

# TMDU OVERVIEW 2009

TOKYO MEDICAL AND DENTAL UNIVERSITY

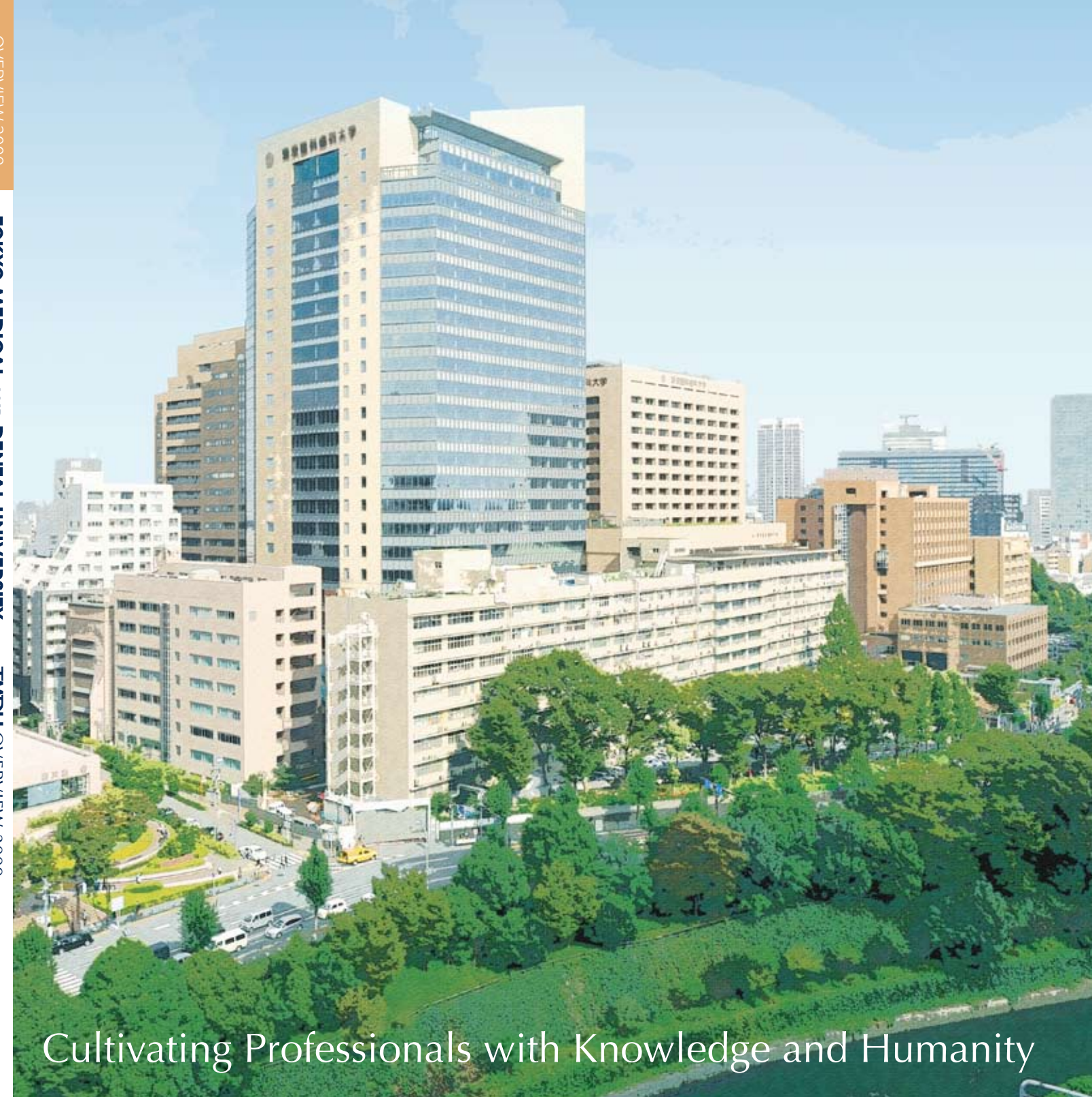


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OVERVIEW 2009

TOKYO MEDICAL AND DENTAL UNIVERSITY

TMDU OVERVIEW 2009



Cultivating Professionals with Knowledge and Humanity

# TMDU

## OVERVIEW 2009

TOKYO MEDICAL AND DENTAL UNIVERSITY



# Tokyo Medical and Dental University

## Educational Philosophies

- To provide students with a broad education and a rich sensibility
- To educate creative people capable of diagnosing and solving problems independently
- To train medical professionals with a rich international quality

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# Message from the President

## Toward Educating Internationally Active Members of Society

Tokyo Medical and Dental University is unique among medical and dental universities in Japan in that we have three divisions dedicated to graduate education and research: Medical and Dental Sciences, Health Care Sciences, the Biomedical Sciences Education Division, and the Biomedical Sciences Research Division. TMDU comprises four faculties (Medicine, Dentistry, Health Care Sciences and Oral Health Care Sciences), an undergraduate College of Liberal Arts and Sciences, two research institutes (the Institute of Biomaterials and Bioengineering and the Medical Research Institute), a university hospital attached to the Faculty of Medicine, a university hospital attached to the Faculty of Dentistry, and a dental technologist school.

At TMDU we strive to produce scientists who expend every possible effort in seeking the truth, and who have the courage and ability to explore new areas, the tolerance and humility to respect diversity and accept new ideas, and the intellectual curiosity born of a broad education. These qualities are necessary for successfully engaging in clinical practice or research, and, indeed, are required for the future of mankind. Meeting the challenging standards expected of a TMDU student will lead you to a satisfying and fulfilling scientific career, one that will completely reward the hard work you will invest in your studies.

Our university aims not only to train you as a medical or dental doctor or other medical professional who can meet the critical needs of society, but to also enable you to become a researcher who can take a leadership role at the forefront of our increasingly internationalized world. At every opportunity we inculcate students with the understanding that the university is not a place to study, but is rather a place where one can learn how to study and how to think independently.

In pursuit of the goal stated above, TMDU manifests three educational philosophies:

### 1 To provide students with a broad education and a rich sensibility

In the Discourses of Confucius we can find the statement, "A scholar is not a vessel." In this context a "vessel" is a device with a single or specific purpose. In other words, a scholar is not merely a specialist who has been trained

for one purpose. Instead, a scholar is one who has broad knowledge, wide experience, and rich sensibility. Health care providers should not impose artificial limits on themselves.

As a further example, when one of Confucius's disciples asked, "Is there any single word which can be a guide to conduct throughout one's life?" the great thinker responded, "It is perhaps the word 'shu.' Do not impose on others what you do not desire for yourself." Confucius meant that one had to be true to oneself while, at the same time, having the intellectual sympathy to be considerate of other people. The concept of "intellectual sympathy" is very important here, as it means that the sympathy is not merely composed of kindness or pity, but is rather a refined sympathy that is based on a broad education. The ability to provide intellectual sympathy is the mark of a true health care professional.

Certainly, as health care providers, we treat our patients to the utmost of our abilities. Our work, by itself, thus brings some sense of satisfaction. However, the satisfaction we get from our work itself may be nothing more than self-satisfaction. It is not possible for us to fulfill our responsibilities by merely doing our best. We can only experience a real sense of fulfillment when we hear appropriate words of appreciation, such as "Thank you very much," from a patient or a member of a patient's family.

Thus, those who engage in the medical professions should continuously refine their philosophical nature by paying special attention to the concepts of aging and death, subjects which are conventionally explored by philosophers. As emerging trends in medicine such as regenerative treatment and genetic treatment attract the attention of practicing physicians and dentists, the making of ethical decisions is becoming increasingly important.

To prepare our students to make such decisions, we thus offer a broad education in liberal arts with the aim of learning to think critically and the cultivation of a deep insight into human nature.

### 2 To educate creative people capable of diagnosing and solving problems independently

Those in the health care professions must accumulate sufficient knowledge and techniques in order to have the ability to discover and solve problems. Our educational process is thus rigorous, as a well-prepared professional

will always have knowledge and techniques in reserve. In addition, the ideal health care provider will always have health and energy in reserve so that continuous efforts in independent problem discovery and resolution are possible.

The Master said, in the Discourses of Confucius, "If one learns from others but does not think, one will be bewildered. If, on the other hand, one thinks but does not learn from others, one will be in peril." When you pursue academic training, try to learn as many things as possible. Endeavor to thoroughly digest what you have learned, and then make efforts to apply what you have learned to solve problems around you. If you can do all these things, you will be able to understand the spirit of the Discourses. In short, as a person who pursues science, you must build your character to the point where you will be able to identify and solve problems independently.

Regardless of how much knowledge and information you acquire, unless you think about how it can be utilized in your life, that hard-won knowledge and information may turn out to be useless. At the other extreme, if you base your judgment only on cold reasoning, you may become self-righteous and make mistakes due to hubris or narrow-mindedness. The teachings of Confucius are echoed in the critical philosophy of Kant, who said that knowledge can start with experience, but without the use of thoughtful reflection, knowledge may become blind. I thus expect you to appreciate the utility of each subject presented to you in class, to learn to identify problems and ask questions, and to then formulate your own thought process to discover and evaluate solutions to the problems.

### 3 To train medical professionals with a rich international quality

Society expects graduates of our university to take international leadership in clinical work and research. We thus give our students the opportunity to acquire a broad education and the ability to produce work that is bound to Japanese spiritual culture and which has an international outlook.

In the Faculty of Medicine, 40 students to date have had clinical clerkships at Harvard University. A similar curriculum is being implemented by the Faculty of Dentistry. These programs were not designed to rely on or duplicate overseas educational systems, but rather to help us enrich our own educational systems and contribute to the

systems at our partner institutions.

In addition, students who have acquired high grades and who have demonstrated an exemplary ability to learn are eligible for a scholarship to study overseas. I would hope that each TMDU student zealously pursues this opportunity to gain knowledge and experience in a different culture.

In closing, I would like to note that in the Discourses of Confucius we find the saying, "Virtue never stands alone. It is bound to have neighbors." The virtuous person may feel isolated at times, but there will in fact always be another person close at hand who recognizes and understands virtue. While you are attending our university, please take every opportunity to get to know your senior students, your professors and your other teachers. The relationships you create and nurture at school will be of incalculable value to you in your professional career and your development as an internationally active member of society.

Reference: The Analects, by Confucius, Penguin Books, 1979.



Takashi OHYAMA, DDS, PhD  
President

A handwritten signature in black ink that reads "Takashi Ohyama". The signature is written in a cursive, flowing style.



# Overview 2009

- Historical Sketch
- Principals and Presidents
- Management Structure
- Organizational Chart
- Administration Officers

Historical Sketch

- Apr. 1899 Hospital associated with Tokyo Medical License Exam (Eiraku Hospital)
- Aug. 1, 1917 Hospital associated with Tokyo Dental License Exam
- Jun. 1918 Hospital associated with Tokyo Dental License Exam
- Jan. 1922 Hospital of Dentistry



Apr. 1, 1934

- Oct. 12, 1928 Tokyo National School of Dentistry
- Dec. 1930 Tokyo National School of Dentistry
- Apr. 1944 (~ Mar. 1950) Tokyo Medical and Dental College (Established the School of Medicine)

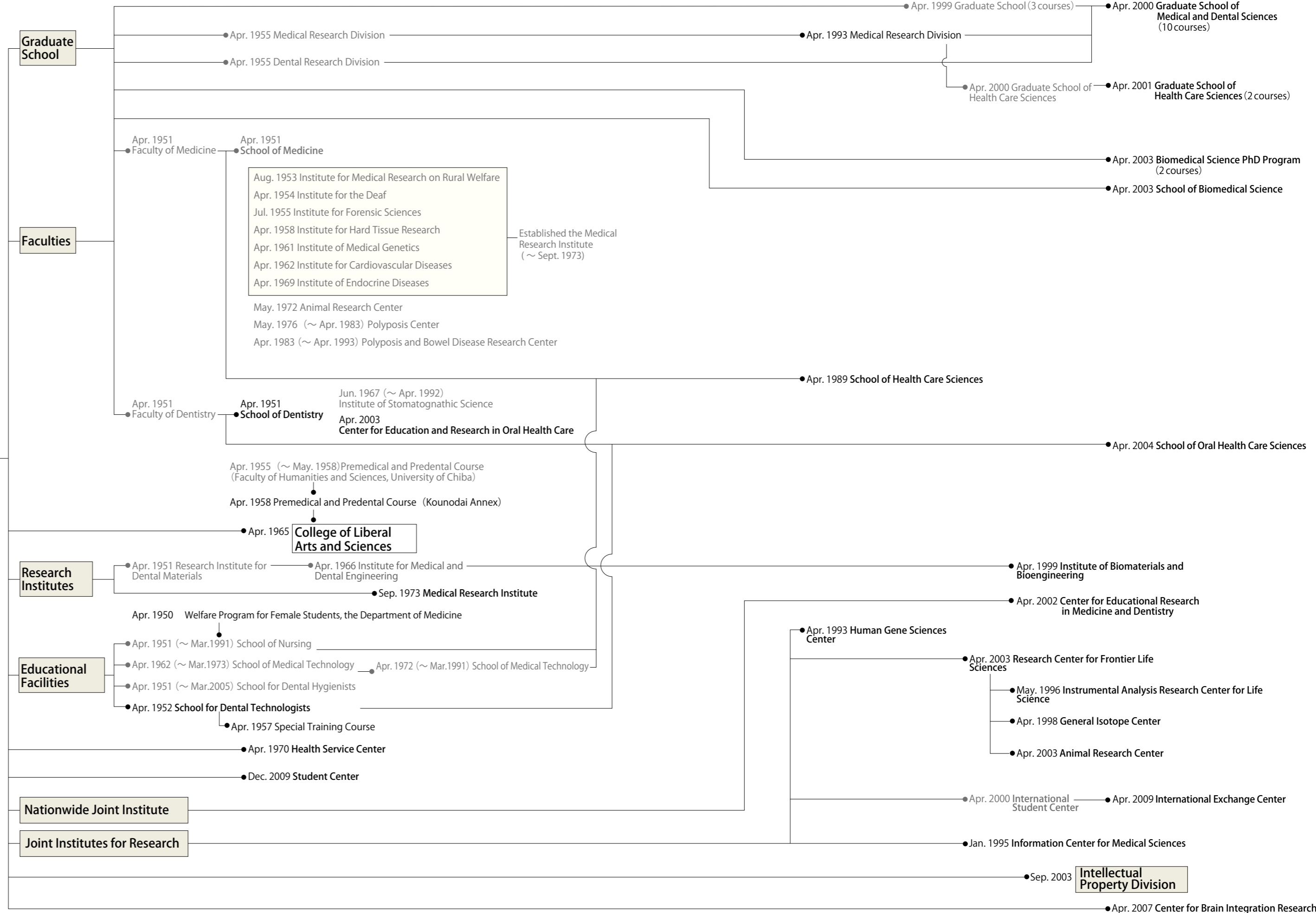
- Apr. 1929 Hospital associated with Tokyo National School of Dentistry
- Dec. 1946 Kasumigaura Branch, University Hospital, Faculty of Medicine
- Nov. 1947 Kounodai Branch, University Hospital, Faculty of Medicine

Aug. 1946 Tokyo Medical and Dental University (The Former System)

Established Apr. 2004 National University Corporation Tokyo Medical and Dental University

Apr. 1951 Tokyo Medical and Dental University (The New System)

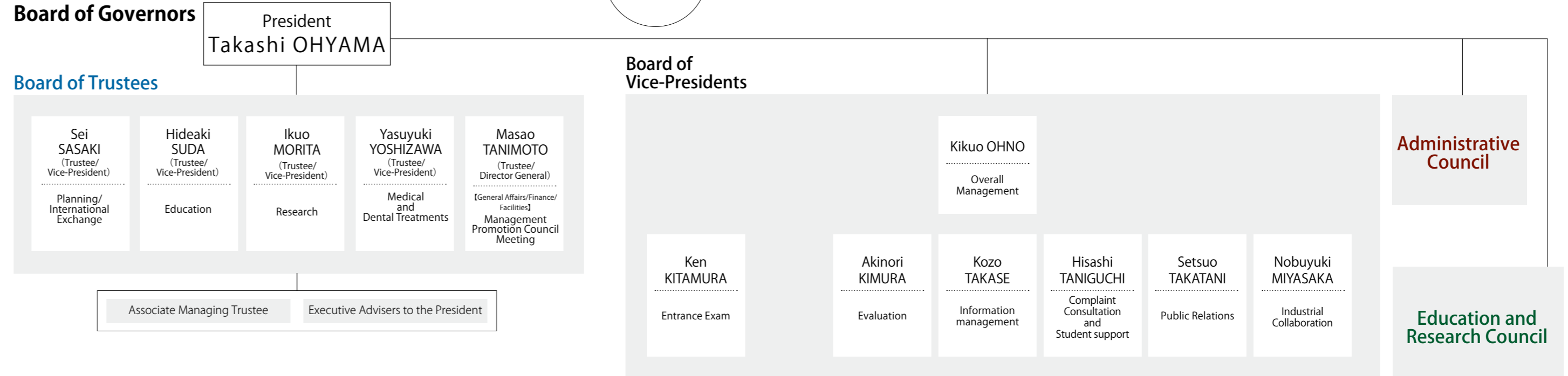
- Oct. 1946 (~ 1950) Established the Premedical Course
- Aug. 1946 University Library
- Apr. 1958 Branch Library (Kounodai Branch School)
- Apr. 1964 Kounodai Branch Library (formerly the Branch Library)
- Jun. 1949 University Hospital of Medicine
- Jun. 1949 University Hospital of Dentistry
- Kasumigaura Branch (~ Apr. 1997)
- Kounodai Branch (~ Apr. 1965)



Principals and Presidents

Tokyo National School of Dentistry	Oct.13,1928 ~ Mar.31,1944	Toru SHIMAMINE
Tokyo Medical and Dental College	Apr.1,1944 ~ Feb.9,1945	Toru SHIMAMINE
Tokyo Medical and Dental College	Feb.10,1945 ~ Feb.19,1945	Masaru NAGAO
Tokyo Medical and Dental College	Feb.20,1945 ~ Mar.31,1950	Masaru NAGAO
Tokyo Medical and Dental University	Aug.27,1946 ~ Oct.4,1946	Masaru NAGAO
Tokyo Medical and Dental University (The Former System)	Oct.5,1946 ~ Mar.31,1951	Masaru NAGAO
Tokyo Medical and Dental University (The New System)	Apr.1,1951 ~ Jun.30,1961	Masaru NAGAO
	Jul.1,1961 ~ Feb.29,1968	Masahiro OKADA
Tokyo Medical and Dental University	Mar.1,1968 ~ Mar.15,1968	Keizo OTA
Tokyo Medical and Dental University	Mar.16,1968 ~ Oct.8,1969	Keizo OTA
Tokyo Medical and Dental University	Oct.9,1969 ~ Sep.17,1970	Fumihiko SHIMIZU
Tokyo Medical and Dental University	Sep.18,1970 ~ Sep.17,1974	Fumihiko SHIMIZU
	Sep.18,1974 ~ Jul.31,1977	Yasuji KATSUKI
	Aug.1,1977 ~ Jul.31,1985	Hisashi YOSHIDA
	Aug.1,1985 ~ Jul.31,1991	Rokuro KANO
	Aug.1,1991 ~ Jul.31,1995	Hajime YAMAMOTO
	Aug.1,1995 ~ Mar.31,2004	Akio SUZUKI
National University Corporation Tokyo Medical and Dental University	Apr.1, 2004 ~ Mar.31, 2008	Akio SUZUKI
	Apr.1, 2008 ~	Takashi OHYAMA

Management Structure



Board of Trustees

Vote on important items

President	Takashi OHYAMA
Trustee (Planning/International Exchange)	Sei SASAKI
Trustee (General Affairs/Finance/Facilities)	Masao TANIMOTO
Trustee (Education)	Hideaki SUDA
Trustee (Research)	Ikuo MORITA
Trustee (Medical and Dental Treatments)	Yasuyuki YOSHIZAWA

Administrative Council

Deliberate on management issues

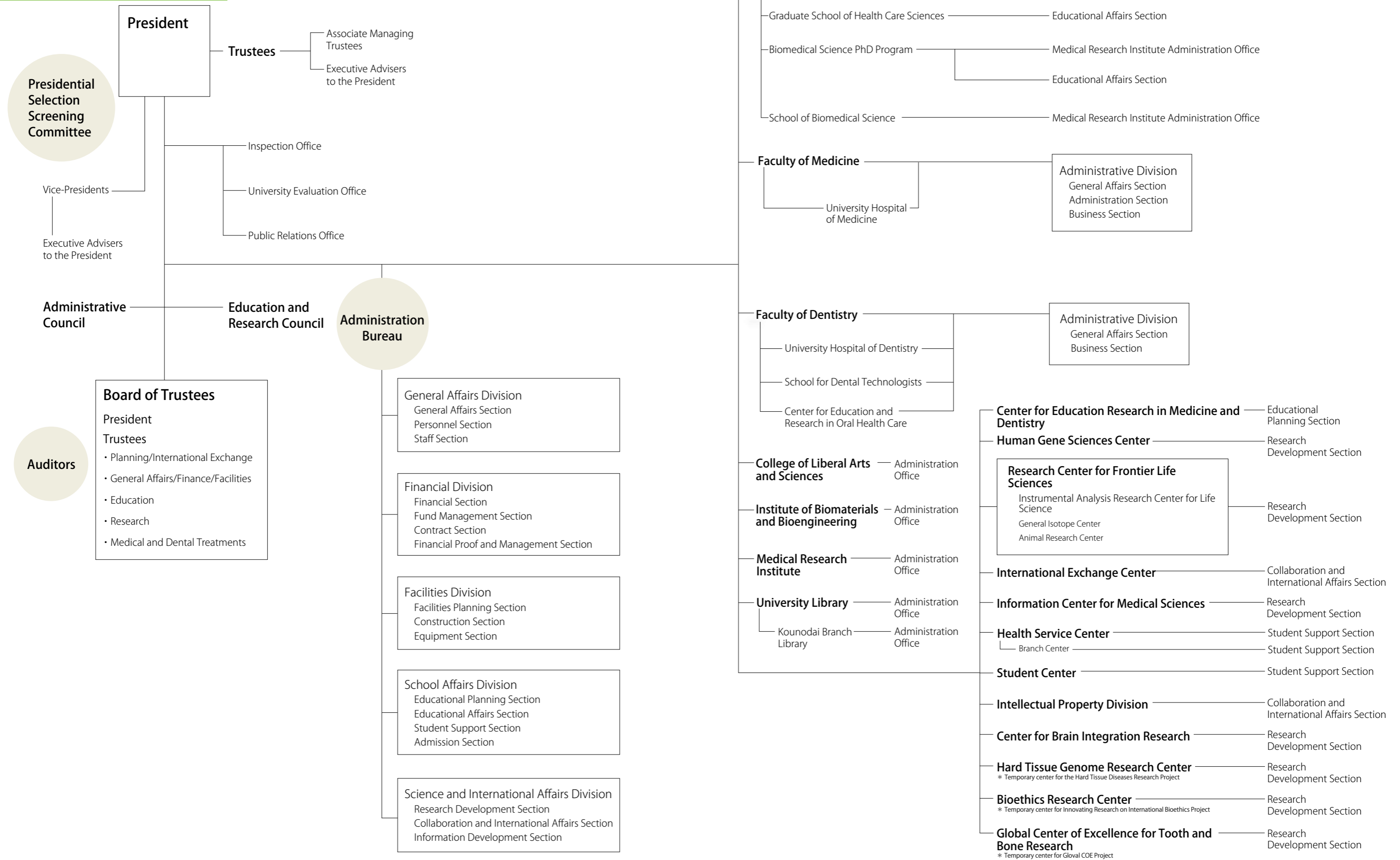
【 Internal Committee 】		【 External Committee 】	
President	Takashi OHYAMA	Chief Executive Officer, Quantum Leaps Corporation	Nobuyuki IDEI
Trustee (Planning/International Exchange)	Sei SASAKI	Chairperson, Society for the Promotion of the University of the Air	Takayoshi INOUE
Trustee (General Affairs/Finance/Facilities)	Masao TANIMOTO	Dean, Faculty of Health Science Technology Bunkyo Gakuin University, Professor	Morio KOIKE
Trustee (Education)	Hideaki SUDA	Aioi Insurance Co., Ltd, Special Adviser	Akira SESHIMO
Trustee (Research)	Ikuo MORITA	Director, Takahashi Orthodontic Office, Professors Emeritus	Fujio MIURA
Trustee (Medical and Dental Treatments)	Yasuyuki YOSHIZAWA	Chairman, Board of Trustees, Editor-in-Chief, Tsunco WATANABE	

Education and Research Council

Deliberate on educational and research issues

President	Takashi OHYAMA	Director, Institute of Biomaterials and Bioengineering	Kimihiko YAMASHITA
Trustee (Planning/International Exchange)	Sei SASAKI	Director, Medical Research Institute	Shigetaka KITAJIMA
Trustee (General Affairs/Finance/Facilities)	Masao TANIMOTO	Director, University Library	Teruo AMAGASA
Trustee (Education)	Hideaki SUDA	Director, University Hospital of Medicine	Tohru SAKAMOTO
Trustee (Research)	Ikuo MORITA	Director, University Hospital of Dentistry	Masahiko SHIMADA
Trustee (Medical and Dental Treatments)	Yasuyuki YOSHIZAWA	Professor, Graduate School of Medical and Dental Sciences (Medical Division)	Yasuhiro YUASA
Dean, Graduate School of Medical and Dental Sciences	Kikuo OHNO	Professor, Graduate School of Medical and Dental Sciences (Dental Division)	Akira YAMAGUCHI
Dean, Graduate School of Health Care Sciences	Kenji SATO	Professor, Graduate School of Health Care Sciences	Tomoko INOUE
Dean, Biomedical Science PhD Program	Hiroshi TANAKA	Professor, College of Liberal Arts and Sciences	Tsukasa CHIBA
Dean, School of Biomedical Science	Takeshi TSUBATA	Professor, Institute of Biomaterials and Bioengineering	Koji MITSUBAYASHI
Dean, Faculty of Dentistry	Junji TAGAMI	Professor, Medical Research Institute	Fumitoshi ISHINO
Dean, College of Liberal Arts and Sciences	Masaru WADA		

Organizational Chart



## Administration Officers

<b>President</b>		<b>Vice-Presidents</b>		<b>Executive Advisers to the President</b>		<b>Administration Bureau</b>	
	Takashi OHYAMA	Overall Management	Kikuo OHNO	Planning/International Exchange	Yoko KAWAGUCHI	Director General	Masao TANIMOTO
		Entrance Exam	Ken KITAMURA	Education	Yujiro TANAKA	Director, General Affairs Division	Tomio SHIMAMURA
<b>Trustees</b>		Evaluation	Akinori KIMURA	Education	Ken OMURA	Head, General Affairs Section	Satoru NARUSE
Planning/International Exchange	Sei SASAKI	Information management	Kozo TAKASE	Research	Keiji MORIYAMA	Head, Personnel Section	Hiromasa GOTO
General Affairs/Finance/Facilities	Masao TANIMOTO	Complaint Consultation and Student support	Hisashi TANIGUCHI	Entrance Exam	Miyuki AZUMA	Head, Staff Section	Hiroyuki ENDO
Education	Hideaki SUDA	Public Relations	Setsuo TAKATANI	Entrance Exam	Tomohiro MORIO	Director, Financial Division	Shutoku MINAKAWA
Research	Ikuo MORITA	Industrial Collaboration	Nobuyuki MIYASAKA	Evaluation	Shuki MIZUTANI	Head, Financial Section	Toshiaki YAMAGOSHI
Medical and Dental Treatments	Yasuyuki YOSHIZAWA		Sei SASAKI	Evaluation	Masaki YANAGISHITA	Head, Fund Management Section	Katsuo SAITOU
			Hideaki SUDA	Complaint Consultation and Student support	Masato MATSUURA	Head, Contract Section	Shinji HONDA
			Ikuo MORITA	Complaint Consultation and Student support	Yoshinobu EISHI	Head, Financial Proof and Management section	Sumiyoshi YOSHIHARA
<b>Auditors</b>			Yasuyuki YOSHIZAWA	Public Relations	Kazuo TAKAKUDA	Director, Facilities Division	Toshio TANAKA
	Toru KOBAYASHI			Industrial Collaboration	Noboru MIZUSHIMA	Head, Facilities Planning Section	Akio KYODA
	Shigeki TAKAHASHI					Head, Construction Section	Kazuhiro KUSA
		<b>Associate Managing Trustees</b>				Head, Equipment Section	Tomosue KURAMOCHI
		Planning/International Exchange	Hajime KARASUYAMA			Director, School Affairs Division	Hiroshi TANIDA
		Education	Masaru WADA	<b>Inspection Office</b>		Head, Educational Planning Section	Hisao IRIE
		Research	Shigetaka KITAJIMA	Head, Inspection Office	Hideaki SUDA	Head, Educational Affairs Section	Yoshio SAITOU
		Research	Hidehiro MIZUSAWA			Head, Student Support Section	Masahiko YAMAMOTO
		Medical Treatment	Tohru SAKAMOTO	<b>Public Relations Office</b>		Head, Admission Section	Masao KIKAWA
		Dental Treatment	Masahiko SHIMADA	Head, Public Relations Office	Setsuo TAKATANI	Director, Science and International Affairs Division	Shigeyuki SHIMODA
						Head, Research Development Section	Shoichi MURATA
						Head, Collaboration and International Affairs Section	Hitoshi KOSEKI
				<b>University Evaluation Office</b>		Head, Information Development Section	Yoshihisa YAMAGUCHI
				Head, University Evaluation Office	Akinori KIMURA		



### Graduate Schools

Dean, Graduate School of Medical and Dental Sciences	Kikuo OHNO
Vice Dean, Graduate School of Medical and Dental Sciences	Junji TAGAMI
Dean, Graduate School of Health Care Sciences	Kenji SATO
Dean, Biomedical Science PhD Program	Hiroshi TANAKA
Dean, School of Biomedical Science	Takeshi TSUBATA

### Faculty of Medicine

Dean, Faculty of Medicine	Kikuo OHNO
Director, School of Medicine	Kenichi SHINOMIYA
Director, School of Health Care Sciences	Tomoko INOUE
Director, University Hospital of Medicine	Tohru SAKAMOTO
Director, Administrative Division	Ken KATO
Head, General Affairs Section	Yuichi TOMITA
Head, Administration Section	Manabu SUGASE
Head, Business Section	Shigeo SUZUKI

### Faculty of Dentistry

Dean, Faculty of Dentistry	Junji TAGAMI
Director, School of Dentistry	Keiichi OHYA
Director, School of Oral Health Care Sciences	Hidemi YOSHIMASU
Director, University Hospital of Dentistry	Masahiko SHIMADA
Principal, School for Dental Technologists	Hiroyuki MIURA
Director, Center for Education and Research in Oral Health Care	Yuzo TAKAGI
Director, Administrative Division	Tsuneo NAKAJIMA
Head, General Affairs Section	Hideaki ISHIBASHI
Head, Business Section	Takayuki TANAKA

### College of Liberal Arts and Sciences

Dean, College of Liberal Arts and Sciences	Masaru WADA
Office Head	Kazumasa FURUICHI

### Institute of Biomaterials and Bioengineering

Director	Kimihiko YAMASHITA
Office Head	Suguru YAMATO

### Medical Research Institute

Director	Shigetaka KITAJIMA
Office Head	Narumi KAWAYANAGI

### University Library

Director	Teruo AMAGASA
Director, Kounodai Branch Library	Sakumi ITABASHI
Office Head	Tsutomu TAKEUCHI

### Center for Education Research in Medicine and Dentistry

Director	Nobuo NARA
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### Human Gene Sciences Center

Director	Masataka NAKAMURA
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### Research Center for Frontier Life Sciences

Director	Tsutomu TANABE
Director, Instrumental Analysis Research Center for Life Sciences	Tsutomu TANABE
Director, General Isotope Center	Takeshi TSUBATA
Director, Animal Research Center	Yasuhito YUASA

### International Exchange Center

Director	Ikuko MORIO
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### Information Center for Medical Sciences

Director, Administration Director	Kozo TAKASE
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### Health Service Center

Director	Shuji MIYAKE
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### Student Center

Director	Hisashi TANIGUCHI
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### Intellectual Property Division

Director, Intellectual Property Division	Nobuyuki MIYASAKA
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### Center for Brain Integration Research

Director	Hidehiro MIZUSAWA
----------	-------------------

### Hard Tissue Genome Research Center

\* Temporary center for the Hard Tissue Diseases Research Project

Director	Masaki NODA
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### Bioethics Research Center

\* Temporary center for Innovating Research on International Bioethics Project

Director	Shuki MIZUTANI
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### Global Center of Excellence for Tooth and Bone Research

\* Temporary center for Global COE Project

Director	Masaki NODA
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# Graduate Schools, Faculties

Graduate School of Medical and Dental Sciences

Graduate School of Health Care Sciences

Biomedical Science PhD Program

Graduate School of Biomedical Science

Faculty of Medicine

Faculty of Dentistry

College of Liberal Arts and Sciences

Institute of Biomaterials and Bioengineering

Medical Research Institute

University Library

Nationwide Joint Institute

Joint Institutes for Education and Research

Health Service Center

University Hospitals

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 Medical Research Institute  
 University Library  
 Nationwide Joint Institute  
 Joint Institutes for Education and Research  
 Health Service Center  
 University Hospitals

## Graduate Schools

### Graduate School of Medical and Dental Sciences

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#### The Mission

Mission Statement, Graduate School of Medical and Dental Sciences

In response to the needs of patients, professionals and the international community, we strive to become a global center of education and research in medicine and dentistry and to nurture world-class researchers and research-oriented healthcare professionals.

