dentistry. Showa University Dental

Hospital was also the first in Asia to use the invisalign system (invisible orthodontic treatment) developed by Align Inc. (CA, USA). Our visiting students also showed great interest in other new technologies that they had studied but had never seen, such as extensive treatment of cleft palate patients and the treatment of patients with dysphagia. Showa University Hospital is one of the leading hospitals in Japan in the



clinical field of management of dysphagia.

We are pleased to say that many of our foreign student visitors keep in touch with us after returning to their home countries and even after graduating. We look forward to accepting more foreign dental students into our exchange program in an effort to foster closer relations with our friends abroad and to help contribute to health worldwide.

## The Department of Oral Rehabilitation and the Showa Swallowing Maneuver

by Professor Koji Takahashi: Department of Oral Rehabilitation

The Department of Oral Rehabilitation was established in 2004 to make a significant contribution to the rehabilitation and treatment of patients with oral dysfunctions including dysphagia, speech disorders and obstructive sleep apnea syndrome.

To aid in the treatment of our patients, new clinical strategies have been developed, one of which is the Showa swallowing maneuver.

The Showa swallowing maneuver was designed to improve airway protection, laryngeal elevation, and superior-posterior movement of the tongue base during swallowing. This swallowing

technique combines three swallow maneuvers (Table 1).

The effectiveness of the Showa swallow maneuver was quantitatively evaluated using computed tomography (Figure 1), videofluorography, and surface electromyography (Figure 2).

Considerable effort has been made to extend our knowledge and clinical experience to improve our understanding of oral dysfunctions as stated above.

By continuing to conduct clinical investigations, we hope to improve our diagnostic and treatment options for patients with oral dysfunctions.

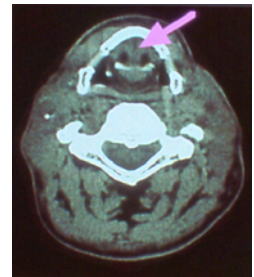


Figure 1. Horizontal CT image at the level of the vocal folds. Orifice was completely closed during the Showa swallow maneuver.

Table 1. Swallowing maneuvers and their aims

	Airway protection		Superior-posterior motion of the tongue base	Laryngeal elevation
	True vocal fold closure	False vocal fold closure		
Supraglottic swallow	✓			
Super-supraglottic swallow	✓	✓		
Effortful swallow			✓	
Mendelsohn maneuver				✓
Showa swallow maneuver	✓	✓	✓	✓

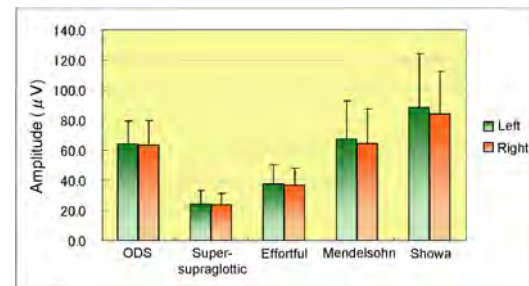


Figure 2. Averaged peak amplitudes for each swallow maneuver. Amplitudes were the highest at the Showa swallow maneuver.

## Research Collaboration with Professor William Banks of Saint Louis University

by Assistant Professor Naoko Nonaka: Department of Oral Anatomy and Developmental Biology



From 2001 to 2003 I had the opportunity to study abroad in Professor William A. Banks' laboratory at Saint Louis

University and Veterans Affairs Medical Center. Since then, I revisit Professor Banks' laboratory a couple of times a year as an adjunct assistant professor to continue our research. This past summer we started a new research project to develop a method to deliver several types of neuropeptides to the brain via the nasal passages. Neuropeptides have been suggested as therapeutics for various brain diseases such as Alzheimer's disease, alcoholism, stroke,

multiple sclerosis, and neuroAIDS. During this recent visit we were able to obtain several interesting data that we expect will help us reach our expected goal.

At two international symposiums in Japan, one held in July (8th Cerebral Vascular Biology International Conference at Sendai) and the other in October (9th International Symposium on VIP, PACAP and Related Peptides at Kagoshima), I presented our research concerning the delivery of neuropeptides to the brain via intranasal administration. After the presentation, discussions with other Japanese and foreign researchers as well as with collaborators from Professor Banks' lab motivated me to work even harder. During the final day of the symposium in Sendai, we had a

small party where we talked about the latest and future research in this field while eating delicious Japanese food and drinking sake.

