

Newsletter

School of Dentistry
Showa University

January 2011
Volume 4



Table of Contents

- 1... Education of oral physicians with patient oriented team-based medical training*
- 1... The Marriage of Moodle and PBL*
- 2... iOSCA*
- 3... Forum with Nobel Laureates at Showa University*
- 3... The Asian Pacific Dental Student Association (APDSA)*
- 4... Use of a Robot Patient in Dental Education*
- 4... Introduction of Foreign Research Fellow*
- 5... Exchange Students from University of Adelaide*
- 5... Exchange Agreements with Foreign School of Dentistry*
- 6... International Exchange Center*
- 6... Scientific Grants award (2010)*
- 7... Showa University Dental Society*

Education of oral physicians with patient oriented team-based medical training

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



Showa University has 4 schools, including the School of Medicine, School of Dentistry, School of Pharmacy, and School of Nursing

and Rehabilitations. We have 8 affiliated hospitals which are available for the education of students. All first-year students from the 4 schools must stay in the dormitories at the Fujiyosida campus. We have an almost 50-year history of dormitory based, first-year education.

The overall goal of education at Showa University is to educate professional medical service staff, including medical doctors, dentists, pharmacists, nurses, physical therapists and occupational therapists, cooperating across the boundaries of each school. In simple terms, our overarching goal is to promote

a team approach to medical care.

We implemented our challenging new program at Showa University in 2006, the first such program at a medical-oriented university anywhere in the world. We implemented a common unit in all the schools to develop the team medical service program with a focus on PBL units during the first-, third-, and fourth-year course, and hospital ward training during the fifth year. We successfully carried out a large-scale trial of the team approach ward training program in July, October, and December of 2010. 23 units of the wards from 6 hospitals were used in the trial. Each group consisted of 5 to 7 students from the 4 schools. Students stayed in the same ward for a week engaging in the clinical internships.

The reaction of the dental students who first undertook this program was extremely positive. I believe the team

approach to ward practice is a promising avenue for providing dental education of a high quality and producing highly trained dentists who are able to be oral physicians. This year, we will prepare 110 teams from a total of 600 students using all 8 affiliated hospitals, including our dental hospital. Our graduates are expected to continue to learn oral medicine and contribute to the longevity and health of patient by saving lives, and improving patients' quality of life.



The Marriage of Moodle and PBL:

Two USC School of Dentistry Professors Develop New On-line Educational Models at Showa University in 2010

by Professor Kazuyoshi Baba: Department of Prosthodontics

Dr. Roseann Mulligan and Dr. Glenn Clark visited Showa University School of Dentistry 2010 during their 6 month sabbatical from the Herman Ostrow School of Dentistry at the University of Southern California. With the generous support and blessings of Dean Miyazaki, the two USC faculty were hosted by Dr. Kazuyoshi Baba, Professor of Prosthodontics at Showa. One of their activities at the School of Dentistry was to pilot a new series of lectures (Clark: Oral Medicine; Mulligan: Special Patient Care) delivered with the help of web-based technology to interested faculty and students. All lectures were recorded and placed on Moodle, an open source course management system website. Faculty and students who registered for the lectures could then access the site 24/7 to view streaming videos of these lectures at their convenience,

took quizzed over the material covered and view their overall performance in the course. In addition, Professors Clark and Mulligan presented small (7-8 students) weekly PBL seminars that also demonstrated a web-based learning



management system approach to PBL wherein all case materials including the phased narrative and supporting documentation (e.g. images, photos, etc.) were made available on the Moodle website and opened in sequence as the

case evolved. Students also posted to the website the learning needs (LNs). They researched and were able to access the facts, ideas and LNs of the entire group, as well as individual weekly assignments. Writing and creating new teaching materials in their respective fields and delivering these materials using new web-based technologies (e.g. video conferencing and desktop recording streaming video systems such as ViVu®) and web-based learning management systems (e.g. Moodle.com) were the primary goals for the sabbaticals of Drs. Clark and Mulligan. Ultimately they hope to utilize the materials and systems they created in two new on-line Master's degree programs at USC in Oral Medicine/Orofacial Pain and Geriatric Dentistry/ Special Patient Care for enrollment by students from around the world.

iOSCA (integrated Objective Structured Clinical Assessment)

by Tokuji Hasegawa and Matsuo Yamamoto: Co-chair and Chair of the iOSCA committee

Showa University School of Dentistry has introduced a new Objective Structured Clinical Examination (OSCE) to the 5th year students as an achievement test of their clinical practice training in the Dental Hospital. The OSCE was designed to assess "Competences for the Graduating Student of Showa University School of Dentistry", in the six following domains: (1) Professionalism, (2) Communication and Interdisciplinary Team Approach in Medical Care, (3) Acquisition of Knowledge of the Scientific Basis of Dentistry and Medicine and its Application to Clinical Practice (life-long learning), (4) Medical Interview and Examination, (5) Diagnosis and Treatment Planning, and (6) Health Promotion. The purpose of the new OSCE was to provide the feedback of the clinical knowledge, skill and attitude relating with the competency of the School of Dentistry to the students.