In our master's programs, we foster the development of professionals with an advanced knowledge of basic research in medical and dental fields. Our students gain expertise as they apply the fundamental knowledge and skills they gained in their undergraduate education to new areas, and are exposed to a wide range of knowledge and practice in medicine and dentistry.

In the PhD course, we cultivate next-generation researchers in advanced biomedical science, clinically-minded researchers who integrate basic and clinical approaches to medical and dental science, interdisciplinary researchers in medicine and dentistry, and healthcare professionals who, based on a wide spectrum of knowledge, contribute to the advancement of comprehensive patient care.

Master's Program

Medical and Dental Sciences

Medical and Dental Sciences, Master of Medical Administration Course

Doctor's Program

Oral Health Science

Departments	Sections	Head of Section (Associate Professor)
Oral Restitution	Oral Pathology	Akira YAMAGUCHI
	Bacterial Pathogenesis	Ichiro NAKAGAWA
	Molecular Immunology	Miyuki AZUMA
	Oral Radiation Oncology	Masahiko MIURA
	Oral and Maxillofacial Surgery	Ken OMURA
	Oral and Maxillofacial Radiology	Toru KURABAYASHI
	Anesthesiology and Clinical Physiology	(Hikaru KOHASE)
	Orofacial Pain Management	Masahiko SHIMADA
	Diagnostic Oral Pathology	(Norihiko OKADA) *4
Orofacial Development and Function	Developmental Oral Health Sciences	Yuzo TAKAGI
	Orthodontic Science	
Restorative Sciences	Cariology and Operative Dentistry	Junji TAGAMI
	Fixed Prosthodontics	Hiroyuki MIURA
	Pulp Biology and Endodontics	Hideaki SUDA
	Advanced Biomaterials	(Hidekazu TAKAHASHI)
	Organic Biomaterials	Kazunari AKIYOSHI *1
	Functional Biomaterials	Akio KISHIDA *1
Masticatory Function Rehabilitation	Removable Prosthodontics	Yoshimasa IGARASHI
	Oral Implantology and Regenerative Dental Medicine	Shohei KASUGAI
	Complete Denture Prosthodontics	Shunsuke MINAKUCHI

\* Note : Affiliation \*1 ---Institute of Biomaterials and Bioengineering \*2 ---Medical Research Institute \*3 ---University Hospital Medicine \*4 ---University Hospital Dentistry

\*5 ---Center for Education Research in Medicine and Dentistry \*6 ---Human Gene Sciences Center \*7 ---Research Center for Frontier Life Science

Maxillofacial/Neck Reconstruction

Departments	Sections	Head of Section (Associate Professor)
Maxillofacial Biology	Maxillofacial Anatomy	Yasuo YAMASHITA
	Cognitive Neurobiology	(Miki TAOKA)
	Molecular Craniofacial Embryology	Sachiko ISEKI
	Cellular Physiological Chemistry	Ikuo MORITA
	Molecular Neurobiology	Shuichi NOZAKI
Maxillofacial Reconstruction and Function	Maxillofacial Surgery	Teruo AMAGASA
	Maxillofacial Orthognathics	Keiji MORIYAMA
	Maxillofacial Prosthetics	Hisashi TANIGUCHI
	Dentistry for Persons with Disabilities	(Tsuneyoshi YAMAZAKI)
	Metallic Biomaterials	Takao HANAWA *1
	Biomechanics	Kazuo TAKAKUDA *1
Head and Neck Reconstruction	Clinical Anatomy	(Keiichi AKITA)
	Plastic, Reconstructive and Cosmetic Surgery	Mutsumi OKAZAKI
	Head and Neck Surgery	Seiji KISHIMOTO
	Diagnostic Radiology and Oncology	Hitoshi SHIBUYA

Bio-Matrix

Departments	Sections	Head of Section (Associate Professor)
Hard Tissue Engineering	Biostructural Science	Yoshiro TAKANO
	Pharmacology	Keiichi OHYA
	Tissue Regeneration	(Tamayuki SHINOMURA)
	Biochemistry	Masaki YANAGISHITA
	Cell Signaling	Hiroshi TAKAYANAGI
	Periodontology	Yuichi IZUMI
	Bioceramics	Kimihiko YAMASHITA *1
Molecular Regulation of Supportive Tissue	Cell Biology	Takao NAKATA
	Medical Biochemistry	Yutaka HATA
	Orthopedic Surgery	Takeshi MUNETA

\* Note : Affiliation \*1 ---Institute of Biomaterials and Bioengineering \*2 ---Medical Research Institute \*3 ---University Hospital Medicine \*4 ---University Hospital Dentistry

\*5 ---Center for Education Research in Medicine and Dentistry \*6 ---Human Gene Sciences Center \*7 ---Research Center for Frontier Life Science

Public Health

Departments	Sections	Head of Section (Associate Professor)
International Health Development	Health Promotion	Takehito TAKANO
	Environmental Parasitology	Nobuo OHTA
	Forensic Medicine	Koichi UEMURA
	International Health	(Keiko NAKAMURA)
	Oral Health Promotion	Yoko KAWAGUCHI
	Sports Medicine/Dentistry	(Toshiaki UENO)
	Forensic Dentistry	
	Stem Cell Biology	Emi NISHIMURA*2
	Molecular Epidemiology	(Noriko SATO)*2
Health Science Policies	Health Care Management and Planning	Kazuo KAWAHARA
	Health Care Economics	Koichi KAWABUCHI
	Dental Education Development	Ikuko MORIO
	Research Development	Kozo TAKASE
	Health Care Informatics	(Kiyohide FUSHIMI)*3
	Health Policy and Management in Dentistry	
	Educational System Dentistry	Kouji ARAKI*5

Gerontology and Gerodontology

Departments	Sections	Head of Section (Associate Professor)
Gerodontology	Gerodontology	Hiroshi UEMATSU
Aging Control Medicine	Comprehensive Pathology	Masanobu KITAGAWA
	Integrated Pulmonology	Naohiko INASE
	Geriatrics and Vascular Medicine	Kentaro SHIMOKADO
	Vascular and Applied Surgery	(Tatsuyuki KAWANO)
	Rehabilitation Medicine	(Sadao MORITA)*3

\* Note : Affiliation \*1 ...Institute of Biomaterials and Bioengineering \*2 ...Medical Research Institute \*3 ...University Hospital Medicine \*4 ...University Hospital Dentistry

\*5 ...Center for Education Research in Medicine and Dentistry \*6 ...Human Gene Sciences Center \*7 ...Research Center for Frontier Life Science

Comprehensive Patient Care

Departments	Sections	Head of Section (Associate Professor)
Comprehensive Oral Health Care	General Dentistry	
	Psychosomatic Dentistry	Akira TOYOFUKU
	Behavioral Dentistry	Shiro MATAKI
	Temporomandibular Joint and Occlusion	(Koji KINO)
Comprehensive Diagnosis and Therapeutics	Laboratory Medicine	Nobuo NARA*5
	Critical Care Medicine	(Chieko MITAKA)
	Liaison Psychiatry and Palliative Medicine	(Eisuke MATSUSHIMA)
	Pharmacokinetics and Pharmacodynamics	Masato YASUHARA*3
	Medical Education Research and Development	Yujiro TANAKA
	Acute Critical Care and Disaster Medicine	Yasuhiro OTOMO

Cognitive and Behavioral Medicine

Departments	Sections	Head of Section (Associate Professor)
Systems Neuroscience	Neuroanatomy and Cellular Neurobiology	Sumio TERADA
	Systems Neurophysiology	Izumi SUGIHARA
	Ophthalmology and Visual Science	Manabu MOCHIZUKI
	Otolaryngology	Ken KITAMURA
	Molecular and Cognitive Neuroscience	
	Biosystem Regulation	
Brain Medical Science	Neurobiology and Cell Pharmacology	Tsutomu TANABE
	Neurology and Neurological Science	Hidehiro MIZUSAWA
	Psychiatry and Behavioral Sciences	Toru NISHIKAWA
	Neurosurgery	Kikuo OHNO
	Neuropathology	Hitoshi OKAZAWA*2

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Bio-Environmental Response

Departments	Sections	Head of Section (Associate Professor)
<b>Infection and Bioresponse</b>	Immunology Allergology	Hajime KARASUYAMA
	Molecular Virology	Shoji YAMAOKA
	Immunotherapeutics	Mari KANNAGI
	Biodefense Research	Toshiaki OHTEKI *2
	Pathological Cell Biology	Shigeomi SHIMIZU *2
<b>Bioregulation</b>	Pediatrics and Developmental Biology	Shuki MIZUTANI
	Rheumatology	Nobuyuki MIYASAKA
	Dermatology	Hiroo YOKOZEKI
	Pathological Biochemistry	Hirobumi TERAOKA *2
	Immunology	(Takahiro ADACHI)*2
	Cellular and Environmental Biology	(Masayuki HARA)*7

Systemic Organ Regulation

Departments	Sections	Head of Section (Associate Professor)
<b>Digestive and Metabolic Disease</b>	Human Pathology	Yoshinobu EISHI
	Gastroenterology and Hepatology	Mamoru WATANABE
	Surgical Oncology	Kenichi SUGIHARA
<b>Cardio-Pulmonary Diseases</b>	Physiology and Cell Biology	Noboru MIZUSHIMA
	Cardiovascular Medicine	Mitsuaki ISOBE
	Anesthesiology	Koshi MAKITA
	Thoracic-Cardiovascular Surgery	Hirokuni ARAI
	Cardiovascular Physiology and Pathophysiology	
	Bio-informational Pharmacology	Tetsushi FURUKAWA *2
	Molecular Medicine and Metabolism	Yoshihiro OGAWA *2
<b>Regulation of Internal Environment and Reproduction</b>	Nephrology	Sei SASAKI
	Comprehensive Reproductive Medicine	Toshiro KUBOTA
	Urology	Kazunori KIHARA
	Stem Cell Regulation	Tetsuya TAGA *2
	Molecular Pharmacology	Masaki NODA *2
	Molecular Cell Biology	
	Functional Genomics	
	Epigenetics	Fumitoshi ISHINO *2
	Developmental and Regenerative Biology	Hiroshi NISHINA *2

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Advanced Therapeutic Sciences

Departments	Sections	Head of Section (Associate Professor)
<b>Gene and Molecular Medicine</b>	Molecular Oncology	Yasuhiro YUASA
	Hematology and Oncology	Osamu MIURA
	Clinical and Molecular Endocrinology	Yukio HIRATA
	Signal Gene Regulation	Masataka NAKAMURA *6
	Drug Design Chemistry	(Tomoya HIRANO)*1
	Medicinal-Chemical Biology	Hirokazu TAMAMURA *1
	Genetic Regulation	Akinori KIMURA *2
	Bio-informatics	(Yoshihito NIIMURA)*2
	Applied Genetics	Yoshio MIKI *2
	Molecular Cytogenetics	Johji INAZAWA *2
Biochemical Genetics	Shigetaka KITAJIMA *2	
<b>Advanced Surgical Therapeutics</b>	Hepato-Biliary-Pancreatic Surgery	Shigeki ARII
	Thoracic Organ Replacement	Tohru SAKAMOTO
	Orthopaedic and Spinal Surger	Kenichi SHINOMIYA
	Investigative Radiology and Endoscopy	(Isamu OHHASHI)*3
	Surgical Pathology	(Takumi AKASHI)*3
	Medical Technology	Kohji MITSUBAYASHI *1
	Medical Instruments	Kenji YASUDA *1
Artificial Organ Engineering	Setsuo TAKATANI *1	

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Endowed Departments

Department of Clinical Informatics
Department of Pharmacovigilance
Department of Nanomedicine
Department of Regenerative Therapeutics for Spine and Spinal Cord
Department of Translational Oncology
Department of Sleep-Related Respiratory Disorders
Development of Natural Bioproducts
Department of Advanced Regulatory Vascular Surgery
Department for Hepatitis Control
Department of Cartilage Regeneration
Department of Advanced Therapeutics for GI Diseases
Department of Sleep Modulatory Medicine

## Graduate School of Health Care Sciences

### The Mission

Graduate School of Health Care Sciences was established in 2001 April as the first national graduate school of nursing and laboratory sciences in Japan. The school comprises the Division of Comprehensive Health Nursing Sciences and the Division of Biomedical Laboratory Sciences, to manage many complex issues in health care science area in this century. In order to respond to these challenges and to assume international and multidisciplinary leadership roles, it is the primary philosophy of this school to prepare advanced professionals and leading international scholars through the development of an advanced educational research system and the promotion of clinical-oriented research activities in graduate school.

As our basic philosophy, we aim for each student to be a scholar as well as international leader and a leading advanced professional in clinical-oriented research. Students become advanced professionals who can take a leadership role in clinical fields and at the same time, international leading scholars who can solve problems in diverse clinical settings including communities.

Clinical competency in nursing includes skills in such professional areas as prevention of health and related living problems, recovery of good health, rehabilitation, palliative care, advanced nursing techniques, and establishment of care systems. Clinical competency in laboratory science includes accurate clinical laboratory analysis in response advances in health care. By repeating a developmental cycle from clarifying clinical problems, exploring research for problem-solving, applying research outcome to practice, confirming its validity, to clarifying new research questions, focus and methods, students can acquire the foundation for international research leadership with clinical competency.

#### Features of Our Graduate School

The educational research divisions in the graduate school have been organized to respond to the present and future needs of society for developing nursing and laboratory sciences. There are three departments and eleven educational research divisions in comprehensive health nursing sciences. There are two departments and ten educational research divisions in biomedical laboratory sciences. The educational research divisions are composed of advanced professional programs.

Health and related living problems are diverse and complicated. The program of The Division of Comprehensive Health Nursing Sciences is designed to prepare professional nurses with organizational problem-solving skills to engage in a variety of advanced nursing practices. The goal of this advanced nursing practice is to achieve individual health, greater independence of living and quality of life for clients of all ages and families from a holistic view of disease prevention, health recovery, rehabilitation, and terminal care.

Medicine and health care techniques have become increasingly advanced, influenced by the rapid progress of molecular biology in particular. Laboratory science is no exception. The program of The Division of Biomedical Laboratory Sciences prepares students to develop accurate and highly functional clinical laboratory methodologies and biomedical support systems, including home clinical laboratory system and rehabilitation tools. The course of study is based on analysis of biomedical information from molecular and cell levels to organ and individual levels, and exploration of etiology and pathophysiological analysis.

### Doctor's Program (Master's Course · Doctor's Course)

#### Comprehensive Health Nursing Sciences

Departments	Sections	Head of Section (Associate Professor)
Community Health and Home Care Nursing	Community Health Nursing	Akiko SASAKI
	Home Care Nursing	Akiko HONDA
	Reproductive Health Nursing	Noriko OHKUBO
	Mental Health and Psychiatric Nursing	Masami MIYAMOTO
Nursing Function and Care Management	Fundamental Nursing and Life Support	Yayoi SAITO
	Child and Family Nursing	Taiko HIROSE
	Critical and Invasive-palliated Care Nursing	Tomoko INOUE
	Gerontological Nursing and Health Care System	Noriko YAMAMOTO
	System Management in Nursing	
Health Education	Analytical Health Science	Chifumi SATO
	Occupational Health Education	Kumiko MORITA
	International Nursing Development	Mitsue MARU

#### Biomedical Laboratory Sciences

Departments	Sections	Head of Section (Associate Professor)
Life Sciences and Bio-informatics	Biochemistry and Biophysics	Yukichi HARA
	Anatomy and physiological Science	Kenji SATO
	Biofunctional Informatics	Masato MATSUURA
	Biophysical System Engineering	Hidetoshi WAKAMATSU
	Laboratory Animal Science	
Moleculo-genetic Sciences	Analytical Laboratory Chemistry	Minoru TOZUKA
	Microbiology and Immunology	Noboru OKAMURA
	Molecular Pathophysiology	Toichiro TAKIZAWA
	Laboratory Molecular Genetics	(Takatoshi KOYAMA)
	Advanced Analytical Chemistry	(Takeshi KASAMA)*7

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## Biomedical Science PhD Program Graduate School of Biomedical Science

### The Mission

As Japan is growing into a unique country with a low birthrate and large elderly population – post-genome research stemming from the decoded genome information and a better understanding of phenomena such as molecular structures, together with the development of the technology to control them, are expected to lower the cost burden on society as well as contribute to a higher quality of life through materialization of a healthy elderly society devoid of diseases and in which revolutionary therapies and medicines are developed and the burden on the environment is reduced. The 21st century is becoming a century of life science. Now that academic fields and social and industrial structures are changing, it is necessary to promote practical research in fusing the interdisciplinary fields related to complex disease research with leading-edge life science, and to foster human resources who have the managerial ability to realize innovations based on life science analysis and the ability to resolve practical problems. The aim of this PhD program is to nurture such human resources.

In order to conduct graduate school education that correctly meets the social needs and trends in scientific research and progress, this Graduate School promotes cooperation with various national and private research institutes staffed with superior researchers in the field of life science. Unlike the orthodox degree program education in which a student is mentored by single instructor of the area of expertise, our program allows students to be mentored by multiple instructors with various areas of research. Students are required to write a thesis (in English for the doctorate students) that is to be openly reviewed for approval. Such unorthodox education will cultivate our graduates to be true PhDs holders of global standard.

Since the academic year 2005, we have been making many attempts to globalize our educational program. We prepared courses taught in English, which is the international language in the world of science, enabling students from overseas to receive one of the highest levels of graduate school education and obtain the PhD degree in Japan without the knowledge of Japanese language. Upon achieving our goal of globalization, we will then move on to adopting our high-level performance internationally, strengthening cooperation and relations with global business industries, and encourage our students to form their career paths worldwide. Furthermore, we aim to form a global alliance of higher education institutes in Europe, the United States, and Asia, to share the philosophy of interdisciplinary disease science upon which we reconstruct our educational systems, and to develop international cooperation education of the Double-degree Program so as to maintain the quality of our education up with the global standards.

## Biomedical Science PhD Program

Doctor's Program (Master's Course • Doctor's Course)

Bioinformatics

Functional Biology

### Graduate School of Biomedical Science

Research Divisions	Sections	Head of Section (Associate Professor)
<b>Medical Bioinformatics</b>	Genome Diversity	(Toshiaki NAKAJIMA)
	Gene Structure and Regulation	(Yujiro TANAKA)
	Computational Biology	Hiroshi TANAKA
	Proteome Informatics	
	Disease Information Management	
	Genome Informatics	
<b>Applied Structural Biology</b>	Structural Biology	Nobutoshi ITO
	Medicinal Chemistry	Hiroyuki KAGECHIKA
	Chemical Bioscience	Takamitsu HOSOYA
<b>Functional Biology</b>	Gene Expression	Masatoshi HAGIWARA
	Molecular Neuroscience	Koichi TANAKA
	Immunology	Takeshi TSUBATA
	Biosystem Modeling	Tadashi MASUDA
	Immune Recognition	
	Development and Regenerative Medicine	



## Faculty of Medicine

### The Mission

Faculty of Medicine was established in 1951 and now consists of School of Medicine and School of Health Care Sciences. Subjects of School of Medicine include Functional Morphology, Physiology and Pharmacology, Molecular Genetics, Infectious Immunology, Pathology, Environmental Social Medicine, Comprehensive Diagnostics, Internal Medicine, Pediatric Medicine, Neurology and Psychiatry, Surgery, Sensory Organ Sciences, Dermatology and Plastic Surgery, Female Medicine and Urology and Reproductive Medicine. School of Health Care Sciences includes two courses of Nursing Science and Medical Technology. Subjects of the former are Fundamental and Clinical Nursing and Community Health Nursing. Subjects of the latter are Laboratory Science and Laboratory Technology.

School of Medicine and School of Health Care Sciences welcome talented students who will become leaders in the medical science and treatment not only in the future Japan but also in the future world. Furthermore, we seek students of lively imagination, with deep consideration for others and with strong spirit for contribution to people's welfare.

Based on three fundamentals of educational philosophy in Tokyo Medical and Dental University (TMDU), all staff in the School of Medicine concentrate on training students to obtain academic and medical knowledge, high professional skills in clinical medicine, research mind, the heart of humanity, and excellent insights, hoping that many of our students will contribute to our and international societies.

School of Medicine has been improving its educational curriculum for these years, introducing tutor system in problem-based medicine, MD-PhD course, TMDU-Imperial College (London) Student Exchange Program and other international exchange programs, the Harvard Medical School Externship program for 8 ~ 11 selected students every year, the project semester program for learning basic research for the 4th-year students, and clinical clerkship for the 5th- and 6th-year students.

The philosophy of the School of Health Care Sciences is based on sound knowledge and a high moral and ethical standard. We aspire to the development and personal training of health care professionals who possess originality and creativity in their ideas. The school offers professional education in nursing science and laboratory science based on an interdisciplinary approach.

Currently running projects in the Faculty of Medicine includes "Human Resource Development Plan for Cancer" which is a training program for specialists in cancer in collaboration with Graduate School, "Program to Create an Infectious Diseases Research Center" which is extensive research of emerging and re-emerging infectious diseases at the research center (Noguchi Memorial Institute for Medical Research) in Ghana, West Africa, and "Special Funds for Education and Research" which offers students medical education that meets the highest global standards.

### School of Medicine

#### Subjects

Functional Morphology
Physiology and Pharmacology
Molecular Genetics
Infectious Immunology
Pathology
Surgery
Sensory Organ Sciences
Dermatology and Plastic Surgery
Female Medicine
Urology and Reproductive Medicine
Environmental Social Medicine
Comprehensive Diagnostics
Internal Medicine
Pediatric Medicine
Neurology and Psychiatry

### School of Health Care Sciences

#### Course

#### Subjects

<b>Nursing Science</b>	Fundamental and Clinical Nursing
	Community Health Nursing
<b>Medical Technology</b>	Laboratory Science
	Laboratory Technology

## Faculty of Dentistry

### The Mission

Faculty of Dentistry consists of two schools: School of Dentistry and School of Oral Health Care Sciences. We aim to educate future leaders in dentistry and oral health care sciences.

#### [School of Dentistry]

Education philosophy at School of Dentistry is primarily to foster dentists who can promote and maintain health of the people by faithfully providing comprehensive dental care and can contribute to the development of dental medicine and service from a global perspective. We deem it our mission to educate dental students who have attained the following goals at the time of graduation:

1. acquire a broad range of general knowledge and have wide experience to become a dentist with a rich sense of humanity
2. understand scientific principles and concepts and acquire knowledge in bioscience
3. have an inquiring mind to enable them to find out problems themselves and the solutions thereof
4. acquire knowledge and basic skills necessary for the prevention, diagnosis and treatment of diseases in the oral and maxillofacial regions based on the understanding of normal and pathologic general conditions
5. fully understand the importance of the role of dental medicine and dental care in society

#### [School of Oral Health Care Sciences]

Education philosophy at School of Oral Health Care Sciences is to nurture the future leaders who have rich and warm humanity and contribute for the society to realize healthy happy life of the people, based on knowledge and technology of oral health care sciences and welfare.

Our graduates will

1. understand the dignity of the life and scientific principles and concepts and acquire knowledge in bioscience.
2. respect fundamental human rights and acquire ability to associate with the person with understanding the other person's feeling and behavior.
3. understand the role and the importance of oral health care sciences and welfare in the society.
4. understand various condition of mind and body and learn knowledge and technology about oral health care sciences.
5. acquire an inquiring mind and problem solution ability and have the will to lifelong learning.
6. acquire the ability to act with the specialists of health, medical treatment and welfare.
7. learn the ability for international contribution from the point of view of oral health care sciences.

### School of Dentistry

#### Subjects

Oral and Maxillofacial Structure
Oral and Maxillofacial Function
Oral Pathology and Pathophysiology
Oral and Maxillofacial Bioengineering
Oral Public Health and Ethics in Dentistry
Comprehensive Oral Health Care
Restorative Dentistry/Cariology
Periodontology
Oral and Maxillofacial Surgery
Prosthodontics
Gerodontology
Orofacial Development and Function
Dentistry for the Disabled/Clinical Physiology

### School of Oral Health Care Sciences

Departments	Sections	Head of Section (Associate Professor)
Fundamental Oral Health Care Sciences	Oral and Maxillofacial Biology	
	Fundamental Oral Health Care Science	Kumiko SUGIMOTO
Oral Health Care Promotion	Oral Health Care Education	Kayo TERAOKA
	Preventive Oral Health Care Science	Atsuhiro KINOSHITA
Lifetime Oral Health Care Sciences	Pediatric Oral Health Care Science	Masaaki ISHIKAWA
	Adult Oral Health Care Science	(Keiko ENDO)
	Geriatric Oral Health Care Science	Kazuhiro SHIMOYAMA
Community Oral Health Care Science	Community Oral Health Care Science	Hidemi YOSHIMASU

### Affiliated Educational and Research Facilities

	Purpose
School for Dental Technologists	Provide high level technology to Dental Technologists
Center for Education and Research in Oral Health Care	Investigation of supply and demand of oral health care in communities

# College of Liberal Arts and Sciences

## The Mission

The College of Liberal Arts and Sciences provides a liberal arts environment for all students matriculated at Tokyo Medical and Dental University. Our curriculum combines liberal arts education and general education to provide a strong foundation for the next generation of doctors, dentists, nurses, medical technicians, and oral hygienists.

Our focus on liberal arts is designed to provide the students with knowledge — and more importantly — an appreciation of history, culture, philosophy and ethics. Our focus on general education ensures our students have basic knowledge of a wide range of subjects. The two combined foci of liberal arts education and general education take intelligent students and guide them down a path that results in talented and capable health professionals who will make a substantial contribution in the future.

Our aims for our students and the abilities and skills they are to attain are as follows.

To develop civic-minded professionals who will be able to participate in the global society:

They must understand what it means to be a citizen in society, and act upon what they have learned. To do so, they need to learn about ethical norms and laws, and to respect and advance them. They also need to become aware of the global society in addition to their local societies, and become "citizens of the world" who can think and act on a global scale.

To develop scientific and analytical minds:

Social sciences and natural sciences have different methodologies, but in the end both aim to understand nature and the people living in it. As future professionals, it is important to become aware of the characteristics of each discipline and to apply this knowledge in research and problem-solving.

To develop techniques and skills required for successful communication:

Be it vocal, written, or visual, all communication requires skill. Nonverbal body language is also important. Moreover, it is necessary to sift through a wealth of acquired information, and be able to identify and retain what is valid, interpreting it correctly. As communicators, they must pare down information and structure it into an understandable form and order, which is a preliminary step to structuring the information as facts, figures, and composition which will be an understandable and cohesive message that they can successfully convey to their intended audience.

To provide a strong foundation for underlying future study:

Both medicine and dentistry are based upon a basic knowledge of natural sciences, logical and scientific thinking, and problem-solving skills. Through lectures and laboratory work in mathematics, physics, chemistry, and biology, our students will acquire these skills.

Subjects	Head of Section(Associate Professor)
Philosophy	(Tomohiko TANAKA)
History	
Literature	(Tomoko TOSA)
History of Social Thought	
Sociology	Sakumi ITABASHI
Mathematics	Masao KIYOTA (Shinichi TOKUNAGA) (Etsushi NAKAGUCHI)
Physics	Tsukasa CHIBA (Kazuki KOSHINO)
Chemistry	Mitsuyo OKAZAKI (Masayuki NARA)
Biology	Masaru WADA Atsuhiko HATTORI
English	Philip Michael Tromovitch (Kazuyo KUROYANAGI) (Tomonao YOSHIDA)
German	Shinzinger Emi
French	Hikaru NAKASHIMA
Health Science and Physical Education	Tetsuya MIZUNO



Hippocrates Hall



Champ de Causerie



"Urban crows" in the Ginkgo Yard



"Cyclops" at Entrance wall of the Hippocrates Hall



"Metamorphic landscape" in the Tumulus Lawn

# Institute of Biomaterials and Bioengineering

## The Mission

The Institute of Biomaterials and Bioengineering (IBB) was originally established as the Research Institute of Dental Materials with the aim for development innovative dental devices and materials in 1951. Through the reorganization to the Institute for Medical and Dental Engineering in 1966, the Institute expanded into the present IBB with 3 large divisions consisting of 13 departments in 1999. Since the establishment, IBB has been contributing to the development of biomaterials and medical devices as the international forerunner through harmonizing the engineering and technological science with medical and dental sciences.

The IBB has put forward the following 3 objectives in order to expand and deepen the basic science for biomaterials and bioengineering since April in 2004, when Tokyo Medical and Dental University restarted as a national university cooperative, leading to the development of applied science and technologies for the advanced medicine and dentistry.

- (A) An inquiry into the Nano-Bioscience for Advanced Medicine and Dentistry
- (B) The creation of Bio-Inspired Biomaterials for New Clinical Applications
- (C) The development of Bio-System Engineering for Advanced Medical and Dental Devices

Despite the drastically changing circumstances around universities in Japan, the IBB has been continuously forwarding the roles for an international center of excellence of biomaterials and bioengineering.