Since central nervous system diseases cause several types of oral diseases and dysfunctions, we will continue to strive to develop further research to combat these illnesses.



## Research and Educational Activities

### The Department of Prosthodontics, School of Dentistry

by Professor Kazumi Baba

The Department of Prosthodontics is one of eight clinical departments in the School of Dentistry at Showa University. In 2004 the Departments of Fixed Prosthodontics and Removable Prosthodontics merged into one department making us the only prosthodontic department in Japan that covers all three major prosthodontic fields: crowns and bridges (Cr-Br), removable partial dentures (RPD), and complete dentures (CD). This situation allows us to conduct comprehensive clinical and research activity. At present our department has 10 graduate students and 29 full-time staff, experts in CR-BR, RPD, CD, implant dentistry and temporomandibular disorders (TMD).

The goal of our department is to provide patients with the best possible advanced prosthodontic treatment by enabling maximum patient satisfaction with minimum intervention. For this purpose we are conducting a variety of studies relevant to prosthodontic



treatment. Some of the research topics include clinical evaluations of treatment outcomes, as well as basic research in regenerative medicine carried out in cooperation with several institutions such as USC, UCLA, Minnesota University, Tokyo University, Tokyo Medical and Dental University and Tokyo Institute of Technology.

Regarding education, our pre-clinical curriculum consists of lectures and laboratory practice during the 3rd and 4th years followed by a clinical

clerkship program where students see patients in the prosthodontic clinic. A unique point of our curriculum is that the laboratory practice focuses on clinical decision making and clinical skills rather than the techniques used in the fabrication of dentures. Use of a specially designed phantom model and a web-based virtual patient has greatly improved the effectiveness of the clinical clerkship program.

## Introduction of Foreign Research Fellow

### My Studies at Showa University School of Dentistry from September 2008-August 2009 by Dr. Kim Gyu-Tae (KyungHee University Dental Hospital, Seoul, Korea)



In September 2008 I joined a visiting program based on a treaty between Showa University, Tokyo and Kyung-Hee University, Seoul. During my stay at Showa University I studied in the Department of Radiology, School of Dentistry under the supervision of Professor Tomohiro Okano. I attended the outpatient radiology clinic to study the various kinds of radiographic images

and their interpretations. This experience was very helpful for me to understand the diagnostic process of patients who visit Showa University Dental Hospital.

I learned that cone-beam CT (CBCT) has become indispensable in dentistry. The Radiology Department of the Showa Dental Hospital has two CBCTs; I studied image acquisition and manipulation using several kinds of software and was made aware of the feasibility of CBCT for the future. In addition, I used conventional computed tomography to measure the HU units surrounding the alveolar

bone from subjects of all age groups in an effort to determine the dependency of the HU values on age and gender. I plan to continue this study after my return to Kyung-Hee University.

I also had the opportunity to attend a fluoroscopic study of swallowing to analyze dysphasia patients under the guidance of Professor Koji Takahashi of the Department of Oral Rehabilitation. Furthermore, I was fortunate to have the opportunity to visit Okayama University to learn about functional MRI and its usefulness for the analysis of dysphasia. This method of analysis could contribute to Korean society where the elderly population has been rapidly increasing.

I would like to thank Professor Tomohiro Okano, the Director of Showa University Dental Hospital, for giving me the opportunity to study in Japan. In addition, I would like to extend my appreciation to Professor Takashi Miyazaki, the Dean of Showa University School of Dentistry. Finally, I wish to thank all the doctors, technicians, and office staff of the radiology department who helped me from the first day until the last. I will never forget the days I spent with you.

## International Exchange Center

by Chieko Kawaguchi: International Exchange Center

In the modern era of expanding globalization and as an institution of higher learning in the medical professions, Showa University is actively promoting international exchanges worldwide and our International Exchange Center is assisting these activities.

At the present time, Showa University has four sister schools and 15 schools with whom we have concluded academic agreements. The latest includes an agreement established with Philippine University in July 2009. In addition to participating in exchanges with these foreign schools, the International Exchange Center assists the staff of the medical, dental, pharmacy and nursing faculties of Showa University when they participate in international academic conferences and research.