The OSCE was structured with four Blocks: Block A, B, C and D.

Block A covered basic clinical examination skills, including an oral examination and examination of the temporo-mandibular joints and head and neck regions. Since students had to perform the clinical examination on colleague's oral, head and neck regions,

not only correct examination procedures [competency(4)] but also medical safety, clinical cleanliness [competency(1)], and communication manner [competency(2)] were assessed in the Block A.

Block B covered a medical interview of a patient with an underlying disease or disorder, for example diabetes, hypertension, asthma or cerebral infarction. Prior to the medical interview with a standardized patient [competency(2,4)], student had an opportunity to generate a question list about the patient's underlying disease [competency(3)].

Block C covered the clinical diagnosis and the development of a comprehensive treatment plan, based on various materials including intra-oral photographs, radiographs and other data [competency(3,5)].

Block D covered basic clinical skills during a simulated clinical situation: a cavity preparation on a patient robot, a root canal treatment with rubber dam isolation, and a tooth extraction with local anaesthesia. Prior to the correct treatment procedures [competency(5)], understanding the patient's medical record [competency(3,4)] were also assessed in the Block D.

From March 1–4th, 2010, the 88

students were divided in 4 groups.

Each group of 22 students completed a different block each day. The program of the OSCE was assessed by an overseas third-party evaluation team: Professor Grant Townsend from the University of Adelaide, Professor Lakshman Samaranayake and Associate Professor Michael Botelho, both from the University of Hong Kong. They provided a lot of important feedback about the OSCE program including the curriculum, the assessment methods, the students, the facilities and other support, the role of the academic staff and other relevant matters. They also advised us to use the terms OSCA (Objective Structured Clinical Assessment) rather than OSCE to differentiate this assessment from the OSCE that forms part of the National Common Achievement Test held at the end of the 4th year and from other OSCEs that may be held within the School. Furthermore, it was also suggested that the new OSCA could be referred to as an Integrated OSCA (iOSCA), as it drew together material from various aspects of the curriculum.

Our committee will continue to concentrate on the iOSCA in considering assessment approaches with regard to their validity and reliability.



Ph.D. Program: Application Information

Showa University Graduate School of Dentistry offers interdisciplinary training programs in the basic and clinical dental sciences, leading to a Ph.D. degree. Our Ph.D. program, for enrollment starting in September 2011 or April 2012, accepts applications from international exchange students. For further information, please contact Showa University International Exchange Center (e-mail: int-exc@ofc.showa-u.ac.jp).

Forum with Nobel Laureates at Showa University

by Professor Tomio Inoue: Department of Oral Physiology

Forums with Nobel Prize laureates are organized annually by The Yomiuri Shimbun. The Tokyo session of this year's forum featured Dr. Ryoji Noyori, winner of Nobel Prize in Chemistry in 2001, and Dr. Harald zur Hausen, winner of the Nobel Prize in Physiology or Medicine in 2008. This Forum was held at Kamijo Auditorium in Showa University on September 23rd, 2010 under the theme, "Messages for Coming Generations." Kamijo Hall was filled to capacity and the video image of the session was also broadcasted live at a classroom on the 6th floor in Building 4. Mr. Shoichi Oikawa, president of The Yomiuri Shimbun, delivered the opening address and then Dr. Katsuji Oguchi, chief director of Showa University, delivered an address of welcome. Dr. Noyori and Dr. zur Hausen gave

keynote speeches, titled "What Can Science Do for Human Beings?" Dr. Noyori talked about the right-handed and left-handed forms in "The World of Molecules", which is related to his work that was selected for the Nobel prize. He emphasized that science and technology are fundamentally important for human society. Dr. zur Hausen talked about how human papilloma viruses can cause cervical cancer, of which his discovery brought him the Nobel prize. He also referred to recent topics in cancer research, and encouraged students and young researchers to challenge unresolved enigmas.