Institute of Biomaterials and Bioengineering

### Purpose

To study biofunctional molecules, biomaterials and biosystems

Research Divisions		Head of Section (Associate Professor)
<b>Biofunctional Molecules</b>	Medicinal Chemistry	Hirokazu TAMAMURA
	Molecular Design	(Tomoya HIRANO)
	Applied Functional Molecules	Akio KISHIDA
	Biosensors	Toshiaki FURUTA
<b>Division of Biomaterials</b>	Metals	Takao HANAWA
	Inorganic Materials	Kimihiro YAMASHITA
	Organic Materials	Kazunari AKIYOSHI
	Biomaterials Mechanics	Teuvo Antero Hentunen
<b>Division of Biosystems</b>	Biodesign	Kazuo TAKAKUDA
	Biomedical Information	Kenji YASUDA
	Biomedical Devices and Instrumentation	Kohji MITSUBAYASHI
	Biosystem Regulation	
	Artificial Organs	Setsuo TAKATANI

# Medical Research Institute

## The Mission

Our research focus is to tackle the issues in medical science with a hope to contribute to develop measures for the patients who are suffering from intractable diseases. These disorders include metabolic, neurological, psychiatric, cardiovascular, loco-motor, immunological, genetic, infectious and neoplastic ones. The patho-physiological bases of these diseases should be understood on the bases of molecular analyses of the mal-function and impaired regulation of homeostasis.

State-of-the-art science on the cellular and molecular mechanisms operating in the life of basic organism as well as human has been sought vigorously in our institute and this activity has been continuously expanding in these years. This is reflected in our record of recent publications as well as the amounts of major grants obtained in the field of medical science including the participation of many staff members of our institute in the 21st Century COE program of our university.

The strength of Medical Research Institute also lies on the close tie with its newly commenced graduate school system. The number of young investigators in our institute has increased significantly and the new educational system has been attracting attention of the medical science society.

The activity of our institute has been international. We have established scientific ties with a number of overseas universities and institutions such as Harvard University. In addition to the various international collaborations in our research activities, we have been accepting many visitors worldwide including scientists from major institutes. International symposiums and seminars have been constantly held to provide cutting edge knowledge in medical science but also opportunities to establish relationship among young scientists and world top class investigators.

As Medical Research Institute is growing in a number of respects as a young institution in the field of molecular medical science, we are welcoming everyone who is interested in joining us in our endeavor to seek for the clues to cure patients with intractable diseases in the future by unraveling the great mystery of nature.



Medical Research Institute

### Purpose

To study the pathogenesis, treatment and prevention of refractory diseases including collagen diseases

Research Divisions		Head of Section (Associate Professor)
<b>Advanced Molecular Medicine</b>	Molecular Medicine and Metabolism	Yoshihiro OGAWA
	Molecular Pharmacology	Masaki NODA
	Molecular Cell Biology	Hiroshi SHIBUYA
	Molecular Neuroscience	
	Biodefense Research	Toshiaki OHTEKI
	Bio-informational Pharmacology	Tetsushi FURUKAWA
	Stem Cell Regulation	Tetsuya TAGA
	Project Research Unit	
<b>Pathophysiology</b>	Neuropathology	Hitoshi OKAZAWA
	Pathological Biochemistry	Hirobumi TERAOKA
	Pathological Cell Biology	Shigeomi SHIMIZU
	Developmental and Regenerative Biology	Hiroshi NISHINA
	Stem Cell Biology	Emi NISHIMURA
	Immunology	(Takahiro ADACHI)
	Molecular Pathogenesis	Akinori KIMURA
	Frontier Research Unit Virus Research Unit	(Norio SHIMIZU)
	Project Research Unit	(Saburo HORIKAWA)
		(Tokio YAMAGUCHI)
<b>Medical Genomics</b>	Molecular Cytogenetics	Joji INAZAWA
	Molecular Genetics	Yoshio MIKI
	Molecular Epidemiology	Masaaki MURAMATSU
	Biochemical Genetics	Shigetaka KITAJIMA
	Functional Genomics	
	Epigenetics	Fumitoshi ISHINO
	Bioinformatics	(Yoshihito NIIMURA)
	Frontier Research Unit. Redox Response Cell Biology	(Shun-ichi KURATA)
	Project Research Unit	(Shinobu SAKAMOTO)
		(Michinori KUBOTA)
<b>Division of Integrative Research</b>	Division of Pathogenetic Regulation	
	Division of Biosystem Generation	

# University Library

## The Mission

A new role is being demanded of university libraries as academic information is becoming increasingly computerized, modes of information distribution are undergoing unprecedented transformation, and the information utilization behavior of the users is changing greatly.

In particular, the following 4 functions need to be improved at future university libraries: 1) collection and storage of strategic paper documents representative of the special characteristics of the university, 2) establishment and improvement of collection and storage systems for various kinds of academic documents, 3) measures for space reduction, etc., through computerization, and 4) maintenance of basic facilities in university libraries.

In accordance with these requirements, the library of this university focuses on 3 points: (1) expansion of information use services, (2) integration and systematization of on-campus information resources, and (3) a strategy for quantitative and qualitative expansion of users; and developed the following concepts:

(1) Expansion of information use services

- ① Computerization of library catalogs
- ② Enhancement and reexamination of electronic media
- ③ Establishment of information outlets
- ④ Large-scale increase in the number and versatility of reading seats
- ⑤ Increase in the number of users of the medical and dental media center, and enhancement of installed equipments

(2) Integration and systematization of on-campus information resources

- ① Research related materials stored in each field as research related information
- ② Application of e-learning systems based on automatic lecture recording systems to learning content, etc.

(3) A strategy for quantitative and qualitative expansion of users

- ① Expansion of information literacy education
- ② Response to multi-purpose needs of users
- ③ Creation of comfortable reading spaces

In addition, there are plans of relocating the library of this university in 2010 to the 3rd and 4th floors of the Secondary Wing of the Tokyo Medical and Dental University Integrated Research Wing, change its name to the Medical and Dental Media Center, and reopen it based on the above concepts.



Reading Room

## Library Holdings

Classification	Japanese Books (including periodicals)	Foreign Books (including periodicals)	Total
The Main Library	111,485	151,246	262,731
Kounodai Branch Library	66,095	16,705	82,800
<b>Total</b>	<b>177,580</b>	<b>167,951</b>	<b>345,531</b>

(Fiscal Year 2008)

## Facilities

Classification	Reading Room		Stack Room	Office and Other	Total
	Floor Space	Seats			
The Main Library	551 m <sup>2</sup>	142	880 m <sup>2</sup>	1,192 m <sup>2</sup>	2,623 m <sup>2</sup>
Kounodai Branch Library	280 m <sup>2</sup>	125	468 m <sup>2</sup>	285 m <sup>2</sup>	1,033 m <sup>2</sup>

## Utilization

Classification	Total Days Open	Visitors	Hours Open		Books and Journals Checked Out	
			Weekdays 9:00 ~ 22:00	Holidays 9:00 ~ 17:00	Students	Teaching Staff
The Main Library	356	179,312	Weekdays 9:00 ~ 22:00	Holidays 9:00 ~ 17:00	Students 5,396	Teaching Staff 1,498
Kounodai Branch Library	240	41,175	Weekdays 9:00 ~ 20:00	—	Students 1,841	Teaching Staff 200

(Fiscal Year 2008)

# Nationwide Joint Institute

Research Divisions	Purpose	Director
<b>Center for Education Research in Medicine and Dentistry</b>	Overall assessment of student goal attainment for attitude, technique and knowledge Research of medical and dental education and curriculum development	Nobuo NARA Koji ARAKI



Investigation tour at Melbourne University (2007 School year Entrusted Project from the Ministry of Education, Science and Sports)



Practicing Simulation education in the Skillslaboratory

## Joint Institutes for Education and Research

Research Divisions	Purpose	Director
<b>Human Gene Sciences Center</b>	Research and education of disease related genes	Masataka NAKAMURA
<b>Research Center for Frontier Life Science</b>		
<b>Instrumental Analysis Research Center for Life Science</b>	Development, research and education of the technology for advanced measurement and analysis. Promotion of individual utilization of shared analytical equipments and analysis service offer.	
<b>General Isotope Center</b>	Research and education on radioisotopes	
<b>Animal Research Center</b>	Analyses of diseases and studies of animal care for medical use	
<b>Information Center for Medical Sciences</b>	Research and education on information sciences and computers in medicine	
<b>International Exchange Center</b>	To integrate affairs related to the international exchange area, and to support the school's promotion of international exchange.	



Human Gene Sciences Center



International Exchange Center

## Health Service Center

Health Service Center	Purpose	Director
	Improving health management Maintaining and promoting the health of TMDU student and staff	Shuji MIYAKE

## University Hospitals

### The Mission

The University Hospital of Medicine is committed to providing excellent patient care as well as advanced medical technology to the community. The mission of the University Hospital of Dentistry includes world-class staff as well as providing excellent dental care tailored to individual patient's needs. The success of these missions requires (1) the practical training of faculty, staff, students, and trainees and (2) innovative scientific research and breakthrough discoveries. Each member of Tokyo Medical and Dental University is devoted to accomplishing our missions by delivering high quality patient care, education, and research while respecting the human spirit.

Our ultimate goal is to provide the highest quality medical care and scientific knowledge in the future, which includes:

1. To provide patients with the best possible medical care and enable their daily life and health to the utmost extent.
2. To reduce the likelihood of illness with the application of new findings in preventive medicine and clinical studies.
3. To improve the cure rate of illness with the swift application of new findings from clinical trials.
4. To educate medical professionals sensitive to society's needs.
5. To train medical professionals who can offer clinical training for students in their internship in the TMDU teaching hospitals and other affiliated hospitals.

6. To discipline medical educators and researchers with a vision for the future, who can advance medical education and practice for coming generations.

In line with these general purposes, we have a few specific aims as follows:

1. To provide a learning environment well organized with multiply attended teaching staff and clinical experiences for undergraduate and postgraduate education.
2. To provide patients with safe and high quality medical care.
3. To develop cooperative relations with central hospitals in the Tokyo area, as well as establishing a support system for providing significant medical contributions to the global community.
4. To conduct collaborative studies including clinical trials with other affiliated hospitals, and widen the coverage of high quality medical care.
5. To promote an effective intercollegiate research environment bringing our intellectual resources in cutting edge medical science to society.
6. To establish efficient and economical management of the hospitals with the highest medical security for the nation.



The University Hospital of Medicine



The University Hospital of Dentistry

## University Hospital, of Medicine

Beds 800

### Clinics

<b>Department of Internal Medicine</b>	Hematology	Geriatrics
	Rheumatology	Gastroenterology and Hepatology
	Endocrine, Metabolic, Diabetes	Cardiovascular Medicin
	Nephrology	Pulmonary Medicine
<b>Department of Surgery</b>	Esophageal and Gastric Surgery	Thoracic-Cardiovascular Surgery
	Colorectal Surgery	Thoracic Organ Replacement
	Hepato-Biliary-Pancreatic Surgery	Urology
	Breast Surgery	Head and Neck Surgery
	Vascular Surgery	
<b>Department of Sensory, Motor System Medicine and Dermatology</b>	Ophthalmology	Plastic and Aesthetic Surgery
	Oto-Rhino-Laryngology	Orthopedic Surgery
	Dermatology	
<b>Department of Pediatrics, Maternal and Woman's Clinic</b>	Pediatrics and Pediatric Surgery	Clinical Genetics Division
	Maternal and Woman's Clinic	
<b>Department of Neurology, Neurosurgery and Neuropsychiatry</b>	Neurosurgery	Anesthesiology and Pain Clinic
	Neurology	Psychosomatic and Palliative Medicine
	Neuropsychiatry	
<b>Department of Radiology</b>	Diagnostic Radiology and Oncology	

### Trauma and Acute Critical Care Medical Center

#### Department of Internal Medicine

Department of Pharmacy	Supply Unit	Outpatient Chemotherapy Center	Hyper Baric Medical Center
Clinical Laboratory	Maternal fetal medicine division	Positron Emission Tomography Center	ME Center
Operating Center	Department of Pathology	Cancer Treatment Center	Center for Cell Therapy
Radiological Center	Department of Endoscopic Diagnosis and Therapy	Center for Medical Welfare and Support	Department of Medical Records
Hospital Blood Transfusion Center	Department of Medical Informatics	Clinical Research Center	Quality Management Section
Physical Medicine Center	Department of Blood Purification	Center for Postgraduate Medical Education	Infection Control Section
Intensive Care Unit	Department of General Medicine		

### Nursing Department

## University Hospital of Dentistry

Beds 60 Chair Units 317

### Hospital Departments

<b>Clinics for Dentofacial Growth and Development</b>	Orthodontics	
	Pediatric Dentistry	
<b>Clinics for Conservation of Oral and Maxillofacial Function</b>	Operative Dentistry and Endodontics	Head and Neck Psychosomatic Medicine
	Periodontics	Temporomandibular Joint Clinic
	Orofacial Pain Clinic	
<b>Clinics for Oral and Maxillofacial Rehabilitation</b>	Oral Surgery	Sports Dentistry
	Maxillofacial Surgery	Speech Clinic
	Prosthodontics	Dental Implant Clinic
	Maxillofacial Prosthetics	
<b>Clinics for General Dentistry</b>	Oral Diagnosis and General Dentistry	Special Care Clinic
	Dental Sleep Clinic	Dysphagia Rehabilitation
	General Dentistry I	Fresh Breath Clinic
	General Dentistry II	Cleanroom
	General Dentistry III	Oral Health Care
	Ambulatory Anesthesia Service	Dental Allergy
	Oral and Maxillofacial Radiology	

### Central Clinical Facilities

Clinical Laboratory	Center for Advanced Dental Clinical Education	Center for Development of Instruments and Drugs in Dentistry	Section of Central Supplies
Dental Laboratory	Center for Clinical Cooperation	Division of Surgical Operation	
Unit for Infection Control	Center for Dental Information	Dental Ward	

### Department of Pharmacy

### Department of Nursing

### Department of Dental Hygiene



### Number of Patients

Classification	Inpatients			Outpatients	
	Total	Per Day	Bed Occupancy	Total	Per Day
<b>University Hospital of Medicine</b>	253,020	691.3	86.4%	516,495	2,108.1
<b>University Hospital of Dentistry</b>	17,768	48.7	81.1%	445,518	1,833.4
<b>Total</b>	270,978	740.4	86.1%	950,082	3,877.8

(Fiscal Year 2008)





# Current Projects

Newly Funded Projects

Global COE Program

Project to Assist the Implementation of a High Level Research / Education System

The "Strategic University Collaboration and Assistance Program for the Enrichment of University Education"

Program for Promoting University Education and Student Support  
Theme A: Program for Promoting University Education Reform

The Plan of the Construction of the Career System of Nurses

Program for Enhancing Systematic Education in Graduate Schools

Human Resource Development Plan for Cancer

Support Program for Contemporary Educational Needs

University Hospitals Collaborative Project to Develop Advanced Medical Specialists

Remedial Training Programs

Support Programs for Improving Graduate School Education

Special Coordination Funds for Promoting Science and Technology

Science and Technology Research Partnership for Sustainable Development

Exchange Program for East Asian Young Researchers

JSPS A3 Foresight Program

Program of Founding Research Centers for Emerging and Reemerging Infectious Diseases

Japan Science and Technology Agency Project to Develop "Innovative Seeds" Supporting Program for Creating University Ventures

Molecular Imaging Research Program

The Integrated Database Project

JSPS Core to Core Program

Program for Accelerating Internationalization of Higher (University) Education

Project for the Strategic Development of Industry-University-Government (I-U-G) Collaboration (Strategic Development Program)

Special Funds for Education and Research

Funds for Subjects Related to Policies

Medical and Dental Sciences, Master of Medical Administration Course

Intellectual Property Division / Technology Licensing Organization (TLO)

## Newly Funded Projects

The following proposals by TMDU were newly funded in year 2009

(September 1, 2009)

### Project to Assist the Implementation of a High Level Research / Education System

#### TMDU Internationalization and the High Level Research / Education Project

Project Leader: Ikuo MORITA, PhD (Trustee, Research)

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### The "Strategic University Collaboration and Assistance Program for the Enrichment of University Education"

#### Establishment of a Hub for Cultivating Well-Rounded Graduate Talent Via the Tokyo Interdisciplinary Life Sciences Consortium

Principal Investigator: Hiroshi TANAKA, DM, PhD (Dean, Biomedical Science PhD Program)

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### Program for Promoting University Education and Student Support Theme A: Program for Promoting University Education Reform

#### Progress of the Computer Assisted Simulation for Medical and Dental Practice Training. - Computer Assisted Simulation Promoting Clinical Inference, Decision-making, Problem Solving, and Cooperation Ability of Health Professional. -

Principal Investigator: Atsuhiro KINOSHITA, DDS, PhD (Professor, School of Oral Health Care Sciences)

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### The Plan of the Construction of the Career System of Nurses

#### Development of "The Nursing IKASHIKA Career Path" ~ by Methods of Mentoring and PBL ~

Principal Investigator: Tomoko KOMUTA (Director of Nursing, University Hospital of Medicine)

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### Program for Enhancing Systematic Education in Graduate Schools

#### TITECH-TMDU Joint Education Program for Biomedical Bioinformatics

Leader: Prof. Dr. Hiroshi TANAKA, Dean, Biomedical Science PhD Program

→ Page 55

### Special Coordination Funds for Promoting Science and Technology

#### International Collaboration for Development of a New Drug Against Avian Influenza (JST)

Principal Investigator: Masatoshi HAGIWARA, MD, PhD (Professor, Functional Genomics, School of Biomedical Science)

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## Newly Funded Projects

### Science and Technology Research Partnership for Sustainable Development

#### Studies of Anti-viral and Anti-parasitic Compounds from Selected Ghanaian Medicinal Plants

Principal Investigator: Shoji YAMAOKA, Professor of Department of Virology, Graduate School, Tokyo Medical and Dental University

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### Exchange Program for East Asian Young Researchers

#### Young Researchers' Project in Medicine and Dentistry - Establishing a Network of Health Care Professionals in Southeast Asia -

Principle Investigator: Junji TAGAMI, DDS, PhD (Dean, Faculty of Dentistry)

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### JSPS A3 Foresight Program

#### Epigenetic Signatures in Gastric Carcinogenesis

Principal Investigator: Yasuhito YUASA, Professor, Department of Molecular Oncology, Graduate School of Medical and Dental Sciences

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Deng Dajun,

Professor and Director, Department of Aetiology, Beijing Cancer Hospital/Institute, Peking University School of Oncology, China

Kim Woo Ho, Professor,

Department of Pathology, Seoul National University College of Medicine, Korea

### Special Funds for Education and Research

#### Path.-Signaling Biology Research Program

Principal Investigator: Yoshio MIKI, MD, PhD (Professor, Medical Research Institute)

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### Special Funds for Education and Research

#### Establishment of the Brain and Vascular Regulation Center

Hidehiro MIZUSAWA, MD, PhD (Director, Center for Brain Integration Research)

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## Global COE Program

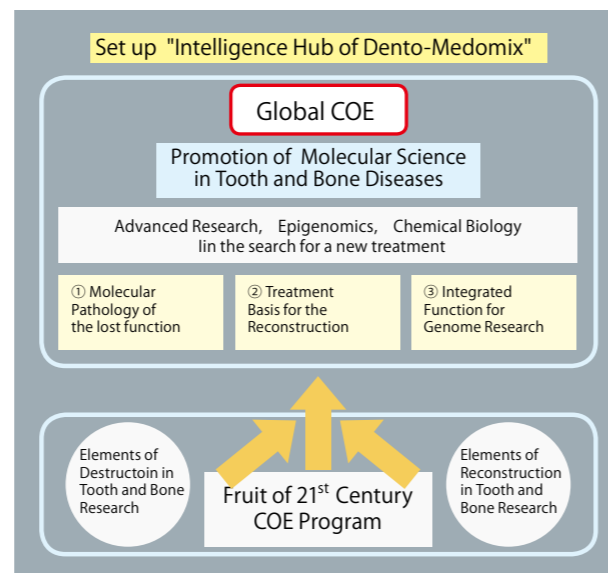
### International Research Center for Molecular Science in Tooth and Bone Diseases

Program Leader: Masaki NODA, MD, PhD (Professor, Medical Research Institute)

Tokyo Medical and Dental University is a distinguished institute and known as a world center for the study of "tooth" and "bone" diseases. The purpose of this Global COE (G-COE) program is to form a world-top class research center in the field of tooth and bone diseases. This program is a new development as well as succession of previous 21st century COE (21COE) program. We will promote our cutting-edge studies on tooth and bone diseases and form a unique international educational research center. Our G-COE program will nurture young researchers of the next generation who will work globally on molecular science in "tooth" and "bone" diseases. This is critical for the future welfare of all human beings and is of particular importance in Japan, the world's fastest aging society.

In modern developed countries, maintenance of not only life expectancy, but also "healthy life expectancy" is an important issue, and "tooth" and "bone" diseases are major problems that need to be urgently addressed in this regard. In the 21st century COE program, this center has made a remarkable accomplishment in clarification of the mechanism of loss of tooth and bone and in discovery of novel methods for tooth and bone reconstruction by finding "key elements" of the regulatory systems in the function of osteoclasts and osteoblasts and those in initiation for clinical medicine. However, identification

of individual discoveries and accomplishments alone is not enough to understand the mechanisms of the comprehensive pathology and onset of the diseases. Thus, in the Global COE program, such achievements of basic studies and those of clinical research established in the previous 21st Century COE program will be integrated and developed into three areas including (1) elucidation of basic molecular mechanisms in pathology of the diseases leading to loss of tooth and bone, (2) fundamental clinical research for diagnosis and therapeutic treatments and also (3) advancement of functional genomic studies on tooth and bone diseases based on genomic and epigenetic science. Through the research into these three areas, this center will aim to become the highest standard organization in the world in terms of integrated research on molecular science for tooth and bone diseases. Moreover, we will further develop an international research network. Through this, we will establish an intelligence hub that will create innovative science and lead the research in this field to provide cutting edge information worldwide.



## Project to Assist the Implementation of a High Level Research / Education System

### TMDU Internationalization and the High Level Research / Education Project

Project Leader: Ikuo MORITA, PhD (Trustee, Research)

In order to strengthen international contributions through the avenues of education, research, and medical treatment, TMDU, in conjunction with the University of Ghana, set up the Collaborative Research Center on Emerging and Reemerging Infectious Diseases in the Republic of Ghana. Two more global education and research centers are in the process of being set up; one in South America, and one in Southeast Asia.

Furthermore, to encourage these and similar internationalization efforts, the TMDU International Summer Program (consisting of a lecture course and an international symposium), to which TMDU invites Asian students and researchers, was inaugurated in 2009.

During 2009 TMDU also organized an International Exchange Promotion Head Office, to be led by the trustee in charge of planning and international exchange. In addition, TMDU reorganized the "International Student Center" into the "International Exchange Center" to support the above expansion of internationalization efforts. Moreover, the newly established Science and International Affairs Division will provide clerical support for the various international activities and projects that TMDU will undertake.

Since infrastructure is critically important for state-of-the-art of basic / clinical research, the Research Project Support Office, headed by the trustee in charge of research, was organized this year. The purpose of this office is to develop relevant research project centers, support young researchers and female researchers, and enable researchers to acquire external funding.

This particular project will result in the improvement of laboratory equipment, the establishment of a research-funds management center and a student center, the promotion of industrial collaboration, management of conflicts of interest, and compliance with research standards. Our overall aim is for TMDU to become a high-level hub research center in the international community.

This project includes the following activities:

- (1) Formation and enrichment of overseas education/research centers
  - University of Ghana (Noguchi Memorial Institute for Medical Research: TMDU–University of Ghana Research Center for Emerging and Reemerging Infectious Diseases)
  - Clinica Las Condes (Latin American Collaborative Research Center, TMDU, Santiago, Chile)
  - Chulalongkorn University (Chulalongkorn University–TMDU Research and Education Collaboration Center)
- (2) Promotion of international exchange projects
  - International Summer Program (lecture course and international symposium)
  - International students support program (Japanese language education)
  - Overseas training program for professors (advising practitioners on clinical practice)
- (3) Enrichment of the International Exchange Center
  - Employment of the Director for International Exchange
- (4) Support for strengthening educational facilities
  - Establishment of a Student Center
  - Development of a pathological anatomy specimen for educational use; acquisition of equipment for the photography room
  - Improvement in the animal experiment facilities
- (5) Support for research intensification
  - Establishment of the Research Expenses Management Center
  - Hiring of staff dedicated to procuring more research funding
- (6) Promotion of industrial collaboration
- (7) Support for researchers



Opening ceremony for the TMDU-University of Ghana Research Center for Emerging and Reemerging Infectious Diseases.



Presentation of certificates to International Summer Program 2009 participants from Thailand.



TMDU students getting career advice at the newly opened Student Center.

The "Strategic University Collaboration and Assistance Program for the Enrichment of University Education"

Establishment of a Hub for Cultivating Well-Rounded Graduate Talent Via the Tokyo Interdisciplinary Life Sciences Consortium

Principal Investigator: Hiroshi TANAKA, DM, PhD (Dean, Biomedical Science PhD Program)

The field of interdisciplinary life sciences in Tokyo Medical and Dental University, Ochanomizu University, Gakushuin University and Kitasato University is at the core of efforts to establish a network linking industry, government, academia, and the community. They will do so by expanding upon the connections among various research institutions, corporations, and government bodies in the Tokyo Metropolitan Area. In addition, by continuing to form links with community networks

they will build an interdisciplinary environment for research and education which transcends the public/private framework and is based on collaboration with the community. They will produce wide-ranging scholarship in order to cultivate talent capable of understanding and addressing real-world societal needs. At the same time they will form a hub for the life sciences encompassing industry, government, academia, and the community.

The Program Objectives and the Strategic Collaboration Schematics

Improving the Level of Education

1. Development of a Common Curriculum Among Participating Graduate Schools
2. Standardization of Degree Requirements in all 4 Universities
3. Joint Implementation of FD Seminars, Etc.

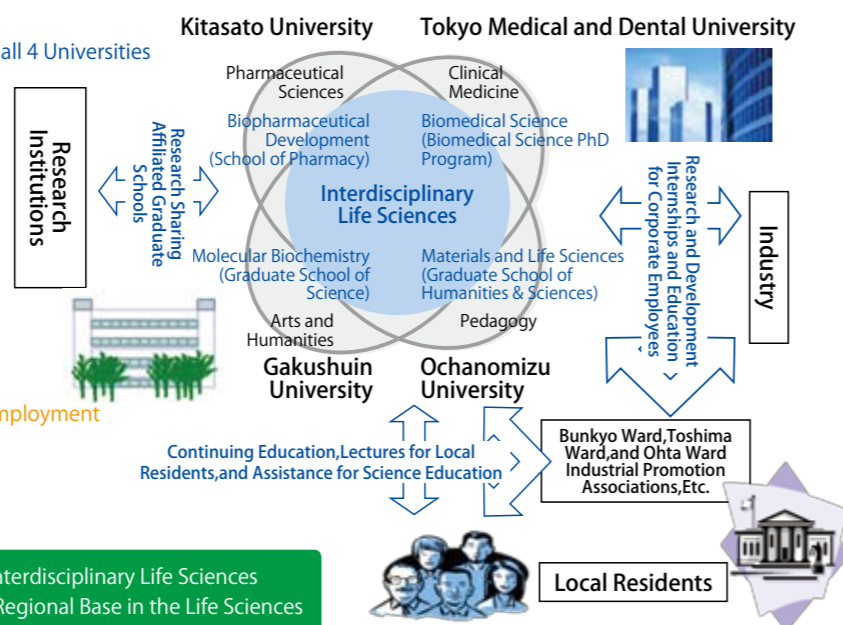
Collaboration Between Industry, Academia, and the Community

1. Implementation of Research Exchange and Joint Research and Development
2. Implementation of Continuing Education and Education for Corporate Employees
3. Hosting Lectures for Local Residents, Etc.

Assistance for Students

1. Assistance with Internships and Finding Employment
2. Improving English Education
3. Assistance for Exchange Students, Etc.

1. Cultivation of Well-Rounded Talent in the Interdisciplinary Life Sciences
2. Formation of an Internationally Oriented Regional Base in the Life Sciences



Program for Promoting University Education and Student Support  
Theme A: Program for Promoting University Education Reform

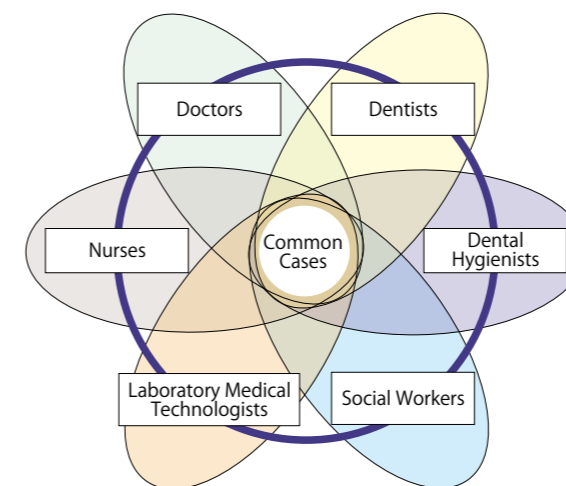
Progress of the Computer Assisted Simulation for Medical and Dental Practice Training - Computer Assisted Simulation Promoting Clinical Inference, Decision-making, Problem Solving, and Cooperation Ability of Health Professional. -

Principal Investigator: Atsuhiro KINOSHITA, DDS, PhD (Professor, School of Oral Health Care Sciences)

As baccalaureate abilities of the health professional (medical doctors, dentists, nurses, laboratory medical technologist, dental hygienists, social workers), clinical inference, decision-making, problem solving, and cooperation ability to implement the team medical approach are very important as well as necessary specialized knowledge and skills in medical / health activities. In order to acquire these abilities, clinical practice on real patients is the most effective way, but the number of the experienced cases for the students in clinical practice is not enough.

The aim of this program is to develop the education system to a more common system which will be useful and effective for the students in all schools in health professional fields, and utilized from anywhere at any time. We also develop the common materials which is commonly useful and effective in all fields of the health professionals such as first aid cases, emergency medical care, hygiene management, and so on. Moreover, we also develop the simulation materials which expose the students to the other health professionals' way of clinical inference, decision-making, problem solving.

We have originally developed and utilized Computer Assisted Education System on Clinical Simulation for Medical and Dental Practice Training in each schools in our university.



All medical professionals should implement the team approach understanding the other field professionals' way of clinical inference, decision-making, problem solving.



Students are exposed to the cases which must be experienced in the all health professionals.



## The Plan of the Construction of the Career System of Nurses

### Development of "The Nursing IKASHIKA Career Path" ~ by Methods of Mentoring and PBL ~

Principal Investigator: Tomoko KOMUTA (Director of Nursing, University Hospital of Medicine)

This project is a new business of Ministry of Education, Culture, Sports, Science and Technology for the purpose of the construction of the career system of nurses and the university hospital of Department of Nursing and the School of Health Care Science cooperate and develop the clinical training methods and systems and aim at improving efficient and continual expertise by improving the education level of nurses and the basic education courses.