The number of above-mentioned participants from April 2008 to March 2009 was as follows: foreign students from other universities, hospitals or institutions to Showa University (31), overseas travel by faculty and officials

at Showa (610), medical/dental doctors from Showa who studied abroad (10), and outbound Showa students for clinical training or studies (50).

At Showa University many staff and students collaborate with our foreign students in a variety of ways. For example, every year we hold a bazaar for foreign students as a part of our autumn school festival. This bazaar is planned and held by the Co-op with donations from the faculty and students' families. The funds raised by the bazaar are used for medical expenses of foreign students and for the international exchange parties held at the end of the year. At our recent party, our Chinese faculty treated us to delicious Chinese foods.



One of the Exchange Center's activities is a 1-day tour of Tokyo to introduce our foreign guests to Japanese life and culture. (See photo)

Our center has the following two missions: One is to provide our foreign doctors and students with the best living and study circumstances at Showa University in an effort to make their stay a fruitful and memorable one; the other objective is to help in any way possible the exchange doctors and students reach their study and research goals through our international exchanges. We view our exchange programs as a big tree branching out to provide opportunities and reach goals.

Country	Number
United States	3
Australia	1
China	1
Korea	1
Mongolia	1
India	1

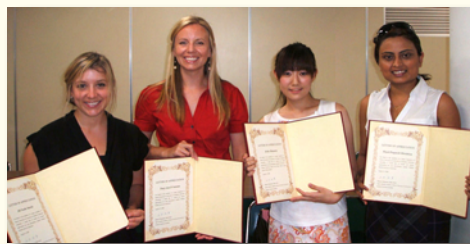
Number of foreign scholars at the School of Dentistry in 2009.

## Overseas Training of Students

### Our Experience at Showa University By Jill Tetrick, Tracy D'Antonio, and Payal Dholakiya Student Representatives from the University of Southern California School of Dentistry in Los Angeles

Before embarking on our final year of dental school at USC, we were given the opportunity to visit Showa University School of Dentistry. After a long day of travel, we were immediately greeted by what we came to know as Japanese hospitality. The apartments that were provided for us were wonderful and gave us a home away from home.

During our two-week stay at Showa, we were given a glimpse of the life of a Japanese dental student. We visited the university and were introduced to many professors and the research projects that are currently underway. We could see the value of the research being done at Showa and how it will affect the future of dentistry as a profession. We were also given a lesson in head and neck anatomy, where we were very impressed by the precise dissections. In addition, we visited various departments at the dental hospital. There we compared and contrasted the different materials and methods used in the U.S. and Japan with many professors and students. We were given the opportunity to observe how each of the clinics is run and to see the technology that is used on a daily basis. One