Subsequently, Dr. Takashi Katagiri, president of Showa University, and Mr. Kiyohiko Nakane, director and senior managing executive officer of Sumitomo Chemical Co., joined the two Nobel

Prize laureates in a panel discussion titled "Passion key to scientific progress" that was held under the coordination of Hidekazu Tanaka, The Yomiuri Shimbun's health and medical news editor. President Katagiri introduced our unique education that first-year students in our four schools of Medicine, Dentistry, Pharmaceutical Sciences, and Nursing & Rehabilitation Sciences live together in dormitories at Fujiyoshida campus and learn the basics of team care approach. Members of the audience, including our students, also asked questions to the Nobel Prize laureates. The audience was impressed by the laureates because both of them had never felt distressed, but rather excited, in their careers as scientists and thought that persistence is one of the most important characteristics for scientifically minded persons.



The Asian Pacific Dental Student Association (APDSA)

Alissa Kosugi (5th-year student)

The Asian Pacific Dental Student Association (APDSA) was established in 1968 and has been held every summer in different countries for the past 42 years. The first congress was held in Tokyo. Participants come from many Asia Pacific countries, such as Australia, Indonesia, Hong Kong, Malaysia, Philippine, Korea, Taiwan, Thailand and Japan. In this summer, APDSA was again held in Tokyo from August 16 to 21, 2010. Thirty-four Asian students came to Showa university dental hospital on August 19. Other students visited Tokyo dental college, Nihon dental college, and Nihon university school of dentistry at Matudo. It was difficult to make a plan worth seeing and doing for the students, but we made three programs. One program consisted of lectures from Professor Tomohiro Okano (Current dental health service and dental education in Japan), Dr. Rika Ayano (Oral

care and aspiration pneumonia), Dr. Reiko Yorozya (Evolution of orthodontics), and Dr. Fuminori Iwasa (Computer-based planning in implant therapy). In the second program, student toured the departments. We decided the order to visit each department and made small groups in order to make the program go smoothly. In the final program, the students were able to see and touch dental chairs and dental models, especially at the clinic of prosthodontics. The Asian students seemed to be interested in everything, and



it was an event that was close to many of our hearts. The events fostered friendships among dental students and colleagues from participating countries. We were able to introduce our lively hospital and felt a sense of pride when the overseas dental students smiled and thanked us with sincere appreciation. I would also like to express my wholehearted gratitude and appreciation to all the kind and patient doctors who guided us around and helped contribute to the success of this hospital visit.

Use of a Robot Patient in Dental Education

The Department of Orthodontics, School of Dentistry

by Professor Koutarou Maki, Takeshi Tanzawa

With the increasing social awareness of safety in medical practice, improving clinical skills is becoming more important, especially for recently graduated dentists

Traditionally, mannequins have been used for dental clinical training, but a mannequin is quite different from a real patient because they have no autonomous movement or conversational ability. This indicates that pre-clinical simulation education is inadequate.

Therefore, we have developed a robot patient jointly with Tmusk Co. Ltd. that can reproduce an authentic clinical situation for dental clinical training.

The development of the robot patient project started about 10 years ago. It has since been improved such that it is now continuously being used by many trainees.

The robot patient, designed as a full-body model with a height of 157 cm, has eight degrees of freedom in the head (eyelids, eyeballs, jaw, tongue, and neck), and the ability to perform various autonomous movements such as "shaking neck", "coughing", "tongue thrusting", and "mouth fatigue". Moreover, saliva secretion and conversation with the trainee can be reproduced.

At this time, we have introduced the robot patient into an objective structured clinical examination (OSCE) as an achievement test after clinical training targeted at fifth grade students in our dental school. We evaluated their skills in cavity preparation, while considering the safety of the treatment. Practical application of the robot patient in dental clinical education was evaluated through feedback from the



fifth grade students, which showed the effectiveness of the robot patient in the dental field. After the practical experience, many of the students recognized the robot patient as being more useful than traditional clinical education. Moreover, approximately 90% of the students considered the introduction of the robot into dental education necessary.

We continue to improve the robot patient to approach even more to a real human being.

Introduction of Foreign Research Fellow

A unique experience in Showa University

by Dr. Jaideep Sur (D A P memorial R.V. Dental College, Bangalore, India)



I am Dr. Jaideep Sur, appointed as a 'Foreign Research Scholar' at Showa University School of Dentistry, Tokyo from April 2009 to March 2010. I completed graduation (Bachelor of Dental Surgery) and post-graduation (Master of Dental

Surgery) in dentistry with major in Oral Medicine and Radiology from D A P memorial R.V. Dental College, Bangalore, India.