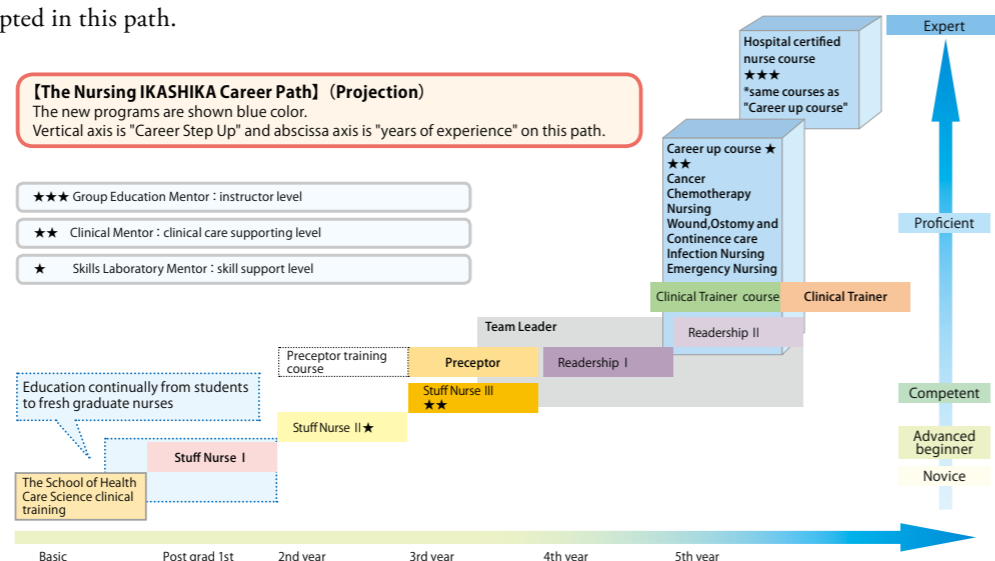
In this plan, it aims at helping each person accomplishment of their goals with making and proceeding original "The Nursing IKASHIKA Career Path" to support the career formation systematically and effectively and adapting methods of Mentoring and PBL (problem base learning). This career path is a coherent supporting system based on developing model for nurses from a student to reach an expert, and the clear arrival target is shown in each stage. By this practical use, it is possible to estimate students or staff and grasp the ability of career of the whole hospital and every unit.

Specifically, as shown in the following figure, there are three stages centered on basic education to staff nurse I, staff nurse II to leadership II and career up course and Mentoring education is adapted in this path.

In addition, personnel exchanges between the School of Health Care Science and the university hospital of Department of Nursing are emphasized in this plan. For example, the training system in hospital for teachers of nursing, the guidance of practice for students of nursing by the staff of Department of Nursing and the establishment of the nursing special consultation service in the hospital by the corporate operation will be promoted.

"The Career Support Center" becoming a key part of this project will be established becoming to accomplish these plans effectively. This center assumes roles such as education, research and the internship, and establishing and managing "The Nursing Skills Laboratory" (tentative name) is one of the concrete content of action. "The Nursing Skills Laboratory" is the facility of education aimed for improving skills of nurses and students and installed various simulators so it is available anytime to learn nursing skill freely. Additionally, The Portfolio will be introduced to assess individual skill.

Given these plans, we aim at nurturing nurses having technologically-sophisticated practical and high quality educated nursing abilities to consider, determine and execute themselves.



## Program for Enhancing Systematic Education in Graduate Schools

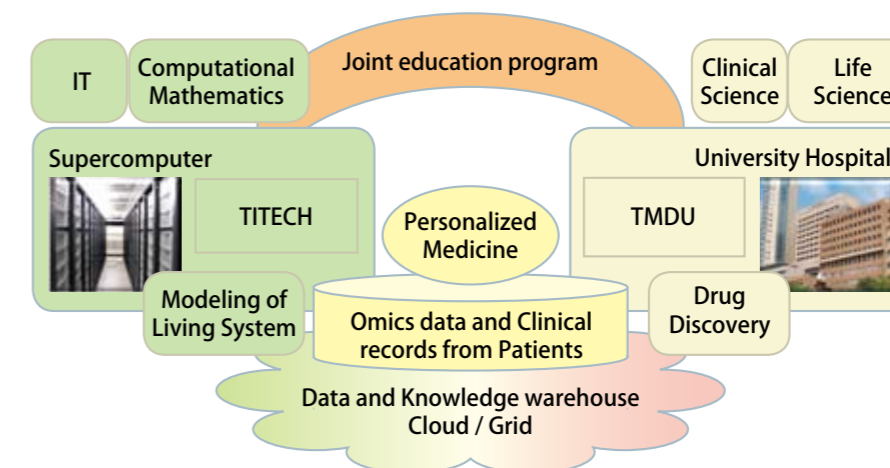
### TITECH-TMDU Joint Education Program for Biomedical Bioinformatics

Leader: Hiroshi TANAKA,DM,PhD(Dean,Biomedical Science PhD Program)

The next generation sequencing technology shall strongly forward a personalized medicine on the basis of not only SNPs but also genomic sequences of individual patients. That emerges the need for computational technologies of storing and processing enormous amount of data and information on personal omics consisting of genomics, epi-genomics, transcriptomics, proteomics, and metabolomics. The technologies and information will lead us to comprehensive understanding of living systems and development of new translational researches composed of 1) disease modeling with genome-wide omics information, 2) academia drug discovery for orphan diseases, and 3) preventive health care with personal genome information.

Tokyo Institute of Technology (TITECH) and TMDU have jointly started an education program aiming for production of human resources with double-major

minds and skills who can solve up-to-date biomedical issues with leading-edge computational technologies in personal genomics era. This program succeeds to the achievements of university alliances among TMDU, TITECH, Hitotsubashi University, and Tokyo University of Foreign Studies since 2001. This program provides an opportunity for faculties and students studying different fields to work together in order to develop advanced biomedical technologies that enable a healthy society without diseases. TMDU students shall learn by TITECH faculties about computational theory and skills to analyze and interpret the next generation sequence data by themselves. The faculties of both TMDU and TITECH together shall educate a TMDU student for a new leader to promote personalized medicine based on massive genomics information.



## Human Resource Development Plan for Cancer

### Training Program for Specialists in Cancer

Principal Investigator: Kikuo OHNO, MD, PhD (Dean, Graduate School of Medical and Dental Sciences)

Cancer has the highest mortality rate in Japan. It is imperative to build a new system where medical professionals work as a team to deal with cancer in a comprehensive manner; from diagnosis, to treatment, and to terminal care. We need to produce doctors who are specialized in highly sophisticated treatments as well as co-medical staff who are also experts in cancer treatment.

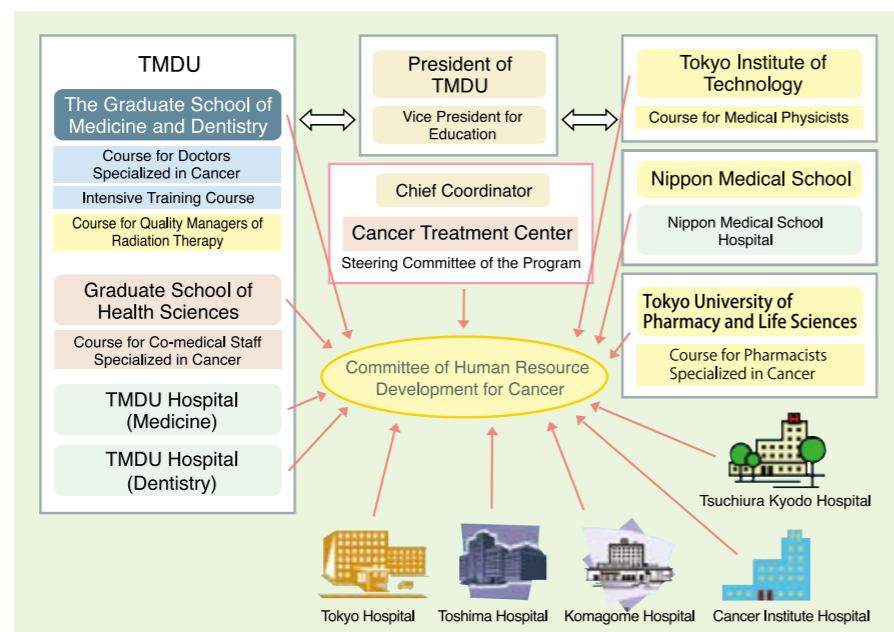
The unique aspect of this program is a network where various medical and educational institutions work together with the Cancer Treatment Center, which coordinates the whole program. The Graduate School of Medicine and Dentistry, Graduate School of Health Sciences, TMDU Hospitals, Nippon Medical School, Tokyo Institute of Technology, Tokyo University of Pharmacy and Life Sciences, Tokyo Metropolitan Komagome Hospital, the Cancer Institute Hospital, Tokyo Metropolitan Toshima Hospital, Tokyo Hospital, and Tsuchiura Kyodo Hospital are taking part in this program.

This training program has three courses. The first one is a training course for doctors, which is divided into three

specializations: radiation therapy, chemotherapy, and palliative therapy. The second course is designed for co-medical staff. This course offers two educational programs: one is aimed at nurses who are specialized in nursing care for cancer patients, and the other is for medical physicists and quality managers of radiation therapy. The third is an intensive training course for specialists who are already engaged in cancer treatment.

It is time to introduce a new mode of cancer treatment. From now on we need to take a more holistic approach toward cancer treatment rather than treat specific aspects of the disease. A team of specialized physicians and co-medical staff needs to collaborate to design treatment and care plans for an individual patient instead of supplying a patterned combination of a surgical operation with postoperative supplementary chemo/radiation. We are making every effort to develop a new educational system to foster qualified human resources who will be able to provide coherent and comprehensive treatment for cancer.

### Training Program for Specialists in Cancer



## Support Program for Contemporary Educational Needs

### Integration of Information and Communication Technology into Clinical Training

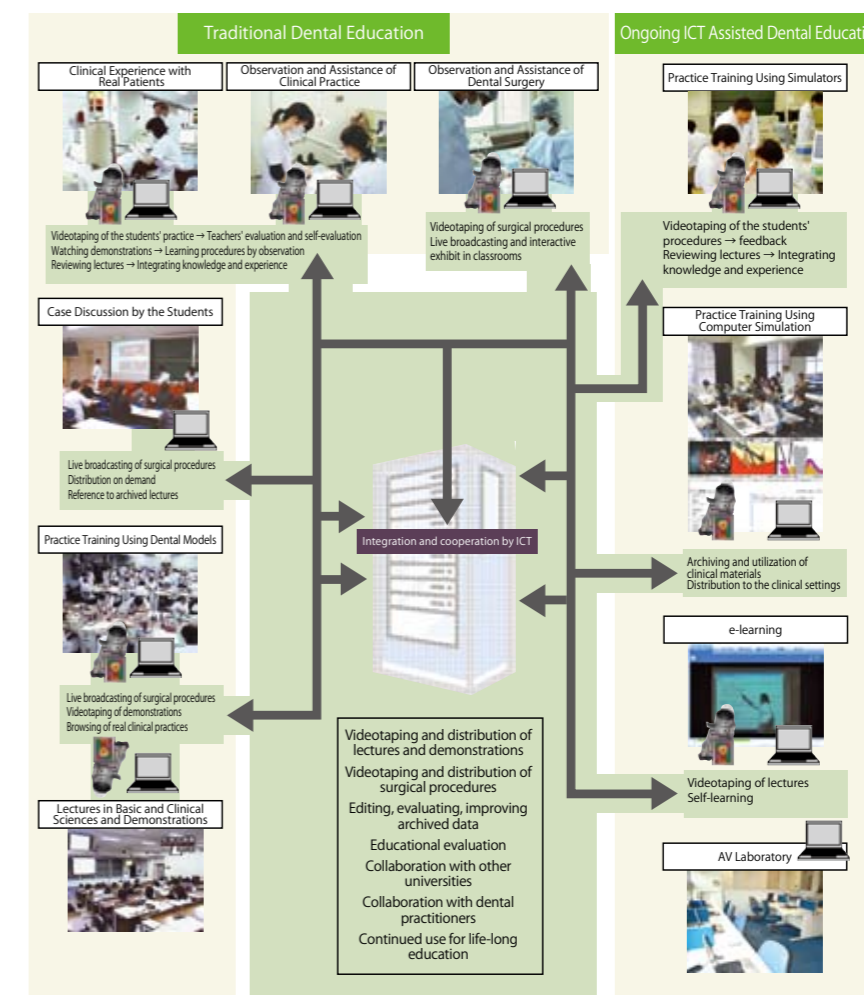
Principal Investigator: Junji TAGAMI, DDS, PhD (Dean, Faculty of Dentistry)

Since the School of Dentistry, TMDU, was founded in 1928, clinical experience with real patients and practice training using dental models have been key elements of clinical education. In later years, information and communication technology has been actively utilized, enabling our students to utilize computer-assisted simulation system, lectures on-demand, online assignments, and online examination.

The aim of this program is to integrate traditional educational methods and advanced information and communication technology, by which clinical training, practice training, and lectures will be able to be effectively interlinked.

The key focus of this program is to expand digital content. Employing automatic visual recording system, we are planning to establish a digital archive of (1) treatments and surgeries, (2) demonstrations of dental practices, (3) lectures, and (4) student trainings. Then we will launch an on-demand distribution system in order to incorporate these contents into clinical education, which the students will be able to use for self-evaluation and learning.

In mobilizing these high-end technologies, our ultimate goal is to establish new, more practical educational methods, closely linked with real clinical settings, by which we can produce fully skilled personnel who have an inquiring mind enabling them to learn about problems themselves as well as their solutions.



## University Hospitals Collaborative Project to Develop Advanced Medical Specialists

### Development of Advanced Medical Specialists through the Province-Urban University Hospital Network: Tailor-Made Medical Training Program to Acquire "Extra Merit"

Principal Investigator: Tohru SAKAMOTO, MD, PhD (Director, University Hospital of Medicine)

This project was launched in 2008 as one of the University Hospitals' Collaborative Projects to Develop Advanced Medical Specialists. Its aim is to build a collaborative network among medical institutes in the Tokyo area as well as understaffed provincial regions in order to produce advanced medical specialists and excellent general physicians.

Faculties of medicine of TMDU, Akita University, and Shimane University have produced numerous medical doctors who assume leading roles in community healthcare. This has been achieved through full coordination among a university hospital as an advanced medical institution and its affiliated hospitals in each region.

These three university hospitals already started an inter-university training program for post-graduate clinicians in 2007. We have extended this program, implementing new training programs for medical specialists and general practitioners.

The participants in these programs can choose (i) a three-month program or (ii) a one-year program to acquire extra merit as a specialist or a general practitioner. These three universities have graduate schools and admit working people as well. If participants wish to follow their academic interest in the fields they experience during their intern training, they can go to the graduate school to pursue their interest and get a degree.

As another advantage of this project, participants can have very different experiences in areas around Tokyo as well as in rural areas suffering from a shortage of medical staff. This wide-range of experiences should broaden their view of medicine.

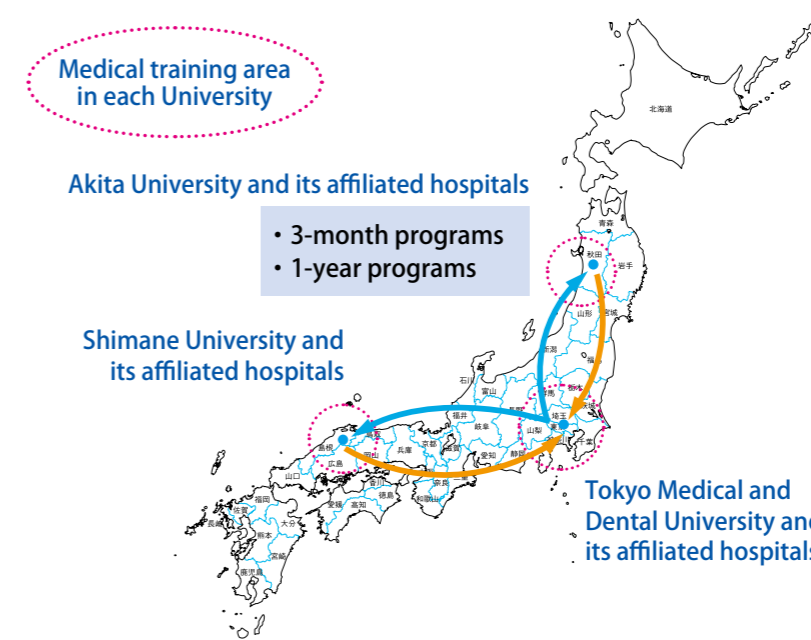
We have an effective strategy for the training: 2nd year interns and residents work under the guidance of skilled specialists in advanced medical treatment, and they are required to act as an instructor for 1st-year interns and medical students, through which experience they can strengthen the base of their own knowledge and skills.

E-Portfolio (electronic portfolio) is another feature of this project. We use TV conference, an online network to share information, and one common Web-based form is used for participants' assessment. These ensure consistency in training and assessment methods when participants change training sites. As a part of three-month or one-year training packages, registered participants are provided with travel expenses and accommodations.

Thus, this project enables the participants to set a clear goal and have a training program specifically designed for individual participants. It is hoped that this idea of 'tailor-made' medical training will open up a new era of medical training in Japan.

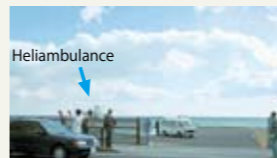
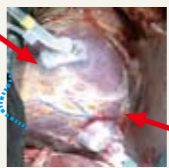


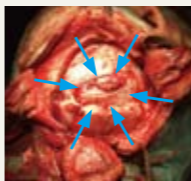
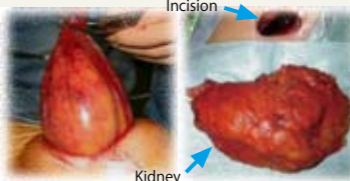
### Development of Advanced Medical Specialists through the Province-Urban University Hospital Network

-Tailor-Made Medical Training Program to Acquire "Extra Merit"-  
Tokyo Medical and Dental University · Akita University · Shimane University



### Examples of The Training Packages

**3-month programs** ←Registered participants are provided with travel expenses and accommodations.

<p><b>ER Training of Flying Doctor Services</b></p>  <p>Helicopter</p>	<p><b>Thoracic Cardiovascular surgery Training of Off-Pump Bypass Grafting</b></p>  <p>Traction of the mid of the side wall to upper right</p> <p>Apex is under the right side of sternum</p> <p>Expansion of the side wall without spoiling the heart function</p> <p>Traction of the CRUX to left below</p>
<p><b>Shimane University Training of Remote Medical Care</b></p> 	<p><b>Akita University Training of Home Medical Care</b></p> 
<p><b>1-year programs</b></p> <p><b>Neurosurgery</b></p> <p>Training of the operation of the severe head trauma</p>  <p>Brain trauma by axe</p>	<p><b>Urology</b></p> <p>Training of Portless Endoscopic Radical Nephrectomy</p> <p>The incision is smaller than the resected organ</p>  <p>Incision</p> <p>Kidney</p>

## Remedial Training Programs

### Remedial Training Program for Recruiting Women Doctors

Principle Investigator: Nobuo NARA, MD, PhD (Director, Center for Education Research in Medicine and Dentistry)

Recently, a shortage of doctors, especially, in OB-GYNE and pediatrics has become a social problem in Japan. The need for such doctors in these fields is an urgent issue nationwide. One of the most effective strategies to increase doctors in Japan is to recruit women doctors who left the clinics for delivery and child care to return to the clinic. The possible reasons why they might not come back to the clinics are the followings: first, they are afraid of returning to their clinics after such a long interval; second, they are not familiar with state-of-the-art medicine; and third, they feel that they still have to continue child care at home.

A remedial training program consisting of three courses; OB-GYNE, pediatrics, and internal medicine, has been planned and started to recruit women doctors to the clinics by enhancing their potential at Center for Education Research in Medicine and Dentistry, TMDU. This program is running since September 16, 2008 to March 31, 2011 entrusted by the Ministry of Education, Culture, Sports, Science and Technology-Japan. Women doctors who wish to attend the program are able to apply for the course on the

website at any time. The program consists of the following contents for two weeks: first, small seminar learning state-of-the-art medicine at TMDU; second, simulation-based learning in the clinical skills laboratory at TMDU; and third, ward training at Ome Municipal General Hospital. The trainees' knowledge and skills are finally evaluated by a multiple choice examination, portfolio, and OSCE. Portfolio contains the reflection and case records of ward training at Ome Municipal General Hospital. If the trainee passes, she is given the certificate of mastering the training course.

Up to now, 4 women doctors participated in OB-GYNE course, 5 in pediatrics, and 7 in internal medicine. The remedial training program recruited 16 women doctors to the clinics and improve the shortage of doctors. The ultimate goal of the program is to contribute to the national health promotion.

URL: <http://www.tmd.ac.jp/mdc/mama/gaiyou.html>



### Reeducation Program for Responding to Social Needs for Dental Hygienists and Dental Technologists

Principal Investigator: Yuzo TAKAGI, DDS, PhD (Director, Center for Education and Research in Oral Health Care)

This reeducation program is aimed at supporting the dental hygienists and dental technologists who are currently at work or planning to return to work to acquire the latest knowledge and techniques so as to actively and productively pursue their career.

We offer two courses — the dental hygienist course and the dental technologists course — both of which are designed to respond to the rapid changes in the healthcare environment. These programs introduce interdisciplinary approaches to the curriculum. Although two-year courses used to be prevalent in education for dental hygienists, three-year programs have been introduced in 2004, and since then they have been increasing. In order to fill the gap between these two educational systems, we offer a one-year supplementary program for those who already finished a two-year program. We also provide a program for dental technologists who have finished their job training programs two to ten years ago.

Our educational policy is to motivate the students to develop self-directed learning habits that would empower them to initiate independent learning of new concepts and skills, and integrate them with the knowledge and didactic skills provided in the program. Distance learning and e-learning programs are also available so that students can access them from their work sites or from home, thereby complementing and enhancing the knowledge and clinical techniques they acquired at the university.





### Remedial Training Program for Mid-Career Nurses Making Career Transitions

Principal Investigator: Akiko HONDA, RN, PhD (Professor, Home Care Nursing, Graduate School of Health Care Sciences)

The central aims of this program are to support mid-career nurses intending to further their career by improving their practical skills and to assist those who are returning to work as a nurse after a long hiatus. We also help those who want to pursue their career in a specialized field of nursing. In this remedial education program for nurses, they are expected to acquire self-directed learning habits that, we believe, will lead them to achieve self-fulfillment in their professional career.

We offer one generalist course and four specialist courses, responding to the needs of nurses making career transitions. In specialist courses we have four divisions: home care nursing, midwifery, research, and education. Participants can take some courses for undergraduate and graduate students at TMDU as well as courses offered in this program.

We hope this program will provide mid-career nurses with opportunities for lifelong learning. We issue certificates to the participants of this training program, which will help them obtain other professional qualifications certified by other official bodies.

The educational goals of this program are:

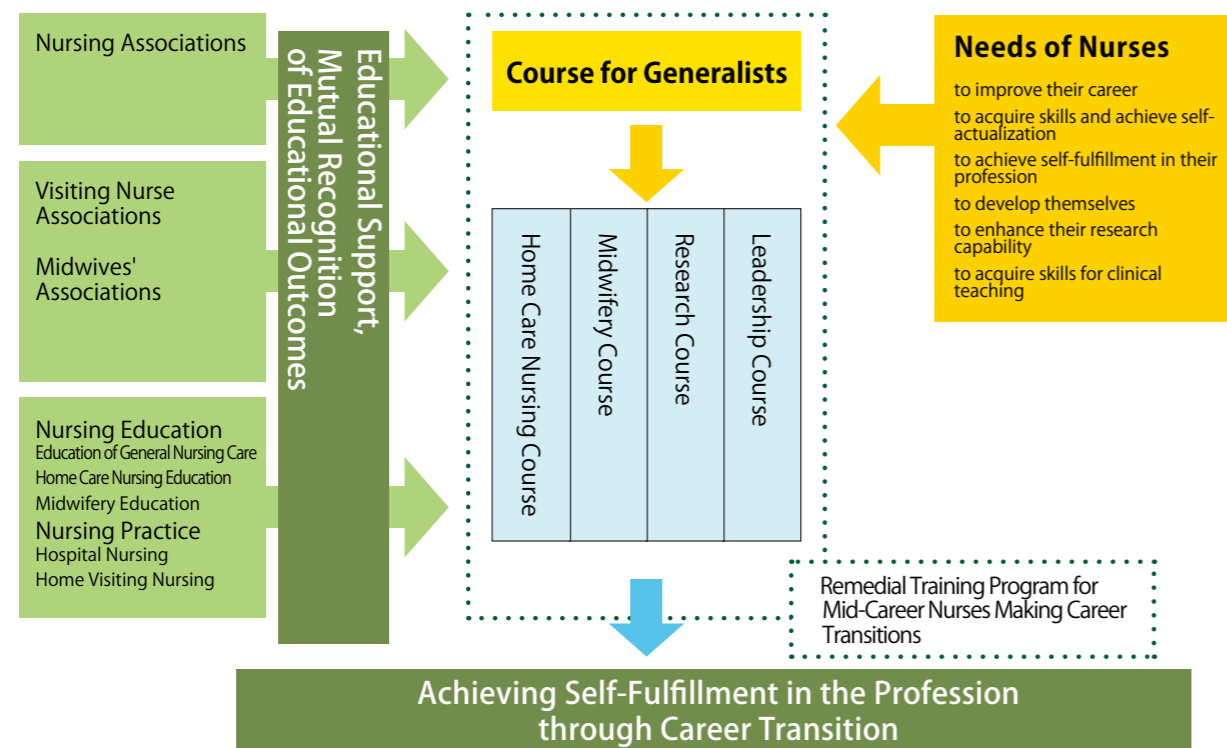
"To encourage mid-career nurses to pursue a more rewarding career in the medical profession"

"To help mid-career nurses acquire new skills and qualifications to develop their career".

At the end of this program, the participants will:

- ① Have their own initiative to develop themselves in their profession
- ② Have renewed practical skills and management ability in their specialized field of nursing
- ③ Have leadership skills and an inquiring mind for further development of nursing science.

#### Overview of the Program



### Support Programs for Improving Graduate School Education

#### Global Linkage Program between University and Industry

Principal Investigator: Hiroshi TANAKA, DM, PhD (Dean, Biomedical Science PhD Program)

For our Biomedical Science PhD Program, we have designed and implemented an educational program which fosters human resources who can promote practical studies in fusing the interdisciplinary fields related to complex disease research with leading-edge life science. Soon after its launch, our program, "International Educational Program in Biosciences", was granted support from the Ministry of Education, Culture, Sports, Science and Technology as part of their Attractive Education in Graduate Schools program. By introducing an international viewpoint into our graduate school education, we have succeeded in producing a new type of researcher who can show initiative in discussions with overseas scientists in English.

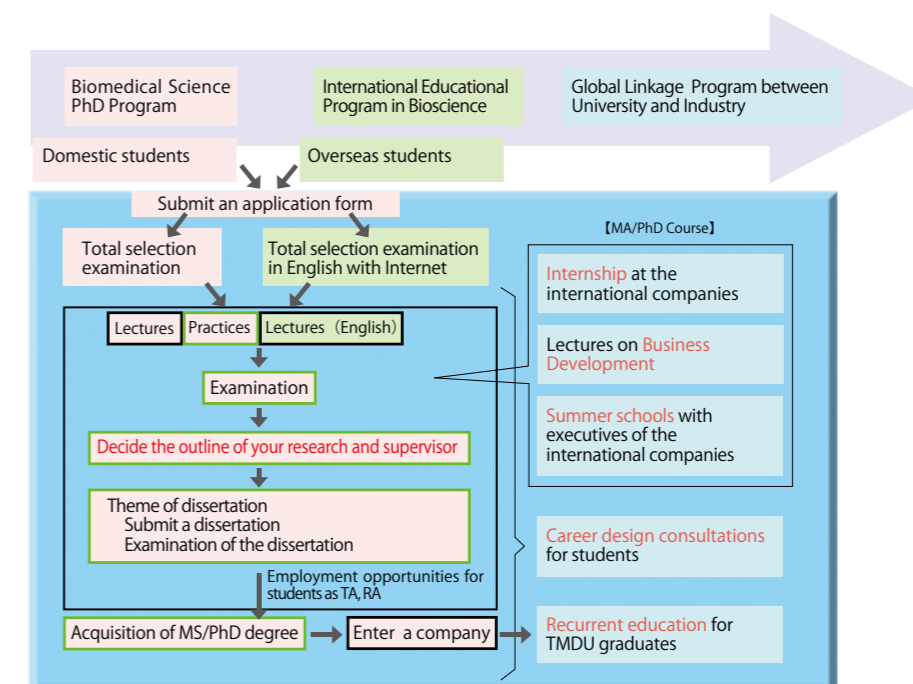
Now, our newly started program, "Global Linkage Program between University and Industry", takes the next step. The chief aim of the program is to help the students to develop their communication skills pursue their career paths in the international community. While strengthening the foundation of basic competence nurtured by the former

program, the students can develop their application skills in this program.

This program is more case and experience oriented than the former program which mainly consisted of classroom lectures and seminars. The students can have internship opportunities at international business firms or international research institutes to see real-world examples and global trends and envisage future needs. The students are also provided with specialist consultations which support them to define their career objectives, which can help maximize the educational effects of internships. We also collaborate with international companies and open a school where our students and faculty study business strategies and hone their communication skills.

Thus our program aims to enhance linkages between the graduate school and international business arena while supporting our students to contribute to the global community.

#### Graduate School Education Meets the Needs of International Society



### Educational Program for Specialists Interfacing between Advanced Engineering and Medical / Dental Practice

Principal Investigator: Junji TAGAMI, DDS, PhD (Dean, Graduate School of Medical and Dental Sciences)

Life science and engineering in medicine/dentistry have been the two principal fields for research and education at graduate schools of medicine and dentistry. Recently, however, people in such schools tend to focus on research in life science because its advancement invariably leads to marked progress in clinical medicine. Developments in life science have also greatly contributed to the improvement of surgical therapeutics and dental treatments. Research in engineering is, however, essential for advancement of clinical practice in surgery and clinical dentistry because it heavily depends on sophisticated biomaterials and medical equipments.

The main aim of this project is to reform the educational program in the field of engineering in medicine/dentistry in order to produce specialists who can serve as an interface between advanced engineering and clinical practice. Interdisciplinary educational programs have been hitherto offered for the students majoring in science and technology to acquire the knowledge of medicine and dentistry, but no systematic educational program in engineering and technology has been available to doctors and dentists. The unique aspect of this program is that it is aimed at offering to medical doctors and dentists, and this original program can be offered by only TMDU with its affiliated research institution ; The Institute of Biomaterials and Bioengineering.