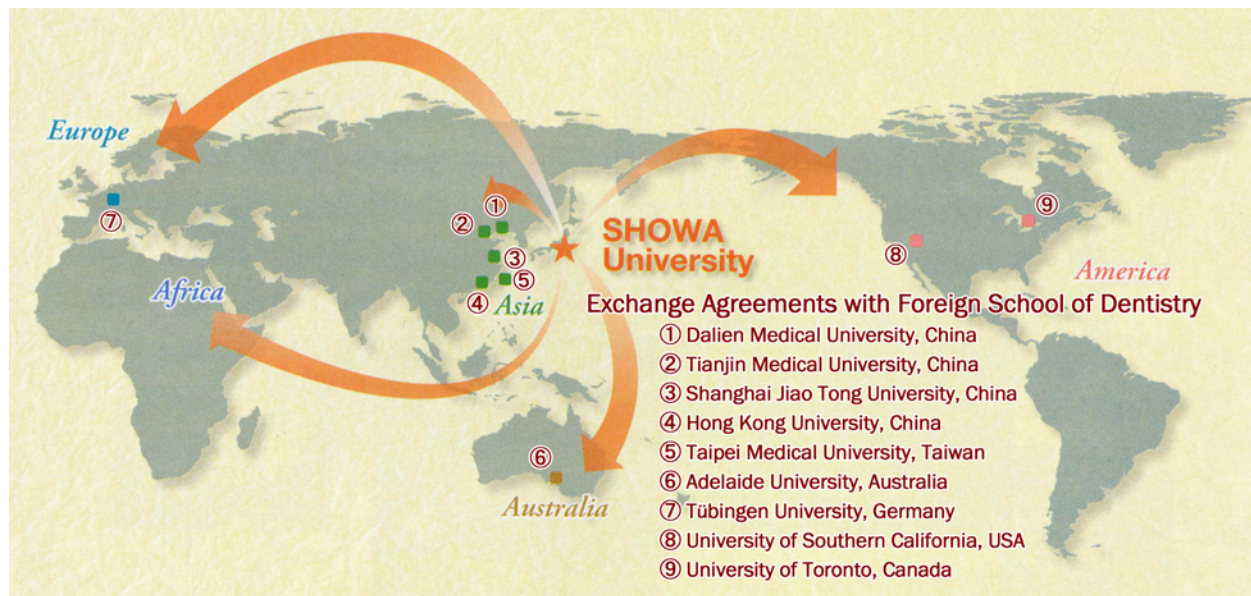


marked difference that we noticed and thought was very interesting was that in Japan, dentists are able to treat patients with dysphagia. In the U.S. dysphagia patients are generally seen by speech pathologists and ear, nose and throat physicians.

Beyond the dental aspect of our trip, we were overwhelmed with kindness and generosity by all of our many hosts. Whether it be taking us to lunch, dinner or around the city, the students and faculty introduced us to Japanese culture as we would have not been able to experience on our own. One highlight of our cultural exchange was the international student presentations, where we shared common experiences in dental outreach projects. We are very thankful for our time at showa and we leave with a better appreciation for dentistry on a global scale. We hope to see some students from Showa University at USC next spring and look forward to sharing our own culture with them.

## Exchange Agreements with Foreign School of Dentistry

The fourth- and sixth-year students in our school participate in training courses at the following universities:



### Ph.D. Program: Application Information

Showa University's Graduate School of Dentistry Ph.D. course is now accepting applications from international students.

The course that will start in April 2010 offers basic and clinical dental research.

For further information, please visit our English Web site: <http://www.showa-u.ac.jp/>

## Grant-in-Aid for Scientific Research (2009)

by Professor Ryutaro Kamijo: Department of Biochemistry

The Ministry of Education, Culture, Sports, Science and Technology- Japan, and Grant-in-Aid for Scientific Research from the Japan Society for the Promotion of Sciences has provided Showa University with several research grants (indicated in the Table), in addition to High-Tech Research Projects. Our High-Tech Research Projects have proven successful by obtaining highly evaluated results under titles such as "Advanced research to elucidate the pathogenic mechanisms and recovery of stomatognathic function disorders," a project that began in 2005; and another 3-year project that started in 2008, "Innovative research of oral cancer; a study based on molecular evidence to elucidate the pathogenic mechanisms and to improve the Quality of Life

through comprehensive rehabilitation." These grants are used for research and/or educational purposes. Compared with 2008, we succeeded in obtaining two new Grants-in-Aid for Exploratory Research and five more Grants-in-Aid for Young Scientists in 2009.

Fields	New(2009)	Cont.(2008~)	Total
Grant-in- Aid for Exploratory Research	2	—	2
Grant-in- Aid for Scientific Research (B)	1	3	4
Grant-in- Aid for Scientific Research (C)	14	21	35
Grant-in- Aid for Young Scientists (B)	20	15	35
Grant-in- Aid for Young Scientists (Start-up)	3	4	7

Number of Grants-in-Aid for Scientific Research in 2009

## Dental Medicine Research Welcomes Scientific Articles and Presentations

by Executive Director: Masanori Nakamura

*The Journal of Dental Medicine Research (DMR) is a peer-reviewed scientific journal of Showa University Dental Society dedicated to the dissemination of new knowledge and information of all sciences relevant to dentistry and to the health and disease of the oral cavity and associated structures. In addition to original basic and clinical research, the journal accepts reports of technical advances in original and new research and clinical tools and techniques. Showa University Dental Society welcomes article contributions from domestic and foreign researchers to our DMR journal, as well as participation in our meetings, which are held twice a year (July and December).*



Cover Photograph: "Tengu", Yakuoin Iizuna Gongendou, Takao-san, Hachioji-city, JAPAN. (<http://www.photolibary.jp/>)

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