I am fortunate to work in Department of Oral Radiology under supervision of Professor Tomohiro Okano for the duration of 1-year. My major clinical interest was to learn about dental cone-beam CT and its applications. My major research fields were on Radiation dose and applications of Diagnostic Reference Level (DRL) in dental radiology. I had also performed clinical researches to determine the radiopacity of restorative resins through linear attenuation coefficients and the durability of photostimulable phosphors (PSP) imaging plates. I have completed publications regarding the image quality and reducing radiation dose on multi-detector CT and cone-beam CT.

I am fortunate to be co-author in 4 poster presentations at various International Radiological Meetings in year 2009-2010. During my research program, I have received maximum cooperation from the staff of Oral Radiology, thereby helping me to complete my valuable projects. This was a great opportunity for me in the field of clinical research and academics, as recent advances in imaging modalities like cone-beam CT, CT, MRI are the future of Oral Maxillofacial Radiology, especially in India.

I thank Professor Miyazaki Takashi, Dean, Showa University School of Dentistry and other senior management staff of Showa University for giving me an opportunity to work in this esteemed University as a Foreign Research Scholar. I also thank staff of International Centre of Showa University for their concern and help, thereby making my stay a comfortable and memorable one. I would like to express my sincere gratitude to Professor Nagesh KS (Dean, D A P memorial R.V. Dental College, India) and Professor Okano T, who made this research program possible between India and Japan in the field of Oral Radiology. To summarize, my living, working and travelling in Japan was an amazing experience, which I cherish forever.

Exchange Students from University of Adelaide

by Associate Professor Ryuta Kataoka: Dental Medicine Education Unit

The Showa University School of Dentistry currently has international exchange agreements with ten foreign dental schools; since 2005, 16 students have visited our dental school. Our students were impressed by students' clinical skills when they visited other schools. Incoming exchange students admired at our school's education in the field of patient-centered medical team care, basic science and clinical training in the laboratory.

In July 2010, we hosted four 5th year students from the University of Adelaide. They studied at Showa University for two weeks. During that time, they attended a short lecture about Japanese Dental Education and they observed various clinical activities at Showa University Dental Hospital.

Yinan Lu, one of the exchange students from the University of Adelaide, had to say this regarding her stay at Showa University:

"Showa University is a unique, well established University with a strong focus on patient-centered health care. I was really surprised all the 4th year dental students have several rotations to practice how to raise a periodontal



flap and suturing on their own pig's head. The facilities provided to students are also very advanced with computer screen available for each student in the laboratory. In Showa University, during 1st year, all students live in a dormitory. This allows students to develop a better skill for team work which is very important

in their future career. Each of the 5th year dental students will get a chance to present a case report that he/she have seen in the hospital with students from other schools to develop a treatment plan and will be questioned by other doctors and Professors during the seminar. It is a really good teaching strategy to make dental students to understand that oral health is an integral part of total health and that oral health care is an integral part of comprehensive health care. I am glad to visit all the different departments of dentistry in Showa University, which allows me to broaden my insight into dentistry. This also makes me realize the difference between the two universities. I am looking forward to share my wonderful exchange experience, including all the good aspects of dentistry that our exchange group learnt from Showa University, with the rest of my colleagues in Australia."

Exchange Agreements with Foreign School of Dentistry



International Exchange Center

by *Chieko Kawaguchi: International Exchange Center*

As the International Exchange Center of Showa University, we provide support for both foreign doctors & students from abroad who are visiting Showa University as well as our own doctors & students who are studying abroad. We look forward to continued growth as the number of international exchanges increase.

Along with the Health Science University of Mongolia (which reached an agreement with us in March 2010), Showa University currently has 4 sister schools & 18 schools with which we share an academic agreement. It is our policy to have good sister schools, to exchange faculties & students with each other, and to exchange education, research & culture mutually.

The following is data about the faculty and students at Showa University (from April 1st 2009 to March 31st 2010): foreign students or researchers to Showa (38), overseas travel by faculty and officials at Showa (556), doctors in Showa who studied abroad (34), outbound Showa students for clinical training or studies. (60).

Regarding foreign students, our main support for them is as follows:

- 1) Arrangements of their accommodations and scholarships.
- 2) Various kinds of support for startup of their Japanese life, such as visa application or alien registration.
- 3) Assisting their clinical rotation by working together with our doctors in charge of foreign students.
- 4) Organizing international exchange parties.
- 5) Offering events such as 1 day tours of Tokyo to introduce them to Japanese culture.