### Special Coordination Funds for Promoting Science and Technology

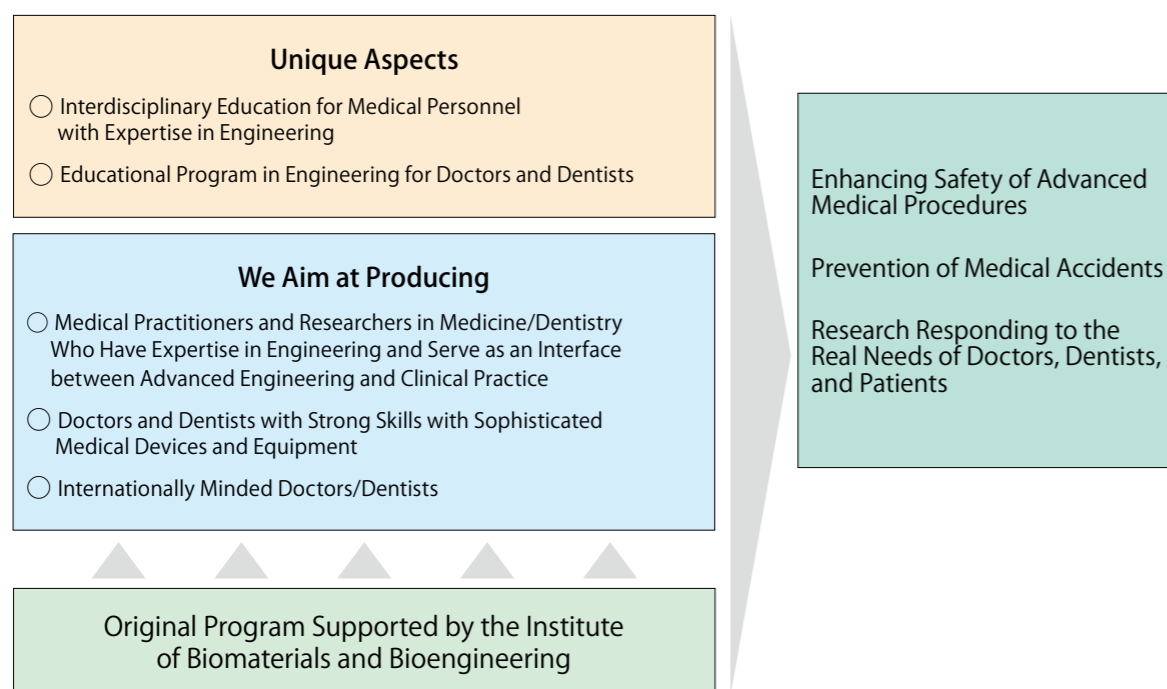
#### International Collaboration for Development of a New Drug Against Avian Influenza (JST)

Principal Investigator: Masatoshi HAGIWARA, MD, PhD (Professor, Functional Genomics, School of Biomedical Science)

Avian influenza virus is an influenza A virus of H5N1 subtype that occurs mainly in birds, is highly contagious among birds, and can be deadly to them. H5N1 virus does not usually infect people, but infections with these viruses have occurred in humans. Most of these cases have resulted from people having direct or close contact with H5N1-infected poultry or H5N1-contaminated surfaces. More than 100 people died in Vietnam with H5N1 infection, and Vietnam and Indonesia are the most infected areas of H5N1 in the world. The H5N1 virus that has caused human illness and death in Asia is resistant to amantadine and rimantadine, two antiviral medications commonly used for influenza. Hagiwara's group in Tokyo Medical and Dental

University in Japan recently identified a protein kinase which is required for RNA virus proliferation and found synthetic chemical inhibitors of the kinase can suppress proliferation of several RNA viruses including influenza virus (The patent was filed in March 2008). Therefore, we will develop a new anti-virus drug for patients who suffer avian influenza in cooperation of Vietnam and Japanese scientists. Through the international cooperation, we will accelerate the drug development, transfer the knowledge and technology required for pharmaceutical industries from Japan to Vietnam, and grow up scientists who can develop new drugs with original ideas and technology in Vietnam.

#### Educational Program for Specialists Interfacing between Advanced Engineering and Medical Practice



Members of international collaboration  
 Japanese side:  
 Masatoshi Hagiwara (Professor, Tokyo and Dental University)  
 Nobutoshi Ito (Professor, Tokyo and Dental University)  
 Takamitsu Hosoya (Professor, Tokyo and Dental University)  
 Yukiko Okuno (Assistant Professor, Tokyo and Dental University)  
 Vietnam side:  
 Le Van Phung (Director, National Institute for Control of Vaccine and Biologicals)  
 Loi Do Doan (Vice Director, Bach Mai Hospital & Hanoi Medical University)

### Innovative Support for Female Researchers

Principal Investigator: Takashi OHYAMA, DDS, Ph.D., President

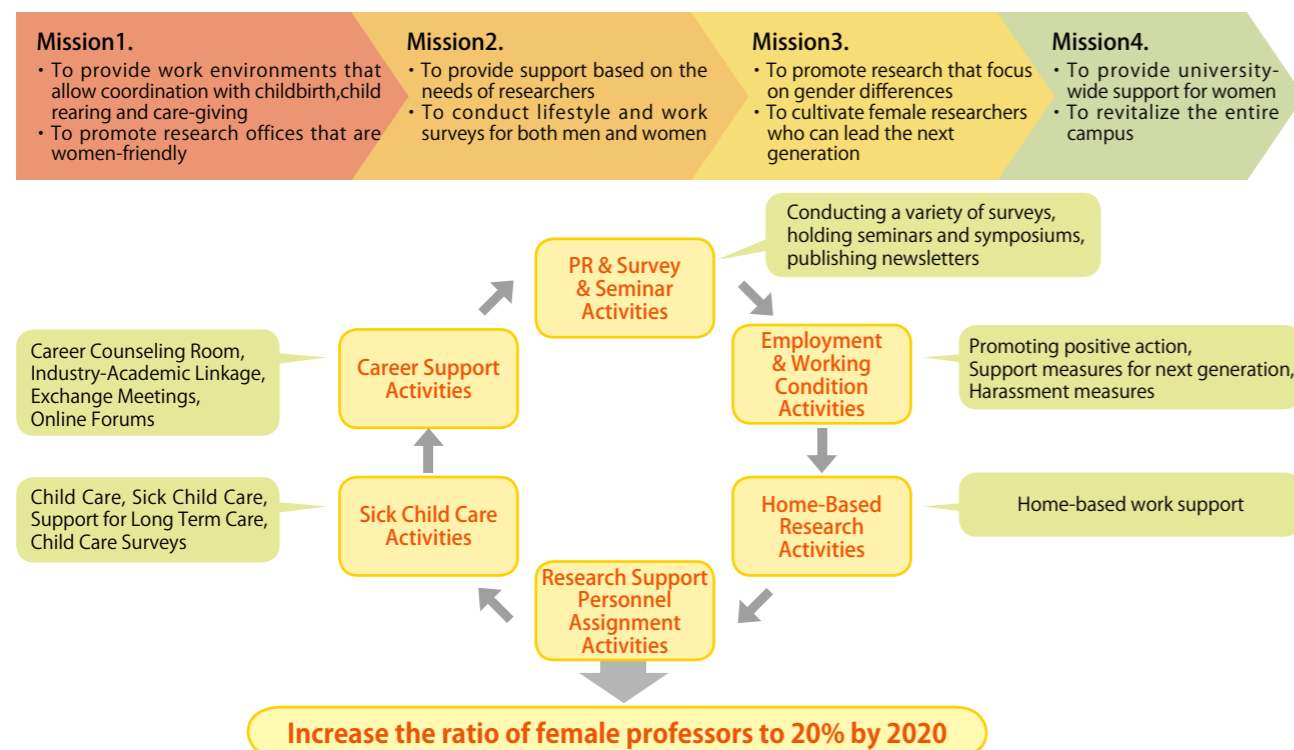
The activities concerning "innovative support for female researchers" that we adopted in FY2008 were developed using Special Coordination Funds for Promoting Science and Technology provided by Japan's Ministry of Education, Culture, Sports, Science and Technology (MEXT) under the heading "support model activities for female researchers" and are now in their second year.

Starting from this fiscal year, we intend to extend the scope of these activities to include the entire school by widening their application to the Graduate School of Medical and Dental Studies (including the Faculty of Medicine and the Faculty of Dentistry) in addition to the three departments covered in the previous fiscal year (Graduate School of Biomedical Science, the Medical Research Institute and the Institute of Biomaterials and Bioengineering). As our agenda is to involve the entire university, the deans for the Faculty of Medicine and Faculty of Dentistry are participating as members of the executive council. Additionally, we plan to hold a Female Researchers Support Measures Conference with representatives from each department in order to establish 11 different types of activities including: employment, working condition and

evaluation activities, home-based research activities, research support personnel assignment activities, child care activities, career support activities such as exchange meetings, role model training, and career counseling, awareness activities, research and enlightenment activities that form a basis for gender-specific medical studies, and PR activities. Members from the university will be assigned as leaders for each of these activities. Support Measures Committee for Female Researchers will be formed via the Support Office for Female Researchers and Support Measures Conference for Female Researchers for creating workplace environments that optimize the abilities of a diverse range of female researchers and carrying out activities based on organized cooperation between these two parties.

These activities are designed to be implemented as a model for developmental activities over a three-year period, and will serve as a challenge to determine the type of support this university is able to offer female researchers. While developing the activities into the next fiscal year (the final year for these activities), we intend to create a platform that will enable us to continue their implementation in the future.

#### Activities of Support Measures Committee for Female Researchers



### Medical Top Track (MTT) Program

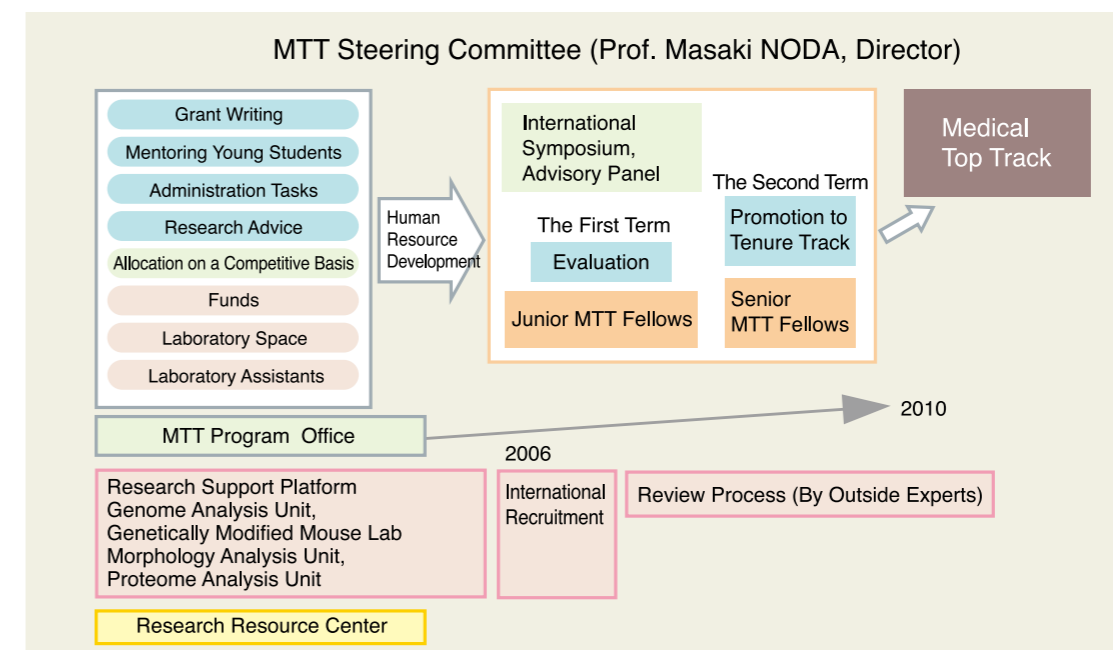
Principal Investigator: Shigetaka KITAJIMA, MD, PhD (Director, Medical Research Institute)

The Medical Top Track (MTT) program is designed to establish a system where we nurture young investigators in medical science. Within this program we will recruit MTT Fellows based on a competitive application process which examines their scientific accomplishments as well as their performance in English interviews regarding the scope of their future research. We have invited outside experts as well as experienced researchers to create a promotion committee for this program. This committee is also in charge for selection of MTT Fellows. The candidates should have up to ten years of postdoctoral research experience. Strong candidates should have the ability to raise funds to conduct pioneering research and possess a strong motivation to pursue a career in scientific research.

MTT Fellows will be provided (on a competitive basis) with (1) funds to start the fellowship, (2) laboratory space, and (3) postdoctoral laboratory assistants to help them. In the first three years of their fellowship they are referred to as Junior MTT Fellows and should be committed to their research activities, with necessary support offered from the Research Support Platform and the Research Resource Center affiliated with the Medical Research Institute.

While continuing to engage in their research they can have opportunities to participate in a wide range of experiences, which will be required to become future leading scientists. Senior MTT Fellows also mentor their younger colleagues. A grant writing course is offered for them to grade up their skill in writing grant applications. They will also experience management administration tasks in their laboratories. The Senior MTT Fellows who have produced outstanding achievements can be promoted to a tenure track faculty position at our institute or outside our university.

Thus, MTT Fellowship is a preliminary step to be appointed as an assistant or associate professor. One of the objectives of this program is to enhance the mobility of research personnel and to establish a new tenure system in the medical science community in Japan. We are aiming to create a new, competitive model where young, talented researchers are encouraged to take an additional challenge.



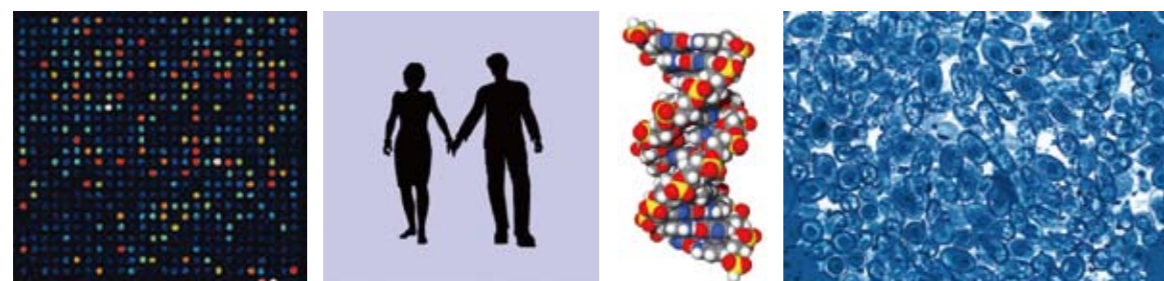
### Educational Program for Biomedical Omics Information Scientists

Principal Investigator: Hiroshi TANAKA, DM, PhD (Dean, Biomedical Science PhD Program)

As the Human Genome Project showed, advancements in the information science and computational technology are vital for the development of life science. Bioinformatics is a new field of research that integrates life science and information science. At the moment, however, there are not enough researchers actively working for the development of this area. Now that the Human Genome Project has been completed, diverse pioneering investigations have been pursued, such as genome-wide profiling of gene expression processes with microarray techniques and comprehensive analysis of cell proteins with mass spectrometers. Life science is now expanding its field, encompassing holistic information to understand complex life systems—this broad discipline is termed *omics* and its application to clinical medicine is anticipated greatly.

In 2003 TMDU launched a five-year project to offer study opportunities to medical scientists for learning both life science and information science. This Educational Program for Biomedical Omics Information Scientists has been granted funding as a project to promote science and technology from the Ministry of Education, Culture, Sports, Science and Technology. The main goal of this program is to nurture doctors and medical personnel who can integrate life science and information science into practical applications in medicine and contribute to the further development of biomedical omics.

This educational program is also aimed at bioinformaticians who have been active in their field and are planning to diversify their activities into medical science. A special course is offered for them to acquire basic and practical knowledge in medicine and to learn methods of information management in omics. We believe that this program can qualify students to open up a new frontier in biomedical omics.



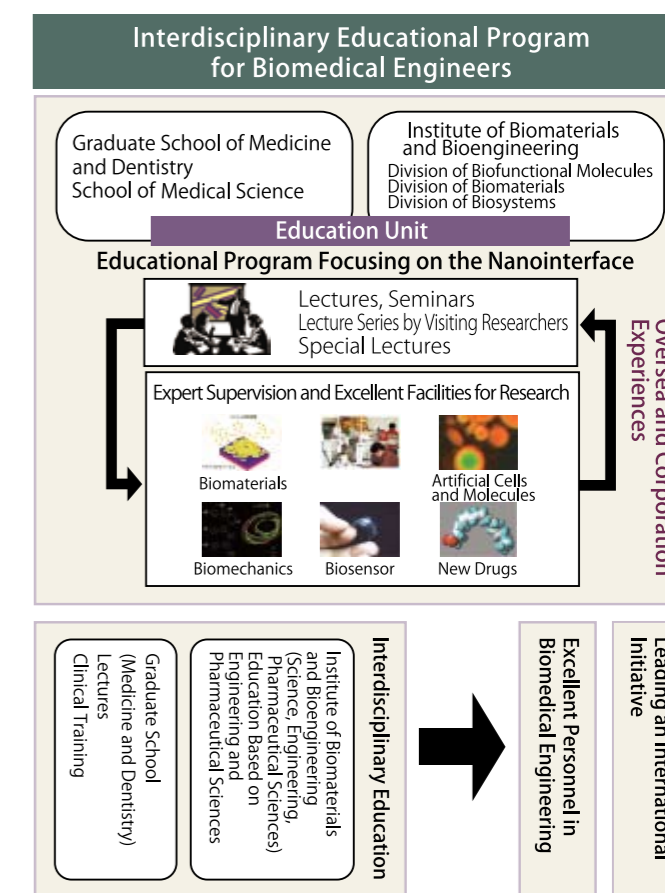
### Interdisciplinary Educational Program for Biomedical Engineers

Principal Investigator: Kimihiro YAMASHITA, PhD (Director, Institute of Biomaterials and Bioengineering)

The objective of this program is to produce biomedical engineers who are sufficiently knowledgeable about basic science and highly skilled in applicable techniques, and able to contribute to the development of nanotechnology and multidisciplinary research related to nanotechnology. The program is aimed at students of the TMDU Graduate School of Medicine and Dentistry, the Biomedical Science PhD Program of TMDU, and students sent to our institute by business companies. Our ultimate goal is to supply excellent personnel to the academic and industrial arenas who can exercise initiative for technological progress.

The key technology of our research and education is focused on the nanointerface, that is, the technology to control the interface reaction at the nanometer scale. By building a close linkage between basic science and technology, we nurture researchers who can develop new and highly functional biomaterials, materials for drug delivery system, and medical devices/systems for diagnosis.

We offer courses in science, engineering, and pharmacy as well as medicine and dentistry. By inviting lecturers from abroad and sending our students to overseas institutions and business companies, we also encourage the students to expand their experience and deepen their understanding of the global science community.



## Science and Technology Research Partnership for Sustainable Development

### Studies of Anti-viral and Anti-parasitic Compounds from Selected Ghanaian Medicinal Plants

Principal Investigator: Shoji YAMAOKA, Professor of Department of Virology, Graduate School, Tokyo Medical and Dental University

#### Summary

Tokyo Medical and Dental University (TMDU) established in 2008 Research Center for Infectious Diseases at Noguchi Memorial Institute for Medical Research (NMIMR) in Ghana, West Africa, dispatched two researchers to NMIMR and implemented research collaborations on virology and parasitology. We are now starting new research projects, supported by Japan Science and Technology Agency (JST) and Japan International Cooperation Agency (JICA), on Ghanaian medicinal plants whose components are effective in the control of viral or parasitic infections. Based on request from the Ghanaian side, the research collaborations have been planned by the

groups of Prof. Yamaoka (Virology, TMDU), Prof. Kannagi (Virology, TMDU), Prof. Ohta (Parasitology, TMDU), Prof. Shoyama (Pharmacology, Nagasaki International University), Prof. Nyarko (Toxicology, NMIMR) and Prof. Okine (Biochemistry, Centre for Scientific Research into Plant Medicine). The geographical and financial situations in Ghana have not allowed Ghanaian people easy access to modern medicine, and instead, they rely on traditional herbal medicine so that the Ghanaian government expresses a great deal of expectations on the projects. Ghana is well-known for its production of cacao beans, in which we have recently found promising inhibitory activity on virus replication.



Meeting at NMIMR.



Prof. Nyarko (centre) and Prof. Okine (right).



A pod of cacao (upper) and beans inside (lower).

## Exchange Program for East Asian Young Researchers

### Young Researchers' Project in Medicine and Dentistry - Establishing a Network of Health Care Professionals in Southeast Asia -

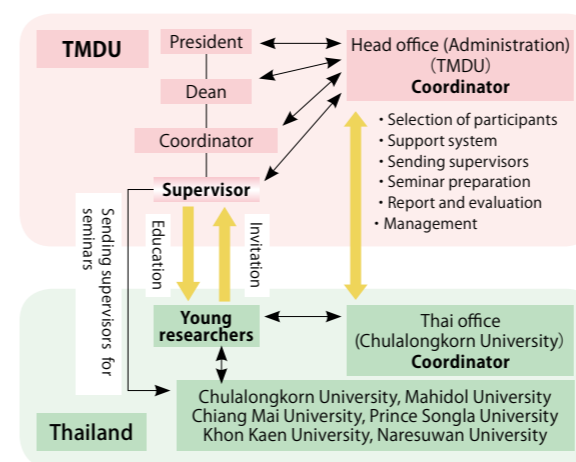
Principle Investigator: Junji TAGAMI, DDS, PhD (Dean, Faculty of Dentistry)

In 2009, we implemented a new international project with the support of the Japan Society for the Promotion of Sciences. The title of this project is the "Young Researchers' Project in Medicine and Dentistry -Establishing a Network of Health Care Professionals in Southeast Asia -". Overall the goal of the project is to improve young researchers' knowledge and ability in the field of medicine and dentistry for the purpose of establishing a network of health care professionals in Southeast Asia.

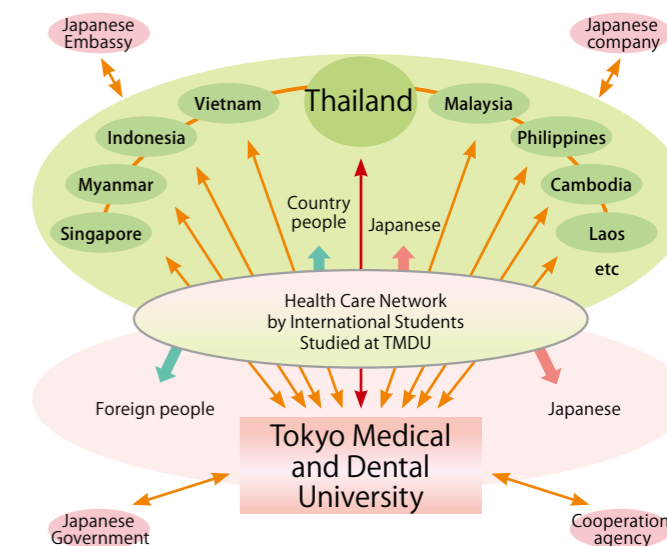
This year, we commenced the project with a focus on Japan and Thailand in the field of dentistry. The participants for the project were mainly previous international students who studied at Tokyo Medical and Dental University (TMDU) and received PhD degree within the previous 6 years. They are now the academic staff of Chulalongkorn University, Mahidol University, Chiang Mai University, Prince Songkla University, Khon Kaen University and Naresuan University in Thailand. These universities have academic affiliation agreement with TMDU.

From April to September, 13 young researchers came to TMDU and studied for 14-90 days under TMDU supervisors. In June, four professors visited Thailand and give lectures targeted for young researchers in the seminars. In the future, we are planning to expand the targeted countries in Southeast Asia and include medical disciplines in this project.

#### Outline of the project



#### Health care network in Southeast Asia



## JSPS A3 Foresight Program

### Epigenetic Signatures in Gastric Carcinogenesis

Principal Investigator: Yasuhito YUASA, Professor, Department of Molecular Oncology, Graduate School of Medical and Dental Sciences

Deng Dajun,  
Professor and Director, Department of Aetiology, Beijing Cancer Hospital/Institute, Peking University School of Oncology, China

Kim Woo Ho, Professor,  
Department of Pathology, Seoul National University College of Medicine, Korea

Based on an agreement among Japan Society for the Promotion of Science (JSPS), Korea National Research Foundation (KNRF) and National Natural Science Foundation of China (NSFC), this program supports joint research conducted by researchers of Japan, China and Korea. The three countries (A3) work as consortium in advancing leading-edge research with an aim to establishing a top-level research hub in Asia.

Gastric cancer (GC) is one of common cancers in Japan, China and Korea, and hence it is highly important to fight against GC by researchers from these three countries. As for the mechanisms underlying gastric carcinogenesis, epigenetic changes including DNA methylation are very important, because many genes have been shown to be frequently silenced by methylation in GCs. Epigenetic changes can be used as diagnostic markers. Moreover, one characteristic nature of epigenetic changes are their reversibility, and thus researches on epigenetic changes in GC may also lead to new preventive and therapeutic measures against GC. Thus, the objectives of the present project are to explore the role of epigenetic pathway in gastric carcinogenesis and its application in molecular sub-typing of GC through the collaboration of researchers of the three countries. The other important objective is to educate young researchers in the three countries.



Kickoff meeting held at TMDU in August, 2009



## Program of Founding Research Centers for Emerging and Reemerging Infectious Diseases

### Ghana-Tokyo Medical and Dental University Research Center

Principal Investigator: Nobuo OHTA, MD, PhD (Professor, Section of Environmental Parasitology, Graduate School of Medical and Dental Sciences)

As a global problem to be solved in the 21st century, infectious diseases have attracted a large amount of attention from various fields such as medical, social, economic and political. We are still living in the era in which an infectious disease breakout can occur anytime and anywhere. We must be aware of the fact that breakouts of emerging infectious diseases that have never encountered in the past could possibly arise.

The most important factor for the success of disease control depends on collection of information. Many emerging and reemerging infectious diseases have occurred in developing countries; therefore, it is necessary to establish partnership with researchers in those areas for the real-time data analysis. "Program of Founding Research Centers for Emerging and Reemerging Infectious Diseases" by MEXT was launched in 2005 to meet the urgent need of Japanese society, to aim for strengthening the cooperation established between the researchers in Japan and developing countries, and to implement an initiative role in Japan for the purpose of infectious diseases research and control in the world.

Tokyo Medical and Dental University has promoted the project of research partnership on infectious diseases at Noguchi Memorial Institute for Medical Research (NMIMR), The University of Ghana, Ghana, in cooperation with

Research Institute of Tuberculosis, Japan anti-Tuberculosis Association. Infectious diseases are prevalent in West African sub-region where Ghana is located. Not only HIV/AIDS, tuberculosis and malaria, but also viral hemorrhage fever such as Lassa fever and Yellow fever, parasitic diseases such as African sleeping sickness and schistosomiasis, bacterial infections such as Buruli ulcer which is specific for West African sub-region remain to be serious problems in the public health. However, the medical research for those infectious diseases still remains to be developed. Considering those, it is required to build up reliable epidemiological and informational network. There are still many problems in an applied medical field, for instance, performing proper protocols for treatment and developing new treatment. We assume that it is possible to promote not only the research but also the development of human resources and the countermeasure for diseases effectively by establishing a research center where we can perform on-site research of infectious diseases.

The Japanese government established NMIMR in Ghana named after Dr. Hideyo Noguchi. NMIMR is one of the most excellent levels of research environments in West African sub-region; they have P3 level laboratory facilities and an experimental animal center. Two researchers from Tokyo Medical and Dental University are dispatched to NMIMR, and we have started research for viral and parasitic infectious diseases on the partnership with the researchers at Noguchi Institute. In August of 2009, the launch ceremony was performed inviting representatives of both Japanese and Ghanaian governments. The year of 2008 was 80th anniversary after Dr. Noguchi succumbed to Yellow Fever in Ghana. It is important that Japanese researchers stay on site and promote leading-edge study of infectious diseases. There is also an enormous significance that we play a central role in facilitating to improve the research for infectious diseases, and foster young researchers in West African region.

### Launch ceremony of Ghana-TMDU collaboration project



Japan Science and Technology Agency Project to Develop "Innovative Seeds" Supporting Program for Creating University Ventures

Development of a Disposable, Magnetically Levitated Centrifugal Blood Pump

Principal Investigator: Setsuo TAKATANI, PhD, DMed (Professor, Department of Artificial Organs, Institute of Biomaterials and Bioengineering)

This project aims to form a venture company based on a magnetically levitated (mag-lev) disposable, biocompatible centrifugal pump technology that enables support of patient's circulation for at least one-month duration with minimum administration of anti-coagulants, to commercialize the mag-lev disposable centrifugal blood pump and to move forward the device to clinical applications. This project applies the magnetic levitation technology developed through collaboration between the two research institutes, Institute of Biomaterials and Bioengineering of Tokyo Medical and Dental University and Institute of Precision Engineering of Tokyo Institute of Technology, as a part of activities for Collaboration of Four Universities (Tokyo Medical and Dental University, Tokyo Institute of Technology, Hitotsubashi University and Tokyo Foreign

Language University) in Tokyo Area, to rotary blood pumps so as to improve durability and biocompatibility of the conventional centrifugal blood pumps with mechanical bearings and develop a mechanically non-contact, mag-lev centrifugal blood pump that enables safe and reliable support of circulation of patients with minimum usage of anti-coagulants. In order to achieve features of simplicity, reliability and low cost, pump system is separated into two parts, a disposable pump head and a re-usable mag-lev control and motor drive system as shown in Fig 1. After confirming the basic pump function and durability, electro-mechanical and physiological reliability of the device are evaluated in calves (Fig 2), and then clinical applications are sought through a venture company to contribute to society (Fig 3).

Fig 1 Disposable, magnetically levitated centrifugal blood pump system

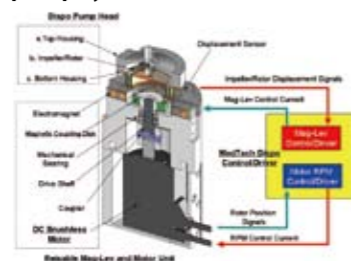
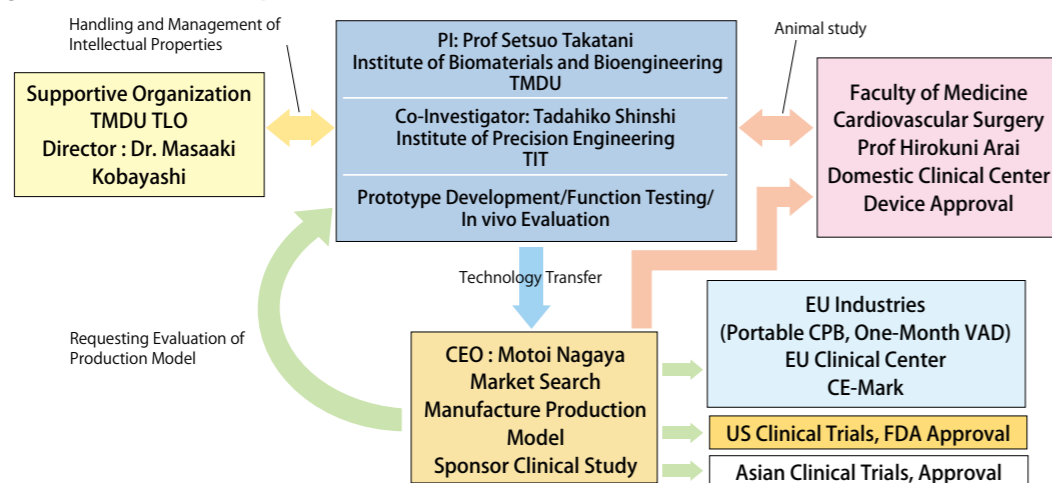


Fig 2 A calf implanted with a prototype pump system



Fig 3 Organization of R&D Group



Molecular Imaging Research Program

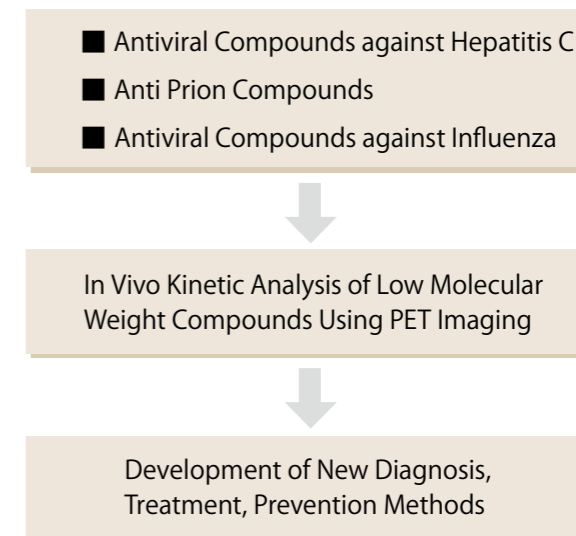
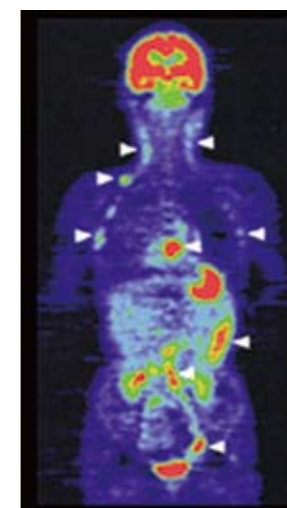
Imaging Research for New Drug Development to Treat Refractory Infectious Diseases

Principal Investigator: Masatoshi HAGIWARA, MD, PhD (Professor, Functional Genomics, School of Biomedical Science)

There are two million patients affected by hepatitis C, many of whom develop hepatic cirrhosis which eventually progresses to hepatoma. With no other treatment option available than interferon therapy, new drugs to eradicate the hepatitis C virus are keenly awaited. Prion diseases, including bovine spongiform encephalopathy, are also a cause of public anxiety because there is no effective treatment for them. Bird flu virus is another threat as it so frequently mutates that the vaccine is not always effective. The safety of Tamiflu, an oral drug for flu, has been called into question, and the development of a new drug which has a different site of action is much anticipated.

The public has high expectations for the development of new drugs to treat these refractory infectious diseases, diseases that have spurred great social anxiety. In order to fulfill those expectations, this program has set out to focus on hepatitis C, transmissible spongiform encephalopathy, and new forms of pandemic influenza. Our objective in this program is to develop lead compounds for new drugs.

As for hepatitis C, Dr. Hagiwara, the project leader, and his team are planning to synthesize new compounds that show remarkable effects in in-vitro evaluation as well as develop molecular imaging probes for them. As a part of this program, Dr. Kuwata and his team have already produced concrete achievements: they constructed a logical model of a new anti-prion compound based on the three-dimensional structure of the prion molecule—and it was proven effective in laboratory animals. We are also planning to design an agent against NP proteins which can lead to the development of a new drug effective against many types of influenza. Our ultimate goal is to accelerate drug discovery by the innovation such as synthesis of new molecular imaging probes with high speed c-methylation reaction and in vivo kinetic analysis with PET imaging, in cooperation with the Molecular Imaging Research Program, Kobe MI R&D Center, RIKEN.



## The Integrated Database Project

### Development of an Integrated Database in Biomedical Sciences

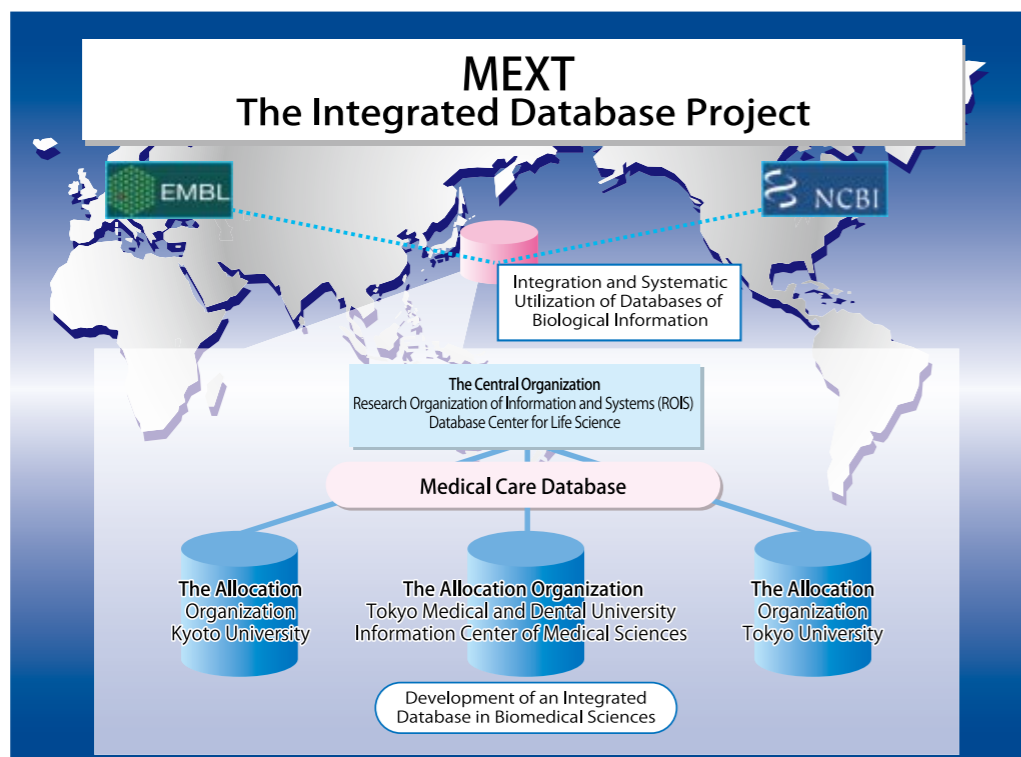
Principal Investigator: Hiroshi TANAKA, DM, PhD (Dean, Biomedical Science PhD Program)

Since the Human Genome Project was completed in 2003, an enormous amount of information in the field of biological science has been made available. In Japan, many universities and research institutes have created databases of molecular information. However, these projects are separately planned and carried out, and there is no national organization in Japan to integrate them into one central database like the National Center for Biotechnology Information (NCBI) in the US and the European Bioinformatics Institute (EBI).

In 2006 the Ministry of Education, Culture, Sports, Science and Technology (MEXT) launched the Integrated Database Project in order to establish a national, central organization to manage databases of a wide range of biological data, from molecular information to disease information. It was announced in 2007 that allocation organizations would be appointed to promote the integration of databases in collaboration with the central organization,

and as a result of open application, the Information Center of Medical Sciences, TMDU, was selected as one of three allocation organizations, along with the University of Tokyo and the University of Kyoto.

It is widely known that our Information Center of Medical Sciences has already started a project to build the "Clinical Omics Database Based on Systems Pathobiology", commissioned and sponsored by MEXT, and in this project we are gathering clinical and omics data related to diseases. We are sure that we were appointed as an allocation organization to play an important role in the Integrated Database Project because of our achievements, especially our approach to viewing a disease as a system. Collaborating with the University of Osaka where data about intractable neurological diseases will be collected, we will make further efforts to establish the integrated database in biomedical sciences.



## JSPS Core to Core Program

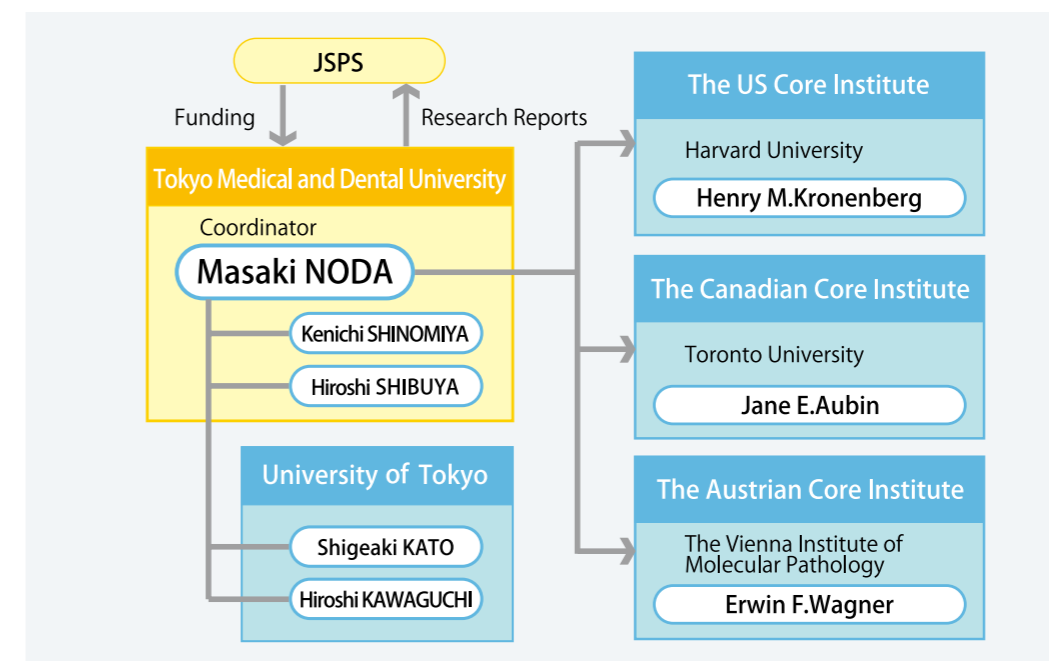
### Advanced Bone and Joint Science (ABJS)

Principal Investigator: Masaki NODA, MD, PhD (Professor, Medical Research Institute)

This project is funded by the Japan Society for the Promotion of Science which has initiated a program for the purpose of building and expanding a cooperative international framework among universities and research institutions in Japan and 15 other technologically advanced countries. In 2004 and 2005, we carried out our project as one of the "Integrated Action Initiatives" and based on the results we achieved, our project was upgraded to a "Strategic Research Networks" project, aiming at managing a long-term network of researchers and institutions. According to the project plan, we are working to promote international collaboration in the field of advanced biomedical science and also to help young researchers build cooperative networks across borders. The main focus of our research is advanced bone and joint science (ABJS). The chief aim of

this project is to establish an international research hub to carry out pioneering research in the molecular pathology of bone and joint diseases. Along with TMDU, Harvard University in the US, Toronto University in Canada, the Vienna Institute of Molecular Pathology in Austria, and the Institute of Molecular and Cellular Biosciences and the Graduate School of Medicine of the University of Tokyo in Japan are taking part in this project. We have already hosted more than 10 ABJS Forums, more than 15 Young Investigator Net meetings, and international symposiums. Research collaboration, development of young researchers, and symposiums are main activities within this project, and through these activities, we will make a significant contribution to the advancement of bone and joint science.

### Advanced Bone and Joint Science (ABJS)





## Program for Accelerating Internationalization of Higher (University) Education

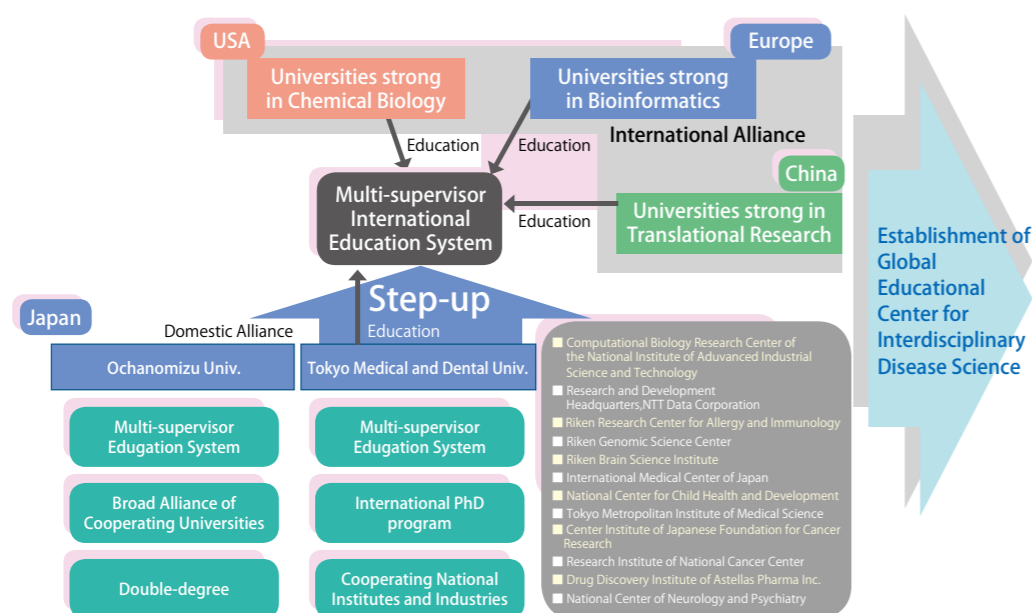
### International Educational Program for Interdisciplinary Disease Science

Principal Investigator: Hiroshi TANAKA, DM, PhD (Dean, Biomedical Science PhD Program)

Graduate School of Biomedical Science, Biomedical Science PhD Program was established upon the philosophy of interdisciplinary disease science. The program is in alliance with several governmental / private institutes of advanced science, enabling diverse, flexible curriculums from which students freely select the area of research. As the courses are also offered in English, students from abroad are able to complete their PhD without the knowledge of Japanese language. In this project, we are aiming to further develop the globalization of education and strengthen alliance with other universities. The project crosses over the boundaries of nations, and with the cooperation of faculty members overseas, we plan to establish a multi-supervisor international education system. Our goals are to form a global alliance of higher education institutes in Europe, the United States, and Asia (approximately 10 institutes including Heidelberg University, Peking Union University, China Medical University, Ochanomizu University, and our

own institute), to share the philosophy of interdisciplinary disease science upon which we reconstruct our educational systems, and to develop international cooperation education of the Double-degree Program (5-year PhD course), by the end of the three-year project. We intend to modify the system so that students are able to receive education from institutes overseas whilst enrolled in the master's program at our university, while maintaining the quality of our education up with the global standards. Our "Global Linkage Program between University and Industry" to enhance the linkages between the graduate school and international business, and active faculty interaction among universities in cooperation obtained through the International Educational Program for Interdisciplinary Disease Science, we aim to accelerate the globalization of our institute, leading up to the organization of the Double-degree program.

### International Cooperation for the Establishment of Multi-supervisor Education System



## Project for the Strategic Development of Industry-University-Government (I-U-G) Collaboration (Strategic Development Program)

### Promoting International Industry-University-Government (I-U-G) Collaborative Activities

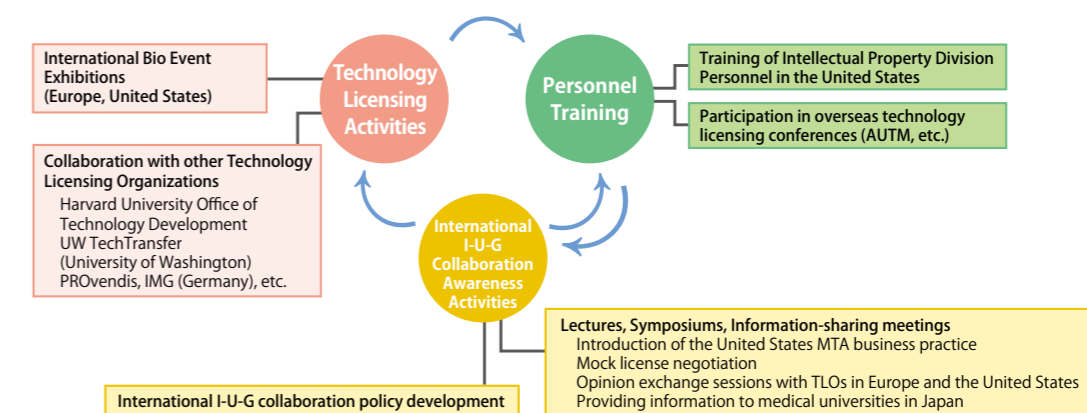
Principal Investigator: Masaaki KOBAYASHI, PhD (Director, Intellectual Property Division, Technology Licensing Organization)

The aim of this project is to support various proactive and distinctive activities to continually develop intellectual property strategies for universities and other organizations that are the driving force behind innovation creation, and to improve the quality of I-U-G collaborative activities overall. The project is devoted to strengthening international I-U-G collaboration frameworks through promoting international rights acquisition of basic patents, expanding cooperative research and entrusted research activities involving overseas corporations, and training and retaining qualified intellectual property personnel.

The Intellectual Property Division at Tokyo Medical and Dental University was established in September 2003, and with the privatization of national universities in April 2004, began applying for patents for inventions by university researchers as properties of the university. Furthermore, the Technology Licensing Organization (TLO) was established in August 2004 and began licensing technologies to enterprises. In March 2008, the Technology Licensing Organization obtained TLO certification from the Ministry of Education, Culture, Sports, Science and Technology and the Ministry of Economy, Trade and Industry, and plans to conduct further public relations activities to produce

more technology licensing results. The International I-U-G Collaboration Department was established in May 2007 and undertakes the active licensing of technology to overseas entities through activities such as partnership negotiations with TLOs in the United States and other countries, and participation in technology licensing events in Europe.

As international I-U-G collaboration strategies, the organization is committed to the improvement of the quality of patent applications and to efficient technology licensing activities, as well as to the expansion of technology licensing through activities with TLOs in and out of Japan, in addition to the technology licensing activities revolving around our collaborative associates. Particularly with regard to overseas commitment, the department aims to develop a system that enables mutually efficient technology licensing through regular dialogues with multiple partnered overseas TLOs in regions such as Europe or the United States, where we have an understanding of the national conditions of each country. The fruits of these activities are widely shared with the society through training in workshops for mock license negotiations and publishing case studies concerning technology licensing.



## Special Funds for Education and Research

### Path.-Signaling Biology Research Program

Principal Investigator: Yoshio MIKI, MD, PhD (Professor, Medical Research Institute)

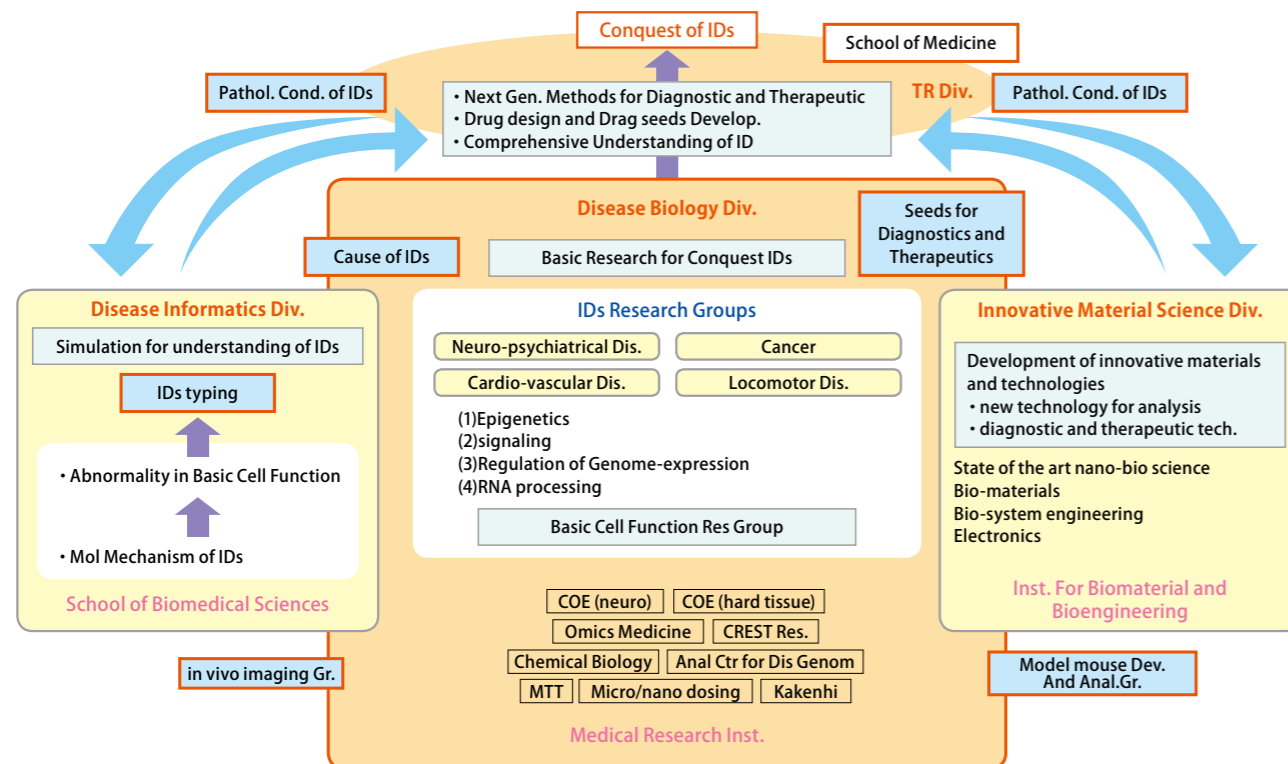
"A path-signaling biology research program" was initiated with the Special Funds for Education and Research of the Ministry of Education, Culture, Sports, Science and Technology. In this project, we define the signal abnormality in the body which is the beginning of pathological states as "pathogenic signaling" and it is abbreviated to path-signaling. We promote a disease signal research for conquering intractable diseases in medical science.

We use nervous, cardiovascular and locomotory diseases and cancers as models, and consolidate the basic and clinical research groups of TMDU and develop the biomedical science (path-signaling biology) based on the information of genome, transcriptome and phosphoproteome to elucidate a disease process (the molecular mechanism from normal state of cells and tissues to abnormal state, and further to onset of disease in a systemic manner).

We set up the new mass spectrometry with high performance, and collect information of phosphoproteins, and aim at the new disease understanding based on phosphoproteomics. This analysis system is installed in Advanced Technology Laboratory of Medical Research Institute and it is planned to have use for researchers of TMDU by employing a full-time engineer. In addition, we combine an intermolecular interaction analyzer with MS. It's very important for signal transduction research to observe changes comprehensively in binding-proteins due to a structural change.

In this program, we establish the experimental basis for biomedical science and the system to use this basis for researchers of TMDU. Using this system, the researchers may develop the biomedical study based on the signal information.

### Path.-Signaling Biology Research Program



### Establishment of the Brain and Vascular Regulation Center

Hidehiro MIZUSAWA, MD, PhD (Director, Center for Brain Integration Research)

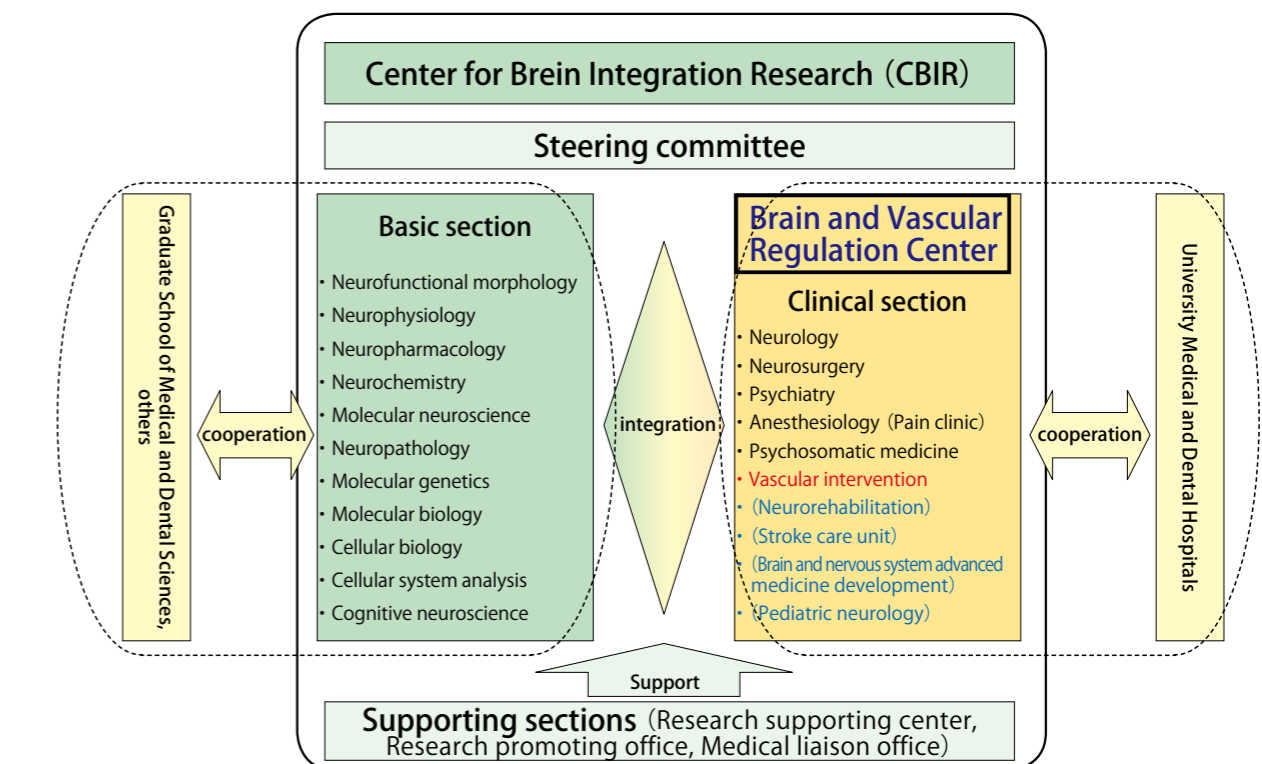
In modern societies like Japan, there are huge demands for high quality of life as well as various problems in development of mind from children to adults. Advanced countries have been overcoming infections, gastroenterological diseases, circulatory diseases, and even cancers. However, there has been a little achievement to treat diseases of the brain and nervous system, which is the key system for affluent life and could never be replaced although the other organs could.

In Tokyo Medical and Dental University (TMDU), there has been a long tradition of brain and nervous system science as proved by receiving a 5 years grant the 21st century COE (center of excellence) program "brain integration and its disorders" (2003-2007). TMDU established Center for Brain Integration Research (CBIR) in 2007 to follow the great success of the COE program. The mission of CBIR is to overcome diseases of the brain and nervous system by integration of basic and clinical neurosciences. In 2008, according to the request of TMDU the Ministry of Education, Science and Culture permitted to establish a new Department of Vascular Intervention and form the

Brain and Vascular Regulation Center as the clinical section of CBIR, to which Department of Neurology, Department of Neurosurgery, Department of Psychiatry, Department of Anesthesiology (pain clinic) as well as Department of Vascular Intervention belong.

In the near future, Department of Psychosomatic Medicine, Department of Neuro-rehabilitation, Department of Pediatric Neurology, Stroke Care Unit will be prepared and join the Brain and Vascular Regulation Center. Finally, the CBIR would be a unique center not only in Japan but also in the world for researches, education and clinicals of brain and nervous system disorders.

### Tokyo Medical and Dental University



### Research Project of Sensing Biology

Principal Investigator: Kohji MITSUBAYASHI, PhD  
(Professor, Department of Biomedical Devices and Instrumentation, Institute of Biomaterials and Bioengineering)

*In vivo* sensing and *in situ* imaging have an important role for cell analysis, physical monitoring and pathologic diagnosis. Sensing biology is a new multidisciplinary field integrating bio/chemical sensing (imaging) and biology science. Based on the medical/dental research, many scientists have contributed to the advancement of the study of this area at TMDU. We launched a strategic project for promotion of the sensing-biology research and are certain that we will contribute to elucidation of life process, development of novel diagnosis and treatment of diseases in the medical/dental field.

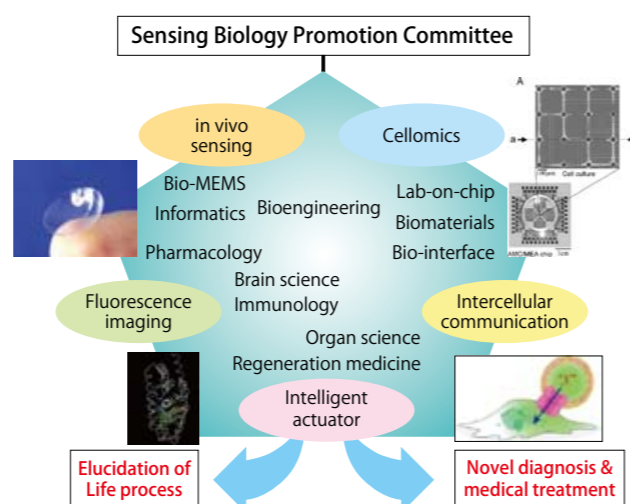
Main research topics are as follows.

1. Wearable bio/chemical sensing devices and instrumentation  
Flexible and wearable sensors are fabricated using MEMS (microelectromechanical systems) techniques onto functional polymers in order to apply (or implant) to human body for bio/chemical monitoring. Human body communication system is also investigated for data acquisition from those wearable sensors without any electric wires.
2. Cellomics research with Lab-on-Chip  
By fusion of latest nano- and bio-technologies, we are developing an on-chip artificial organ model for drug discovery and toxicology use. Epigenetic information and memorization stored in living system such as brain (neural network system), immune system and cardio systems by environmental hysteresis are also investigated by cellomics research with Lab-on-Chip.

3. Research of de novo cell for intercellular communications with living cell  
We design functional molecular assembly systems such as giant liposomes, proteo-liposomes and liposome-tube networks for construction of artificial cell to communicate with living cell.
4. Intelligent actuators driven with biological energy  
Novel chemo-mechanical system (Organic engine) is investigated to develop intelligent actuators driven (and regulated) by biological energy such as blood chemicals.

In this project, we will improve the research facilities and establish the Fabrication Center for development of sensing devices and probes. We are also planning to take collaboration with Research Project of Chemical Biology at TMDU in order to accelerate both research activities for elucidation of life process and development of novel diagnosis and treatment of diseases in the medical/dental field.

### Research Project of Sensing Biology



### Bioethics Research Center

Principal Investigator: Shuki MIZUTANI, MD, PhD (Director, Bioethics Research Center)

The Bioethics Research Center was established in 2005 to promote international collaboration to explore new ethical standards to meet changes and challenges in the post-genomic era.

#### 1. Support for Ethical Review Committee activities

Based on the collaboration with Harvard School of Public Health we established new approaches to support ethical review Committee.

- (1) The Bioethics Research Center prescreens research proposals before the ethical review board examination.
- (2) The Bioethics Research Center monitors research activities concerning various ethical committees in our university and provide practical advice.
- (3) The Bioethics Research Center functions as a hub of the ethical review boards of our university to share the knowledge and experience. Our objective is sharing information on common problems and collaborating to solve them.

#### 2. Education of Ethical Issues in Medical school

We have classes in ethical issues, especially issues concerning clinical cases related to genetic counseling, at the Department of Medicine, Biomedical Science PhD Program, the Graduate School of Health Sciences, and for other universities. In collaboration with the Clinical Research Center affiliated with the TMDU Hospital, we organized a forum to give lectures on ethical issues concerning medical research for doctors certified to conduct clinical trials by medical associations. We are planning to continually enhance our educational activities.