We are trying to design this center as a home base for doctors who are working worldwide, and be able to offer them our network in the future. In the meantime, we would like to be the place that doctors go to when they are preparing for the international stage. We are encouraged when foreign students tell us that they feel Showa University is their "home away from home"

Country	Number
China	6
United States	2
Australia	2
India	2
New Zealand	1

Number of foreign scholars at the School of Dentistry in 2010.



Scientific Grants awarded to Showa University School of Dentistry in FY2010

by *Professor Ryutaro Kamijo: Department of Biochemistry*

The Ministry of Education, Culture, Sports, Science and Technology in Japan (MEXT) has awarded a five-year, 175 million yen grant to Showa University Graduate School of Dentistry to establish a multi-disciplinary research center for anti-aging. This project will be done in collaboration with researchers at the National Center for Geriatrics and Gerontology, The University of Tokyo Faculty of Engineering, and Showa University School of Medicine. The principal investigator, Dr. Takashi Miyazaki, Dean of School of Dentistry, has said that our goal is to set up a worldwide multi-disciplinary network of scientists and clinicians who have been carrying out advanced researches of anti-

aging. Another MEXT-funded, 5-year project by Dr. Tetsuhiko Tachikawa, Professor of Oral Pathology, entitled "Innovative research of oral cancer based on molecular evidence—from elucidation of the pathogenic mechanisms to improvement of quality of life through comprehensive rehabilitation" is in the end of the third year of its project.

MEXT and the Japan Society for Promotion of Science have also awarded Grants-in-Aid for Scientific Research to researchers and research groups in Showa University School of Dentistry. The summary of Grants-in-Aid for Scientific Research they received in FY2010 is indicated below.

Categories	Number of Grants
Grant-in-Aid for Scientific Research (B)	4
Grant-in-Aid for Scientific Research (C)	41
Grant-in-Aid for Challenging Exploratory Research	2
Grant-in-Aid for Young Scientist (B)	37
Grant-in-Aid for Research Activity Start-up	11

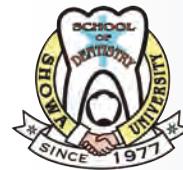
Summary of Grants-in-Aid for Scientific Research that School of Dentistry awarded in FY2010

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

by Executive Director: Masanori Nakamura

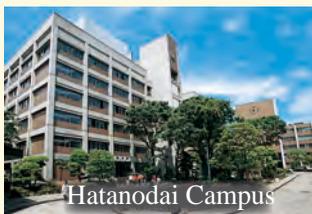
Showa University Dental Society organizes a meeting of researchers twice a year (in July and December). Showa University Dental Society has also renewed publication of the journal of Dental Medicine Research (DMR) from volume 28. DMR is a peer-reviewed scientific journal dedicated to the dissemination of new knowledge and information on all sciences relevant to dentistry as well as the oral cavity and associated structures in health and disease. 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 about clinical tools and techniques.

Showa University Dental Society welcomes contributions of articles to DMR and also participation in our meeting from domestic and foreign researchers related to this scientific field.



Cover Photograph: "Robot Patient", The developer is Department of Orthodontics, Showa University.

Inquiries



Hatanodai Campus

SCHOOL OF DENTISTRY, SHOWA UNIVERSITY

1-5-8 Hatanodai, Shinagawa-ku, Tokyo 142-8555, JAPAN

Telephone: +81-(3)-3784-8000

Websites:

Showa University <http://www.showa-u.ac.jp/>

School of Dentistry <http://www10.showa-u.ac.jp/~dent/>



Dental Hospital (Senzoku Campus)

Editorial Board



Dean, School of Dentistry:

Takashi Miyazaki Professor, D.D.S., Ph.D.

Department of Oral Biomaterials & Technology



Michael W. Myers Ph.D.

English Language Center



Yukiko Matsuda D.D.S., Ph.D.

Department of Oral Radiology



Nobuhiro Sakai D.D.S., Ph.D.

Department of Pharmacology

Chief Editor:

Tomio Inoue Professor, D.D.S., Ph.D.

Department of Physiology



Yasuhiro Hotta D.D.S., Ph.D.

Department of Oral Biomaterials & Technology



Naoko Nonaka D.D.S., Ph.D.

Department of Oral Anatomy & Developmental Biology



Takashi Takiguchi D.D.S., Ph.D.

Department of Periodontology