#### 3. Clinical Practice in Genetic Counseling

We also conduct genetic counseling to those patients who needs genetic advice and considers genetic testing based upon the referral from the other specialities at the

department of Medical Genetics. Our department has been approved by the Japanese board of Clinical Genetics and thus after completion of 3-year program in our department, one can be eligible for the board examination. Currently, ten medical doctors have registered in our program and joined in our sessions and attend the clinical conferences and invited seminars and lectures. We also making a novel database for clinincal genetics to share our clinical experience. Our database is uniuqly catogolized by clients' relationship to the proband and their attitudes to the disease itself, rather than clinical diagnosis or mode of ingerirance.

#### 4. International Collaborations

We held an international symposium on bioethics together with the in January, 2008. The invited speakers included Dr. Thomas Murray, Director of the Hastings Center, USA, Dr.Robert Troug, Chair of the Harvard ES Cell Research Organization, USA, and Dr. Wilhelm Vossenkuhl, Director of the Bioethics Center, University of Munich, Germany. Participants from all over Japan actively discussed issues related to international as well as domestic advanced research fields such as stem cell research and ethical consideration around medical research. The proceeding of the symposium will be soon published.



## Hard Tissue Genome Center

Principal Investigator: Masaki NODA, MD, PhD (Hard Tissue Genome Center)

TMDU established the Hard Tissue Genome Center with special funds granted by the Ministry of Education, Culture, Sports, Science, and Technology. The Hard Tissue Genome Center acts as the hub of a network of clinical and scientific researchers of hard tissue diseases belonging to different departments of TMDU. The chief aim of the center is to promote studies on hard tissue diseases by integrating clinical and pathology information about diseases with findings in molecular bioscience.

The Hard Tissue Genome Center consists of the following seven divisions:

1. Molecular bioscience of hard tissue diseases
2. Structural analysis of hard tissue disease-related genes
3. Functional analysis of hard tissue disease-related genes
4. Pathology of cartilaginous diseases
5. Pathology of oral tumors
6. Development of advanced diagnostic methods
7. Development of advanced treatment methods
8. Innovative Therapeutics

Director Noda is in charge of general management of the center.

The Hard Tissue Genome Center is a trans-sectional organization across the departments of medicine and dentistry as well as the research institutes of TMDU. We recently invited two researchers to launch the center. We have held strategic meetings for research promotion and carried out research plans to integrate and analyze clinical and genomic data.

We requested an international panel of scientists to assess our organization; both our research policy and budget scheme were highly accredited. The panel also gave us useful advice on our research plans.

Our main objective is to develop tailor-made treatments for hard tissue diseases and to introduce the idea of "translational research" into our approach so that discoveries at "the bench" (i.e., basic research) can be translated into clinical applications at "the bedside". Our center will act as a rallying point of collective efforts from all sections of TMDU and contribute to the development of new treatments for hard tissue diseases.

### Divisions and Objectives

1. Division of Molecular Bioscience of Hard Tissue Diseases (Professor Masaki NODA, Associate Professor Yoichi EZURA)

This division carries out basic research concerning hard tissue diseases in molecular biology, pathology, and molecular pathophysiology. Our focus will be on molecular functions in cell proliferation and cell adhesion, tumor infiltration into bones, and regulation of cell proliferation and cell adhesion.

2. Division of Structural Analysis of Hard Tissue Disease-Related Genes (Professor Johji INAZAWA, Associate Professor Issei IMOTO, Associate Professor Kenichi OZAKI)

This division aims to identify genes responsible for hard tissue diseases, develop biomarkers for malignancy testing, and develop screening methods for molecular targets, regarding cartilaginous and oral tumors. For these purposes we do analytical studies of polymorphic genes, structural abnormalities of chromosomes, and epigenetic control of gene expression.

3. Division of Functional Analysis of Hard Tissue Disease-Related Genes (Professor Yoshio MIKI)

This division conducts systematic analyses of gene expression and proteomic analyses regarding hard tissue diseases. We also use the functional genomics approach in order to identify genes responsible for disease, and molecular targets of treatment, leading to the development of testing methods of anticancer sensitivity.

4. Division of Pathology Analysis of Cartilaginous Diseases (Professor Tsuyoshi ISHIDA)

This division carries out research in pathology diagnosis of cartilaginous diseases. Using data collected from pathology diagnoses and morphological analyses of tumor cells, we do research on functional annotation of genes responsible for disease as well as susceptibility estimation.

5. Division of Pathology Analysis of Oral Tumors (Professor Hitoshi TSUDA)

This division carries out research in pathology diagnosis of oral tumors. Using data collected from pathology diagnoses and functional and morphological analyses of tumor cells and combining them with simulation analysis, we do research on functional annotation of genes responsible for disease as well as susceptibility estimation.

6. Division of Development of Advanced Diagnostic Methods (Professor Ken OMURA, Associate Professor Shogo HASEGAWA)

This division aims at developing advanced diagnostic methods for malignant hard tissue diseases, especially oral tumors.

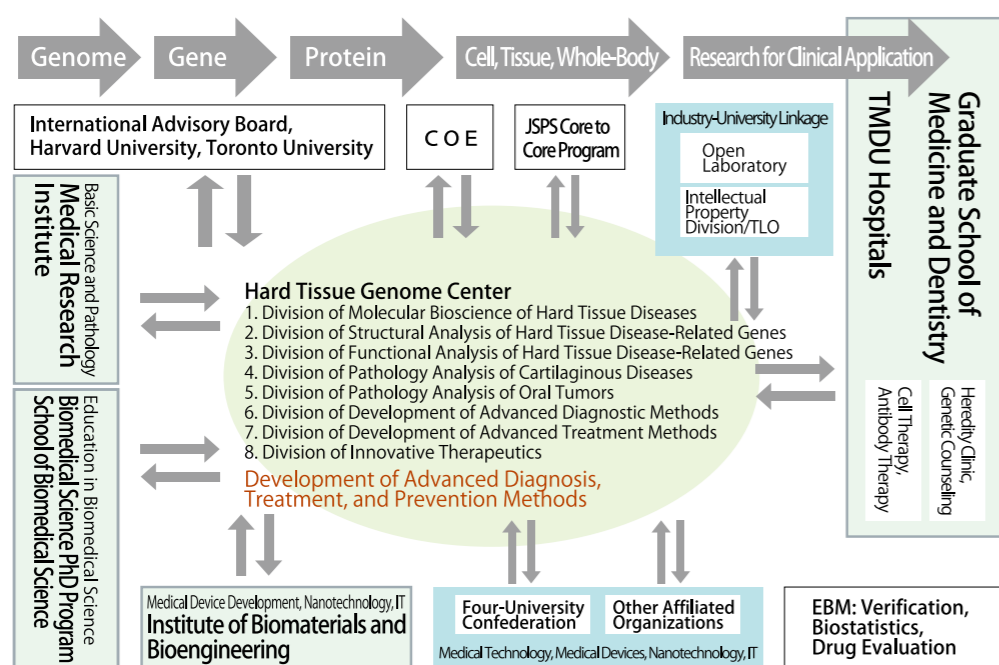
7. Division of Development of Advanced Treatment Methods (Professor Kenichi SHINOMIYA, Associate Professor Keisuke ABE)

This division aims at developing advanced treatment methods for hard tissue diseases, especially cartilaginous tumors.

8. Division of Innovative Therapeutics (Professor Keiji MORIYAMA)

This division aims at development of future treatment of the hard tissue diseases.

### Hard Tissue Genome Center



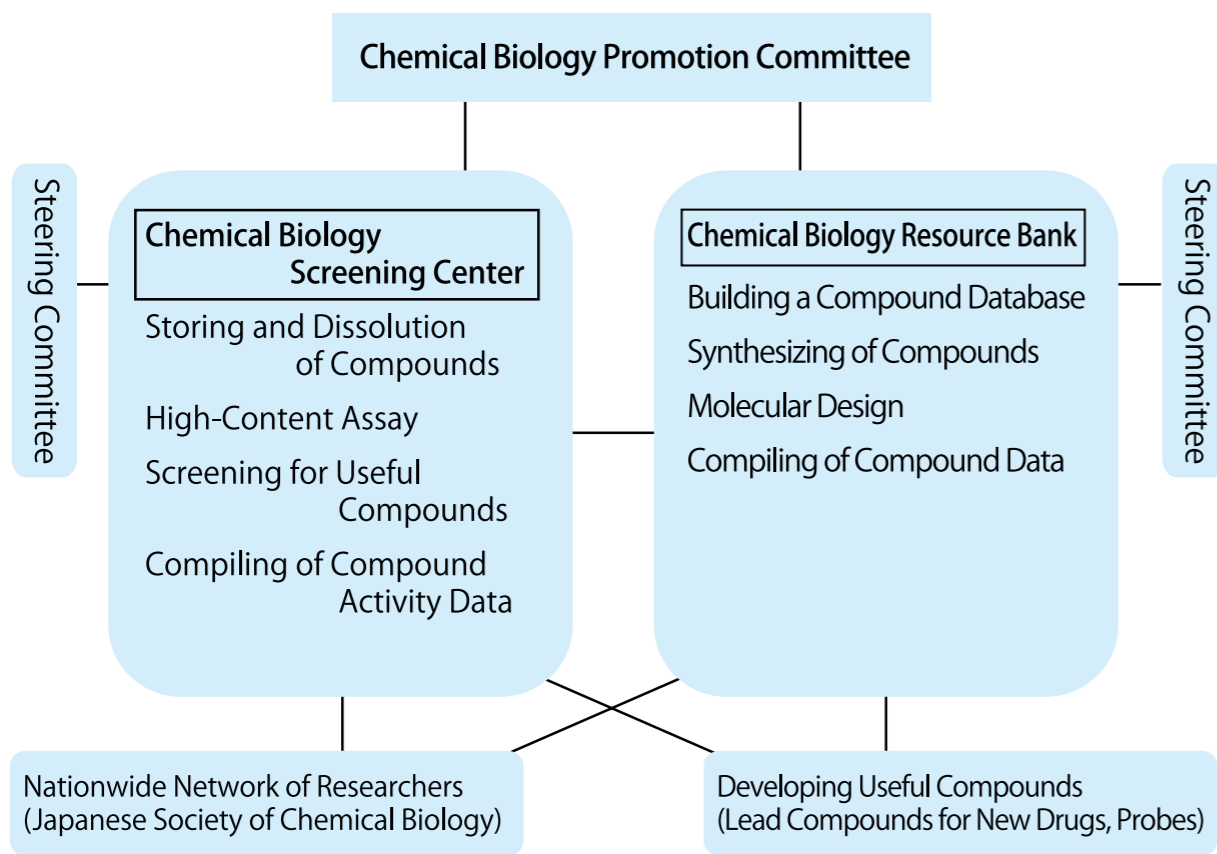
### Research Promotion of Chemical Biology

Principal Investigator: Takeshi TSUBATA, MD, PhD (Dean, Graduate School of Biomedical Science)

Chemical biology is a new interdisciplinary field of science integrating chemistry and biology, applying ideas of chemistry and chemically synthesized compounds to the study and manipulation of biological phenomena. As new methodology is introduced in this newly emerging scientific discipline, significant discoveries will be made. It is also expected that new findings in chemical biology will directly lead to development of new drugs and new diagnostic agents, including visualization probes, as chemical compounds are used in many research projects. The US National Institutes of Health also emphasize the importance of the development of chemical biology in their roadmap for medical research. Chemical biology is expanding its field as are related disciplines such as bioinformatics and materials science. TMDU has produced many remarkable achievements in medical research and played a leading

role in education and research in chemical biology. Now, TMDU is launching a granted project for promotion of research in chemical biology and plans to make further contributions to its development.

Within this project we have improved and expanded the facilities of the Chemical Biology Screening Center and the Chemical Biology Resource Bank and made them a solid platform for education and research in chemical biology at TMDU. We have also established a chemical compound library and built a database of structures, and activities of the compounds compiled in the library, and will make the library and the database accessible to outside researchers soon. These efforts will help researchers to identify promising compounds for drug discovery, which is expected to lead to better diagnosis and treatment of diseases.



### Funds for Subjects Related to Policies

#### Special Educational Program for International Medical Leaders of Tomorrow

Principal Investigator: Kikuo OHNO, MD, PhD (Dean, Faculty of Medicine)

Based on the preliminary training conducted within the "Innovative Educational Program to Nurture Internationally-Minded Medical Leaders", this special educational program aims at offering medical education that meets the highest global standards.

Within this program, we engage in the following:

- (1) Supporting the students to take part in clinical clerkships at Harvard Medical School.
- (2) Reforming the clinical clerkship program at TMDU and improving facilities so that the students can maximize their education.
- (3) Supporting the students to do research work at overseas affiliated universities and to deliver papers at international conferences.

This program makes it possible for the students in the sixth year who pass the selection process to take part in clinical clerkships at Harvard Medical School. This externship program is implemented as part of the curriculum. We offer to candidate students for the Harvard Medical School Externship three months of intensive training.

As part of the project semester in the fourth year, students have a chance to undertake a research project overseas for five months. TMDU has a student exchange with Imperial College, London. Thus, TMDU offers opportunities for students to study abroad which will help the students to extend their intellectual horizons and foster global understanding.

We also invite experts on education from Harvard to work with TMDU faculty to improve clinical clerkship programs. Through this partnership with Harvard, we believe we can develop new ideas and approaches to medical education which can meet various challenges in the new era.



### Special Education Program for Creating a Liberal Arts Education Model for Medical and Dental Universities—A Refinement of Liberal Arts Education at Tokyo Medical and Dental University

Principal Investigator: Masaru WADA, PhD (Dean, College of Liberal Arts and Sciences)

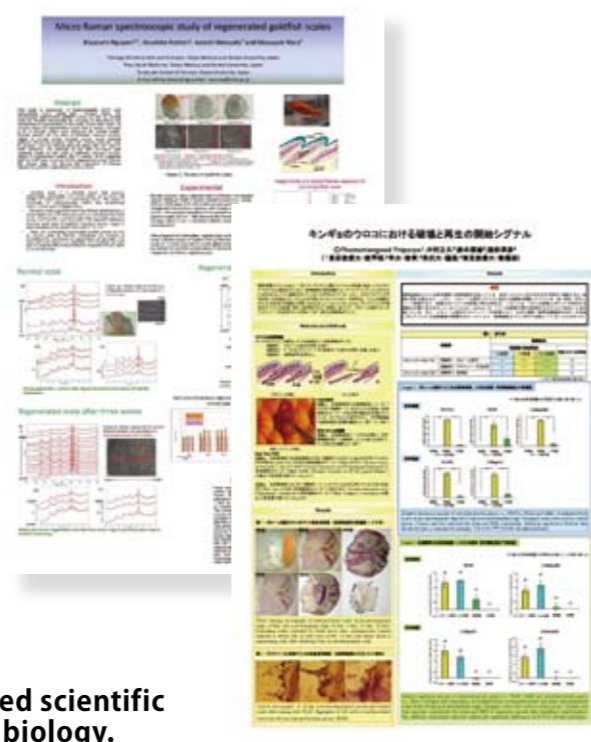
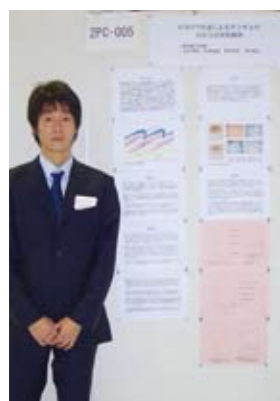
Building on our current curriculum, this special education program aims to develop a liberal arts program that will provide a sound foundation in the sciences and the arts for health professionals who will be the leaders of the next generation. In doing so, we aim to create a model curriculum which will contribute to educational programs at other institutions involved in training health professionals in Japan.

Within this program we engage in the following:

- 1) Employing placement tests in natural science courses to ensure students in every level acquire the basic knowledge required for their professional training. Students with top-level grades will be encouraged to embark on research projects.
- 2) Developing reading, writing, and presentation skills in mandatory humanities and language courses that are organized as small group seminars.
- 3) Teaching self-management skills for body and mind, thus creating a base from which to communicate with, and understand, others. Health science and physical education courses are incorporating new educational techniques, and a fitness management tool for data analysis is in development.

We offer introductory courses in biology, chemistry, and physics for students who are new to the subjects. Our present second-year students take achievement tests mid-year (usually the end of September), and based on the results, are invited to take follow-up courses to help them prepare themselves for professional training. Motivated students who excel in science are invited to assist in research, and the chemistry department has trained motivated students to deliver papers at an academic society.

This program will allow research-oriented students to pursue their ideas as well as allow all students to develop a scientific and critical mind. Together with communicative competence and linguistic skills, these abilities should help TMDU students become reliable health professionals in their local and global communities.



Motivated students attended scientific meetings in chemistry and biology.

### Medical and Dental Sciences, Master of Medical Administration Course

In 2004, TMDU established a new master's degree course, the Medico-Dental Master of Medical Administration Course, to produce specialists in administrative management of medical service (1 year course) and healthcare policy (2 year course). This course is supported by the "Four-University Confederation" consisting of Hitotsubashi University, Tokyo Institute of Technology, Tokyo University of Foreign Studies, and TMDU.

The aim of this course is to produce professional personnel who can take the lead in managing medical service and executing medical policy, responding to changing social needs for medical service. With rapid changes in the healthcare system in Japan and the globalization of medicine, it is imperative to produce qualified experts who can design and manage a new system to provide better, patient-centered healthcare service.

In this course, the students are offered a comprehensive educational program in medicine related subjects, including organization management and safety management. Laws, economics, engineering, sociology, and ethics are also incorporated into the curriculum.

#### Main subjects are as follows:

- |   |   |
|---|---|
| 1. Medical Policy   | 6. Medical Facility and Hygiene Control                     |
| 2. Quality Control of Medical Service and Risk Management | 7. Management Strategy and Organization Control             |
| 3. Medical Law and Medical Ethics                         | 8. Human Resource Management and Human Resource Development |
| 4. Hospital Information and Information Security          | 9. Information Supply in Medical Service                    |
| 5. Cultural Study of World Medicine                       | 10. Clinical Epidemiology                                   |

### Intellectual Property Division / Technology Licensing Organization (TLO)

Society has high expectations related to the creative power of universities to realize an affluent and wealthy society in the 21st century. In particular, life science (including medicine and dentistry) is predicted to be a key alternative area to information technology in the 21st century, and TMDU is expected to play an important role in building a country on intellectual property. To meet these social needs, we established the Intellectual Property Division specialized in medicine, biomaterials and biotechnology in September 2003, and established the Technology Licensing Organization (TLO) in August 2004. It is unprecedented for a national university cooperation to affiliate both an intellectual property division and a TLO. By close collaboration of the two, we promote efficient technology licensing, securing property rights and university-industry linkages, which lead to the development and wide application of new medical technologies.

We publish a journal, Life Science Report, to classify and disseminate patent information in life science. Human resource development is another mission of our organization. We offer educational programs for qualified personnel who can evaluate intellectual property in the field of life science.





# International Exchange

Tokyo Medical and Dental University and Partners Harvard Medical International, Inc.  
Alliance for Medical Education

Overseas Affiliated Universities / Inter-Faculty Agreements

Number of International Students

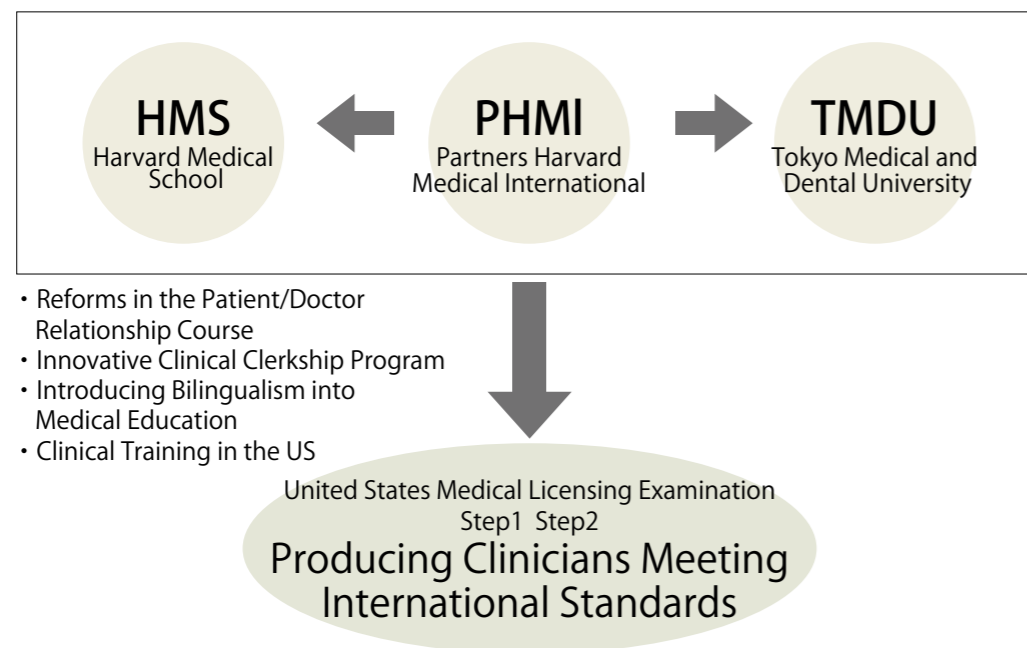
# Tokyo Medical and Dental University and Partners Harvard Medical International, Inc. Alliance for Medical Education

Since 2002, TMDU has cooperated with Harvard Medical International, Inc. (Partners Harvard Medical International, Inc. since 2008) and implemented wide-ranging reforms into our medical education. One of the chief aims of this alliance is to create a new model of medical education in Japan in order to meet various challenges we face in the 21st century. Partnering with PHMI, closely related to Harvard Medical School, TMDU has introduced new ideas and approaches into its curriculum, including patient-doctor relationship courses, hybrid programs integrating basic science and clinical studies, and innovative clinical clerkship programs.

This alliance also provides TMDU students with a chance to take part in a clinical clerkship at Harvard Medical School. As a part of a recent curriculum reform, TMDU introduced the Harvard Medical School Externship program in 2004. The students who pass the selection go through nine months of preparatory training then take part in clinical clerkships at Harvard Medical School. They stay in Boston for three months and take three, four-week elective clerkship rotations. Harvard Medical School provides exchange students from all over the world with a chance to experience the same clinical training as Harvard students at HMS affiliated teaching hospitals. Working hard with talented and enthusiastic students of HMS and other medical schools all over the world, TMDU students can develop their clinical skills and get a better understanding of the American healthcare system as well as acquire an international way of thinking.



(Harvard Medical School)





## Tokyo Medical and Dental University and Partners Harvard Medical International, Inc. Alliance for Medical Education

Nations /Area	Universities	Dates of Agreements (Y/M/D)
United States of America	Harvard Medical International, Inc. (Since 2008, PHMI: Partners Harvard Medical International)	2002/07/01

## Overseas Affiliated Universities/Inter-Faculty Agreements

### Graduate School of Medical and Dental Sciences (Medical Division) / Graduate School of Health Care Sciences / Faculty of Medicine

Nations /Area	Universities	Dates of Agreements
Republic of Finland	Seinajoki University of Applied Sciences University of Tampere Department of Nursing Science	2004/09/08 2004/09/12
United States of America	University of Washington School of Nursing University of Colorado Denver College of Nursing	2008/07/01 2005/10/24
United Kingdom of Great Britain and Northern Ireland	Imperial College London Faculty of Medicine The University of Sheffield School of Nursing and Midwifery	2003/04/30 2008/06/11
Kingdom of Thailand	Faculty of Medicine, Chulalongkorn University	2009/04/16
French Republic	École Normale Supérieure de Lyon	2005/04/01
Republic of Ghana	Noguchi Memorial Institute for Medical Research	2008/05/28

### Graduate School of Medical and Dental Sciences (Dental Division) / Faculty of Dentistry

Nations /Area	Universities	Dates of Agreements
Republic of Korea	College of Dentistry, Seoul National University School of Dentistry, Kyungpook National University School of Dentistry, Chonnam National University	1983/10/10 1995/09/04 2006/10/20
Kingdom of Thailand	Faculty of Dentistry, Chulalongkorn University Faculty of Dentistry, Mahidol University Faculty of Dentistry, Chiang Mai University Faculty of Dentistry, Prince of Songkla University Faculty of Dentistry, Khon Kaen University	1991/01/18 2001/05/03 2001/12/07 2003/03/21 2008/01/08
People's Republic of China	College of Stomatolgy, Jilin University Stomatology College of Dalian Medical University School of Stomatology, Peking University School of Stomatology, Capital Medical University Tongji University, School of Stomatology	1993/07/27 2000/06/08 2003/09/21 2006/09/01 2008/10/14
Taiwan	College of Oral Medicine, Taipei Medical University School of Dentistry, College of Medicine, National Taiwan University	2004/04/23 2005/06/14
Republic of Indonesia	Faculty of Dentistry, University of Indonesia	1993/08/31
Republic of Indonesia	Faculty of Dentistry, National University of Singapore	1995/07/20
Malaysia	Faculty of Dentistry, University of Malaya	1995/08/27
Kingdom of Denmark	School of Dentistry, Faculty of Health Sciences, University of Copenhagen	1995/08/31
Union of Myanmar	Institute of Dental Medicine, Yangon	1995/09/08

Socialist Republic of Vietnam	Faculty of Odonto-Stomatology, The University of Medicine & Pharmacy at Ho Chi Minh City University of Odonto-Stomatology, Hanoi	1996/01/16 2005/06/07
Mongolia	School of Dentistry, Health Sciences University of Mongolia	1999/01/19
Democratic Socialist Republic of Sri Lanka	Faculty of Dental Sciences, University of Peradeniya	1999/04/29
Kingdom of Cambodia	Faculty of Odonto-Stomatology, University of Health Sciences, Phnom Penh Cambodia	2002/09/19
Lao People's Democratic Republic	Faculty of Medical Sciences, National University of Laos	2003/10/28
Republic of the Philippines	College of Dentistry, University of the Philippines Manila	2003/11/06
United Kingdom of Great Britain and Northern Ireland	King's College London Dental Institute	2008/11/04
Federal Republic of Germany	Charité-University Medicine Berlin	2004/03/17
Czech Republic	Masaryk University, Faculty of Medicine	2009/04/29
United States of America	School of Dental Medicine, University of Pennsylvania Harvard School of Dental Medicine School of Dentistry, University of North Carolina at Chapel Hill School of Dentistry, University of California San Francisco	1994/01/27 1996/07/26 1999/03/18 2000/08/28
Canada	Faculty of Dentistry, McGill University	2006/08/07
Australia	School of Dental Science, Faculty of Medicine, Dentistry and Health Sciences, The University of Melbourne	1994/03/31

### Institute of Biomaterials and Bioengineering

Nations /Area	Universities	Dates of Agreements
United Kingdom of Great Britain and Northern Ireland	Bioengineering Unit, University of Strathclyde Interdisciplinary Research Centre in Biomedical Materials and Science, Queen Mary and Westfield College, University of London	1993/03/26 1995/07/03
Kingdom of Sweden	Department of Biomedical Engineering, Linköping University	1995/09/26
Republic of Poland	Institute of Biocybernetics and Biomedical Engineering and International Center of Biocybernetics, Polish Academy of Science	1996/02/21
Republic of Korea	Institute for Biomaterials Research and Development, Kyungpook National University	1996/09/24
People's Republic of China	School of Stomatology, Peking University	2006/06/06

### Medical Research Institute

Nations /Area	Universities	Dates of Agreements
Republic of Singapore	Oncology Research Institute, National University of Singapore	2003/01/01
United States of America	The General Hospital Corporation D/B/A, Massachusetts General Hospital	2005/04/25
Kingdom of Thailand	Faculty of Dentistry, Chulalongkorn University	2006/02/28
French Republic	École Normale Supérieure de Lyon	2008/02/25

### Biomedical Science PhD Program / School of Biomedical Science / Medical Research Institute

Nations /Area	Universities	Dates of Agreements
Republic of Poland	Medical University of Gdansk	2003/11/01
Federal Republic of Germany	Deutsches Rheuma-Forschungszentrum Berlin	2004/02/01
People's Republic of China	School of Basic Medical Sciences, Peking University Health Science Center China Medical University	2006/02/27 2008/04/01

# Number of International Students

(May1, 2009)

Country/Area	Classification	Graduate Students				Undergraduate Students				Research Students				Japanese Language Course Students	Subtotal		Total	
		Graduate School of Medical and Dental Sciences	Graduate School of Health Care Sciences	Biomedical Science PhD Program		Faculty of Medicine	Faculty of Dentistry	Faculty of Medicine	Faculty of Dentistry	Institute of Biomaterials and Bioengineering	Medical Research Institute	International Exchange Center	International Exchange Center		National Expense	Private Expense		
Korea		1	1	1	1							1			1	4	5	
China		5	43	1	3	3	2	2	6	3		1	1		9	61	70	
Mongolia		2	3		1				1						2	5	7	
Mongolia		1													1	0	1	
Indonesia		5													5	0	5	
Singapore					1										1	0	1	
Vietnam		3													3	0	3	
Laos		1													1	0	1	
Cambodia		2													2	0	2	
Malaysia		1	1												1	1	2	
Brunei						1									1	0	1	
Thailand		12	2			1								4	17	2	19	
Myanmar		1	1		1							1	1		1	4	5	
Nepal			1		1										0	0	2	
Bangladesh		8	9												8	9	17	
India		3	3												3	3	6	
Sri Lanka		3	2		1										4	2	6	
Pakistan					1										1	0	1	
Afghanistan			1												0	1	1	
Iran		1	2		1					1					1	4	5	
Iraq		1	1												1	1	2	
Jordan		2													2	0	2	
Cyprus		1													1	0	1	
Bosnia and Herzegovina		1													1	0	1	
Azerbaijan		1													1	0	1	
Slovakia		1													1	0	1	
Sweden					1							1			1	1	2	
Egypt		1	1												1	1	2	
Libya		1													1	0	1	
Tanzania		1													1	0	1	
Ghana		1	1												1	1	2	
Canada					1										1	0	1	
Mexico					1										0	1	1	
Brazil		1													1	0	1	
Paraguay		3													3	0	3	
Honduras														1	1	0	1	
Fiji		1													1	0	1	
Australia								1							0	1	1	
Subtotal		65	72	1	1	8	9	2	2	0	3	0	7	0	5	17	0	185
Grand Total		National Expense 74		Private Expense 82		National Expense 2		Private Expense 5		National Expense 0			Private Expense 17		National Expense 5		185	
		156				7				17				5				

\* "Private Expense" (Graduate Students) includes visiting students from other universities.



### International House

Address	8-1, Kounodai 2 chome, Ichikawa City, Chiba Prefecture
Data on the Building	Three-Story Reinforced Concrete Building
Floor Space	1,708 m <sup>2</sup>
Rooms for Personal Use	Single 33 Rooms, Couple 10 Rooms, Family 5 Rooms
House Office and Shared Facilities	House Office, Entrance, Hall Mail Boxes, Store Room, Lounge, Laundry Room

### International Student House

Address	8-1, Kounodai 2 chome, Ichikawa City, Chiba Prefecture
Data on the Building	Four-Story Reinforced Concrete Building
Floor Space	1,175 m <sup>2</sup>
Rooms for Personal Use	Single 50 Rooms
House Office and Shared Facilities	Lounge, Laundry Room

\* International House includes rooms for accommodation.

# Statistics 2009

Number of Staff Members

Number of Graduate Students

Number of Undergraduate Students

Number of Applicants and Students Admitted (Fiscal Year 2009) (Graduate schools)

Number of Applicants and Students Admitted (Fiscal Year 2009) (Faculties)

Number of Graduates / Career Prospects after Graduation (Graduate Schools / Faculties)

Degrees Conferred

Educational Facilities

Grants-in-Aid for Scientific Research (Fiscal Year 2009)

Entrusted Research Funds (Fiscal Year 2008)

Grants-in-Aid for Scientific Research from Ministry of Health, Labour and Welfare

Endowed Departments, Finances (2009 Fiscal Year Budget)

# Number of Staff Members

(May 1, 2009)

Classification	Director	Academic Staff					Other Staff				Total
		Professor	Associate Professor	Lecturer	Research Associate	Subtotal	Clerk	Co-medical	Nurse	Subtotal	
President	1										1
Trustee	5										5
Auditor	2(1)										2(1)
Administration Bureau							162			162	162
Graduate School of Medical and Dental Sciences		73	50	37	141	301					301
Graduate School of Health Care Sciences		16	5	5	14	40					40
School of Biomedical Science		8	5		1	14					14
Faculty of Medicine							66	7		73	73
University Hospital of Medicine		1	8	30	94	133	4	105	652	761	894
Faculty of Dentistry		6	2	4	1	13	29	3		32	45
University Hospital of Dentistry			4	12	23	39		50	57	107	146
School of Dental Technologists				5		5					5
College of Liberal Arts and Sciences		9	10		2	21	3			3	24
Institute of Biomaterials and Bioengineering		9	6	1	14	30	6			6	36
Medical Research Institute		17	18		24	59	9			9	68
University Library							5			5	5
Kounodai Branch Library							2			2	2
Human Gene Sciences Center		1		1	1	3					3
Research Center for Frontier Life Science	Instrumental Analysis Research Center for Life Science		1		1	2					2
	General Isotope Center		1			1	2			2	3
	Animal Research Center				1	1					1
International Exchange Center			4			4					4
Health Service Center		1	1			2			1	1	3
Center for Education Research in Medicine and Dentistry		2	1	1		4					4
Center for Brain Integration Research			2			2					2
<b>Number of Staff Members</b>	<b>8(1)</b>	<b>143</b>	<b>118</b>	<b>96</b>	<b>317</b>	<b>674</b>	<b>288</b>	<b>165</b>	<b>710</b>	<b>1163</b>	<b>1845 (1)</b>

\* Note ( ) : The numbers in parentheses indicate part-time directors

# Number of Graduate Students

(May 1, 2009)

## Graduate School of Medical and Dental Sciences

Specialized Courses	Capacity of Admission	Total Capacity	Master's Program					Doctor's Program					Total							
			1st year	2nd year	Subtotal	1st year	2nd year	3rd year	4th year	Subtotal										
			Medical and Dental Sciences	50	85	52	39	32	19	84	58							84	58	
Medical and Dental Sciences (MMA Course)	15	25	19	14	10	8	29	22							29	22				
Oral Health Sciences	42	168							59	27	51	25	48	20	32	18	190	90		
Maxillofacial/Neck Reconstruction	30	120							29	9	32	13	25	4	30	7	116	33		
Bio-Matrix	18	72							21	8	14	7	11	3	14	7	60	25		
Public Health	20	80							16	6	18	8	23	14	33	15	90	43		
Gerontology and Gerodontology	10	40							17	7	14	4	11	4	33	8	75	23		
Comprehensive Patient Care	8	32							1	1	7	4	8	5	20	11	36	21		
Cognitive and Behavioral Medicine	19	76							13	6	17	3	19	3	20	8	69	20		
Bio-Environmental Response	17	68							13	7	11	5	14	8	18	7	56	27		
Systemic Organ Regulation	29	116							30	4	35	8	30	10	41	12	136	34		
Advanced Therapeutical Sciences	21	84							32	8	26	8	29	15	37	10	124	41		
<b>Subtotal</b>	<b>279</b>	<b>966</b>	<b>71</b>	<b>53</b>	<b>42</b>	<b>27</b>	<b>113</b>	<b>80</b>	<b>231</b>	<b>83</b>	<b>225</b>	<b>85</b>	<b>218</b>	<b>86</b>	<b>278</b>	<b>103</b>	<b>952</b>	<b>357</b>	<b>1,065</b>	<b>437</b>

## Graduate School of Health Care Sciences

Specialized Courses	Capacity of Admission	Total Capacity	Master's Program				Doctor's Program				Total									
			1st year	2nd year	Subtotal	1st year	2nd year	3rd year	4th year	Subtotal										
			Comprehensive Health Nursing Sciences	(1) 17 (2) 8	(1) 34 (2) 24	22	19	22	20	44	39	12	11	11	11	26	26			49
Biomedical Laboratory Sciences	(1) 12 (2) 6	(1) 24 (2) 18	15	13	13	10	28	23	2	2	6	5	11	7			19	14	47	37
<b>Subtotal</b>	(1) 29 (2) 14	(1) 58 (2) 42	37	32	35	30	72	62	14	13	17	16	37	33			68	62	140	124

## Biomedical Science PhD Program

Specialized Courses	Capacity of Admission	Total Capacity	Master's Program				Doctor's Program				Total									
			1st year	2nd year	Subtotal	1st year	2nd year	3rd year	4th year	Subtotal										
			Bioinformatics	(1) 21 (2) 8	(1) 42 (2) 23	31	15	20	13	51	28	9	4	9	3	20	7			38
Functional Biology	(1) 24 (2) 7	(1) 48 (2) 20	18	3	25	9	43	12	9	5	7	4	5	3			21	12	64	24
<b>Subtotal</b>	(1) 45 (2) 15	(1) 90 (2) 43	49	18	45	22	94	40	18	9	16	7	25	10			59	26	153	66

Grand total (Master's Program / Doctor's Program)	Capacity of Admission	Total Capacity	Master's Program				Doctor's Program				Total									
			1st year	2nd year	Subtotal	1st year	2nd year	3rd year	4th year	Subtotal										
				279	966	71	53	42	27	113	80	231	83	225	85	218	86	278	103	952

Grand total (Master's Program / Doctor's Program)	Capacity of Admission	Total Capacity	Master's Program				Doctor's Program				Total									
			1st year	2nd year	Subtotal	1st year	2nd year	3rd year	4th year	Subtotal										
				103	233	86	50	80	52	166	102	32	22	33	23	62	43			127

\* Note 1 : The numbers in red indicate the female graduate students.  
 \* Note 2 ( ) : The numbers in angle brackets indicate Advanced Oral Science International Program Students.  
 \* Note 3 [ ] : The numbers in brackets indicate International students in the Graduate Public Health Leader Course.  
 \* Note 4 ( ) : The numbers in parentheses indicate biomedical science international education program students.  
 \* Note 5 (1) : Master's Program  
 \* Note 6 (2) : Doctor's Program

Grand Total	
1,358	627
<22>	
[17]	
(17)	

## Number of Undergraduate Students

(May 1, 2009)

### Faculty of Medicine

	Capacity of Admission	Total Capacity	1st year	2nd year	3rd year	4th year	5th year	6th year	Total							
School of Medicine	85 (5)	480	86	28	75	27	89 [6]	16 [0]	90 [6]	23 [3]	86 [5]	26 [3]	79 [5]	29 [3]	505 [22]	149 [9]
School of Health Care Sciences	55	210	59	57	55	53	48	46	48 [1]	43 [1]					210 [1]	199 [1]
	35	130	36	27	33	28	37	26	30	22					136	103
<b>Subtotal</b>	90	340	95	84	88	81	85	72	78 [1]	65 [1]					346 [1]	302 [1]

### Faculty of Dentistry

	Capacity of Admission	Total Capacity	1st year	2nd year	3rd year	4th year	5th year	6th year	Total							
School of Dentistry	55 (10)	370	55	26	59	24	69 [8]	30 [6]	66 [11]	31 [9]	61 [10]	25 [7]	62 [9]	25 [6]	372 [38]	161 [28]
School of Oral Health Care Sciences	27 (6)	116	30	29	27	25	26 [6]	25 [6]	33 [7]	31 [7]				116 [13]	110 [13]	

<b>Grand total</b>	Capacity of Admission	Total Capacity	1st year	2nd year	3rd year	4th year	5th year	6th year	Total							
	257	1,306	266	167	249	157	269 [20]	143 [12]	267 [25]	150 [20]	147 [15]	51 [10]	141 [14]	54 [9]	1,339 [74]	722 [51]

### Research Students

Classification	Male	Female	Total
Faculty of Medicine			
School of Medicine	27	13	40
School of Health Care Sciences	8	17	25
Faculty of Dentistry			
School of Dentistry	125	90	215
School of Oral Health Care Sciences	1	5	6
Institute of Biomaterials and Bioengineering			
Medical Research Institute			
<b>Total</b>	161	125	286

\* Note 1 : The numbers in red indicate the female students.  
 \* Note 2 ( < > ) : The numbers in angle brackets indicate the maximum number of students who can transfer into the third-year program from other institutions. They are not included in the numbers above them.  
 \* Note 3 [ ] : The numbers in brackets indicate the students transferring into the third-year program from other institutions.

## Number of Applicants and Students Admitted (Fiscal Year 2009)

### Graduate Schools

#### Graduate School of Medical and Dental Sciences

Specialized Courses	Capacity of Admission	Applicants			Enrolled Students		
		Male	Female	Total	Male	Female	Total
Medical-Dental Sciences	65	78	91	169	18	53	71
Oral Health Sciences	42	40	29	69	32	27	59
Maxillofacial/ Neck Reconstruction	30	22	10	32	20	9	29
Bio-Matrix	18	17	8	25	13	8	21
Public Health	20	11	8	19	10	6	16
Gerontology and Gerodontology	10	10	8	18	10	7	17
Comprehensive Patient Care	8	0	5	5	0	1	1
Cognitive and Behavioral Medicine	19	8	6	14	7	6	13
Bio-Environmental Response	17	6	8	14	6	7	13
Systemic Organ Regulation	29	30	6	36	26	4	30
Advanced Therapeutical Sciences	21	25	8	33	24	8	32
<b>Total</b>	279	247	187	434	166	136	302

#### Graduate School of Health Care Sciences

Specialized Courses	Capacity of Admission	Applicants			Students Admitted		
		Male	Female	Total	Male	Female	Total
Comprehensive Health Nursing Sciences	(1) 17	7	35	42	3	17	20
	(2) 8	5	24	29	1	11	12
Biomedical Laboratory Sciences	(1) 12	4	20	24	2	13	15
	(2) 6	0	3	3	0	2	2
<b>Total</b>	(1) 29	11	55	66	5	30	35
	(2) 14	5	27	32	1	13	14

#### Biomedical Science PhD Program

Specialized Courses	Capacity of Admission	Applicants			Students Admitted		
		Male	Female	Total	Male	Female	Total
Bioinformatics	(1) 21	35	24	59	14	12	26
	(2) 8	7	4	11	5	4	9
Functional Biology	(1) 24	31	20	51	13	3	16
	(2) 7	1	4	5	1	4	5
<b>Total</b>	(1) 45	66	44	110	27	15	42
	(2) 15	8	8	16	6	8	14

\* Note 1 (1) : Master's Program \* Note 2 (2) : Doctor's Program  
 \* Note 3 : The numbers in red indicate the female graduate students.

## Number of Applicants and Students Admitted (Fiscal Year 2009)

### Faculties

#### Faculty of Medicine

Specialized Courses	Capacity of Admission	Applicants			Students Admitted			
		Male	Female	Total	Male	Female	Total	
School of Medicine	85 (5)	370 (28)	172 (20)	542 (48)	58 (6)	27 (0)	85 (6)	
School of Health Care Sciences	Nursing Science	55 [20]	2 [0]	112 [44]	114 [44]	2 [0]	53 [19]	55 [19]
		Medical Technology	35 [5]	33 [1]	83 [12]	116 [13]	8 [0]	27 [6]
<b>Subtotal</b>	175 [25] (5)	405 [1] (28)	367 [56] (20)	772 [57] (48)	68 [0] (6)	107 [25] (0)	175 [25] (6)	

#### Faculty of Dentistry

Specialized Courses	Capacity of Admission	Applicants			Students Admitted		
		Male	Female	Total	Male	Female	Total
School of Dentistry	55 (10)	160 (9)	131 (21)	291 (30)	29 (2)	25 (6)	54 (8)
School of Oral Health Care Sciences	27 (6)	8 (0)	91 (19)	99 (19)	0 (0)	27 (6)	27 (6)
<b>Subtotal</b>	82 (16)	168 (9)	222 (40)	390 (49)	29 (2)	52 (12)	81 (14)

Grand total	Capacity of Admission	Applicants			Students Admitted		
		Male	Female	Total	Male	Female	Total
	257 [25] (21)	573 [1] (37)	589 [56] (60)	1,162 [57] (97)	97 [0] (8)	159 [25] (12)	256 [25] (20)

\* Note 1 : The numbers in red indicate the female students.  
 \* Note 2 [ ] : The numbers in brackets indicate the number of students admitted on recommendation  
 \* Note 3 ( ) : The numbers in angle brackets indicate the students transferring into the third year program from other institutions. They are not included in the numbers above them.  
 \* Note 4 : The numbers of Applicants and Enrolled Students include foreign students.



## Number of Graduates / Career Prospects after Graduation

### Graduate Schools

Classification	Fiscal year 2008	Total	Higher Education	Resident	Employment	Others
Graduate School of Medical and Dental Sciences	Doctor's Program	206	1,242	2	153	51
	Master's Program	60	310	15	40	5
Medical Research Division	Doctor's Program	Medical Science	978 (58)			
		Nursing Science	30			
	Master's Program	Medical Laboratory Science	10			
		Nursing Science	100			
	Medical Laboratory	93				
Dental Research Division	Doctor's Program	1,361 (28)				
Health Care Sciences	Doctor's Program	20	91		17	3
	Master's Program	25	225	4	18	3
Biomedical Science PhD Program	Doctor's Program	9	27		6	3
	Master's Program	42	150	10	25	7
<b>total</b>		362	4,617	31	259	72

### Faculties

Classification	Fiscal year 2008	Total	Higher Education	Resident	Employment	Others
Faculty of Medicine	School of Medicine	86	3,906	2	78	6
	School of Health Care Sciences	94	1,615	17	72	5
Faculty of Dentistry	School of Dentistry	61	4,071		51	10
	School of Oral Health Care Sciences	34	61	7	22	5
<b>Total</b>		275	9,653	26	129	26

\* Note : The numbers in parentheses indicate the number of students in the Research Division (former curriculum) .

## Degrees Conferred

### Doctor's Program

Classification	Doctor						
	Philosophy in Medical Science	Philosophy in Dental Science	Philosophy	Nursing Science	Medical Laboratory Science	Philosophy in Science	Functional Biology
Fiscal year 2008	94	84	13	4	9	10	1
<b>Total</b>	<b>1,533</b>	<b>1,819</b>	<b>104</b>	<b>61</b>	<b>35</b>	<b>27</b>	<b>1</b>

### Granted by Merit of Thesis

Classification	Doctor				
	Philosophy in Medical Science	Philosophy in Dental Science	Philosophy	Nursing Science	Medical Laboratory Science
Fiscal year 2008	15	3	0	2	0
<b>Total</b>	<b>1,693</b>	<b>475</b>	<b>18</b>	<b>10</b>	<b>8</b>

### Master's Program

Classification	Master									
	Medical Science	Dental Science	Medical Administration (1)	Medical Administration (2)	Nursing Science	Medical Laboratory Science	Science	Biomedical Science	Functional Biology	Philosophy
Fiscal year 2008	42	1	6	9	11	12	38	3	0	1
<b>Total</b>	<b>244</b>	<b>6</b>	<b>45</b>	<b>43</b>	<b>223</b>	<b>193</b>	<b>142</b>	<b>5</b>	<b>2</b>	<b>1</b>

\* Note 1 (1) : Administrative Management of Medical Service  
 \* Note 2 (2) : Healthcare Policy



Graduation Ceremony

## Educational Facilities

(May 1, 2009)

### Enrollment of the Students

School	Grade		Total
	1st year	2nd year	
School for Dental Technologists	20 (10)	20 (11)	40 (21)
Special Training Course of School for Dental Technologists	10 (6)	10 (4)	20 (10)
<b>Total</b>	<b>30 (16)</b>	<b>30 (15)</b>	<b>60 (31)</b>

### Number of Graduates

School	Fiscal year 2008	Total
School for Dental Technologists	21	1,027
Special Training Course of School for Dental Technologists	11	465
<b>Total</b>	<b>32</b>	<b>1,492</b>

### Number of Applicants and Students Admitted (Fiscal Year 2009)

School	Capacity of Admission	Applicants			Students Admitted		
		Male	Female	Total	Male	Female	Total
School for Dental Technologists	20	20	19	39	10	10	20
Special Training Course of School for Dental Technologists	10	6	9	15	4	6	10
<b>Total</b>	<b>30</b>	<b>26</b>	<b>28</b>	<b>54</b>	<b>14</b>	<b>16</b>	<b>30</b>

\* Note 1 : The numbers in red indicate the female students.

## Grants-in-Aid for Scientific Research (Fiscal Year 2009)

(May 1, 2009)

Categories for Research	Number	Amount (in thousands of yen)
Grant-in-Aid for Scientific Research on Priority Areas	35	372,200
Grant-in-Aid for Challenging Exploratory Research	36	54,700
Grant-in-Aid for Young Scientists (A)	7	53,170
Grant-in-Aid for Young Scientists (B)	113	208,260
Grant-in-Aid for JSPS Fellows	37	29,000
Grant-in-Aid for Scientific Research (S)	1	21,970
Grant-in-Aid for Scientific Research (A)	15	218,920
Grant-in-Aid for Scientific Research (B)	51	284,960
Grant-in-Aid for Scientific Research (C)	111	187,850
Grant-in-Aid for Creative Scientific Research	3	277,160
Grant-in-Aid for Young Scientists (Start-up)	11	16,549
Grant-in-Aid for Young Scientists(S)	2	30,550
Grant-in-Aid for Scientific Research on Innovative Areas	1	19,890
Grant-in-Aid for Encouragement of Scientists	3	1,560
Grant-in-Aid for Publication of Scientific Research Results	1	700
<b>Total</b>	<b>427</b>	<b>1,777,439</b>

## Entrusted Research Funds (Fiscal Year 2008)

Categories for Research Funds	Number of Projects	Amount (in thousands of yen)
Entrusted Research	94 (28)	848,313 (160,569)
Cooperative Research	117 (73)	426,863 (271,574)
Donation for Promotion of Learning	714	1,075,892
<b>Total</b>	<b>925</b>	<b>2,351,068</b>

\* A multi-year contract means the research was conducted for more than two years including the fiscal year 2007.  
 The "Amount" is the sum of all the money entrusted to the projects in the fiscal year 2007.  
 \* Figures in parentheses indicate values related to multi-year projects.

## Grants-in-Aid for Scientific Research from Ministry of Health, Labour and Welfare

(May 1, 2009)

Categories for Research	Number of Projects	Amount (in thousands of yen)
Research on HIV/AIDS	1	3,405
Research on Health Security Control	3	17,300
Research on Psychiatric and Neurological Diseases and Mental Health	1	31,200
Research on Regenerative Medicine for Clinical Application	3	97,381
Comprehensive Research on Aging and Health	1	30,000
Research on Measures for Intractable Diseases	6	228,000
Research on Regulatory Science of Pharmaceuticals and Medical Devices	3	36,000
Researches on Sensory and Communicative Disorders	2	21,000
Research on Hepatitis	1	110,500
Comprehensive Research on Cardiovascular and Life-Style Related Diseases	1	17,800
Research on Statistics and Information	1	1,000
Research on Region Medical	8	59,300
Research on Allergic disease and Immunology	1	36,000
<b>Total</b>	<b>32</b>	<b>688,886</b>

## Endowed Departments

(May 1, 2009)

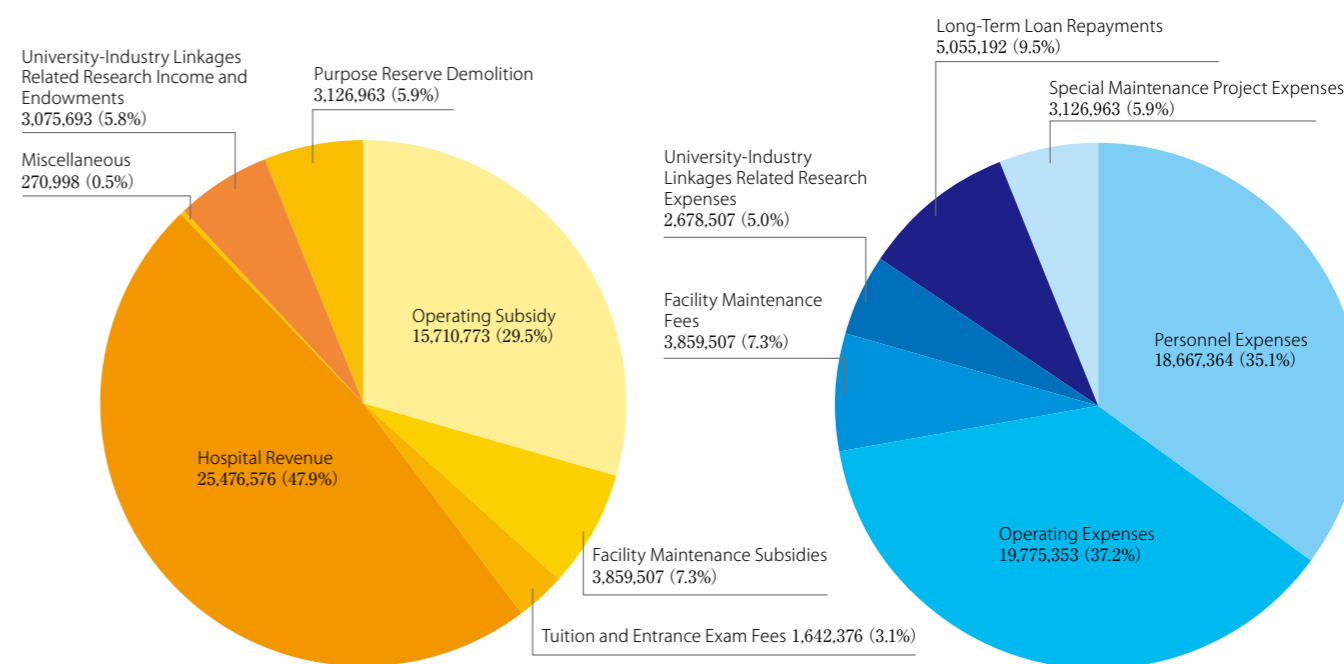
Departments/Institutes	Endowed Departments	Term	Donor
Information Center for Medical Sciences	Department of Advanced Biomedical Informatics	H16.8.1 ~ H21.7.31	VeriSign Japan K.K. / Fuji Xerox Co., Ltd. / T.T.T. Co., Ltd. / Sprite, Inc.
Graduate School of Medical and Dental Sciences	Department of Pharmacovigilance	H17.4.1 ~ H22.3.31	Mitsubishi Tanabe Pharma Corporation / Wyeth K.K. / Takeda Pharmaceutical Co., Ltd. / Abbott Japan Co., Ltd. / Eisai Co., Ltd. / Chugai Pharmaceutical Co., Ltd.
Graduate School of Medical and Dental Sciences	Department of Nanomedicine	H17.4.1 ~ H22.3.31	Dai Nippon Printing Co., Ltd.
Graduate School of Medical and Dental Sciences	Department of Translational Oncology	H17.10.1 ~ H23.9.30	Taiho Pharmaceutical Co., Ltd.
Graduate School of Medical and Dental Sciences	Department of Hepatitis Control	H18.4.1 ~ H24.3.31	Schering-plough K.K.
Graduate School of Medical and Dental Sciences	Department of Advanced	H19.4.1 ~ H22.3.31	KYORIN Pharmaceutical Co., Ltd. / Asahi Kasei Medical Co., Ltd. / Ajinomoto Pharma Co., Ltd. / Ucb Japan Co., Ltd. / Otsuka Pharmaceutical Co., Ltd. / Eisai Co., Ltd. / JIMRO Co., Ltd. / Zeria Pharmaceutical Co., Ltd. / Mitsubishi Tanabe Pharma Corporation
Graduate School of Medical and Dental Sciences	Department of Regenerative Therapeutics for Spine and Spinal Cord	H19.8.1 ~ H22.3.31	HOYA CORPORATION / Medtronic Sofamor Danek, Co., Ltd.
Graduate School of Medical and Dental Sciences	Department of Advanced Regulatory Vascular Surgery	H19.6.1 ~ H22.5.31	Mitsubishi Tanabe Pharma Corporation
Graduate School of Medical and Dental Sciences	Department of Cartilage Regeneration	H19.6.1 ~ H24.5.31	Japan Medical Materials Corporation
Graduate School of Medical and Dental Sciences	Department of Sleep Modulatory Medicine	H21.6.1 ~ H24.5.31	Fukuda Denshi Co., Ltd. / Teijin Home Healthcare Limited / Glaxo Smith Kline Co., Ltd.

## Finances (2009 Fiscal Year Budget)

(The numbers in the pie-charts represent thousands of yen)

Total Income ¥ 53,162,886 thousand yen

Total Expenses ¥ 53,162,886 thousand yen





# TMDU Campuses



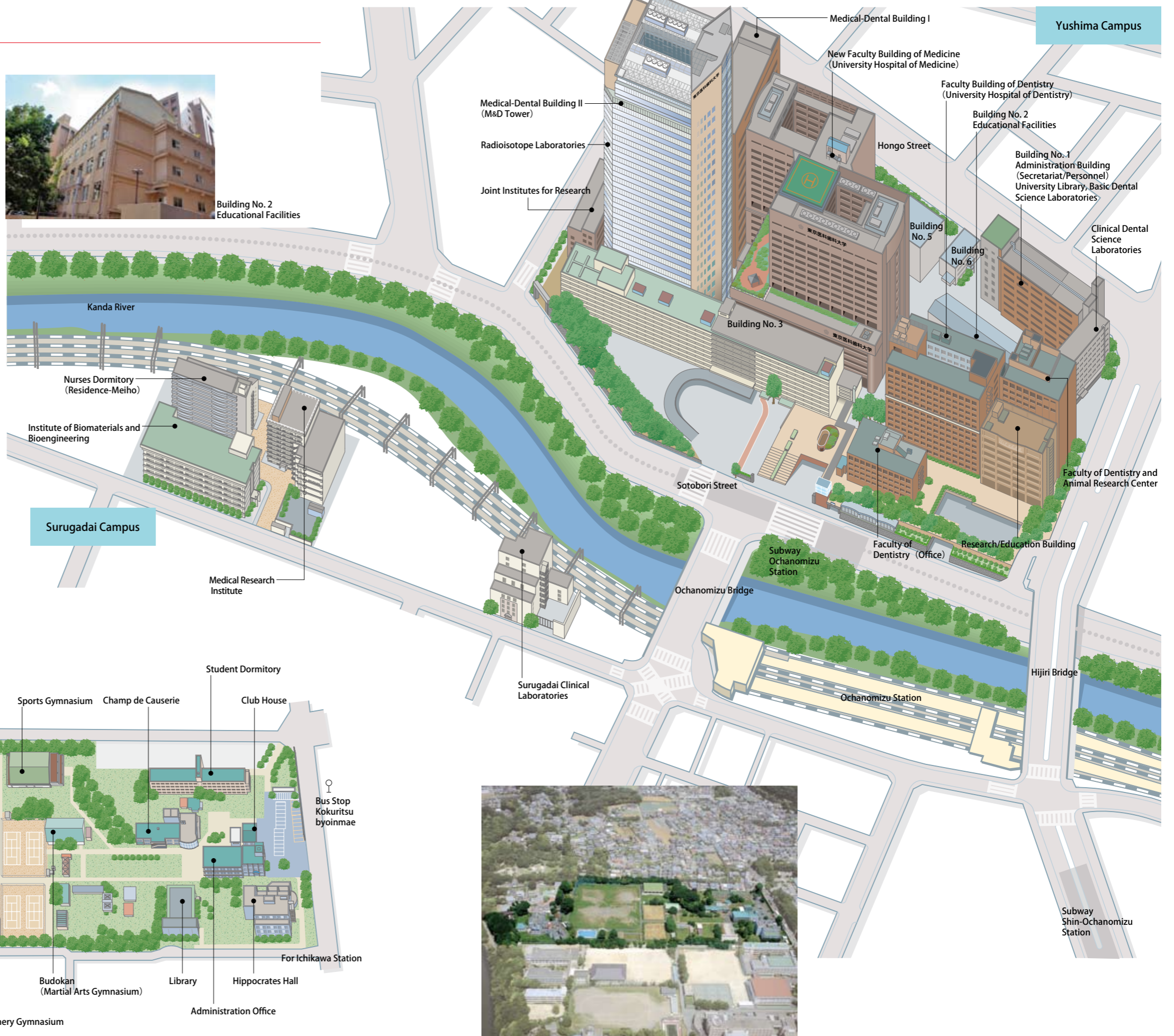
Building No. 2 Educational Facilities



Medical-Dental Building II (M&D Tower)

## Medical-Dental Building II

To foster academic doctors and world-class researchers who will meet the needs of the 21st century, a new building is under construction on Yushima campus. This building is to become a core facility of TMDU by providing space for communal use, versatile research and laboratory zones, open labs for education and research projects, and common labs for the TMDU community.



# Location of University Campuses, Buildings and Addresses

(May 1, 2009)

## Yushima Campus ■ Grounds (sq. Metre) : 45,192㎡ ■ Buildings (sq. Metre) : 237,832㎡

Name	Zip code · Address · Telephone
Administration Bureau / Graduate School Graduate School of Health Sciences Biomedical Science PhD Program School of Biomedical Science	5-45, Yushima 1 chome, Bunkyo-ku, Tokyo 03-3813-6111
Faculty of Medicine University Hospital, Faculty of Medicine	5-45, Yushima 1 chome, Bunkyo-ku, Tokyo 03-3813-6111
Faculty of Dentistry University Hospital, Faculty of Dentistry	5-45, Yushima 1 chome, Bunkyo-ku, Tokyo 03-3813-6111
University Library / Health Service Center Human Gene Sciences Center Research Center for Frontier Life Sciences Instrumental Analysis Research Center for Life Science General Isotope Center Animal Research Center Information Center for Medical Sciences Center for Education Research in Medicine and Dentistry	5-45, Yushima 1 chome, Bunkyo-ku, Tokyo 03-3813-6111
School for Dental Technicians	5-45, Yushima 1 chome, Bunkyo-ku, Tokyo 03-3813-6111

## Surugadai Campus (1) ■ Grounds (sq. Metre) : 532㎡ ■ Buildings (sq. Metre) : 2,156㎡

International Exchange Center	3-21, Kanda Surugadai 2 chome, Chiyoda-ku, Tokyo 03-5283-5855
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## Surugadai Campus (2) ■ Grounds (sq. Metre) : 5,047㎡ ■ Buildings (sq. Metre) : 17,946㎡

Institute of Biomaterials and Bioengineering	3-10, Kanda Surugadai 2 chome, Chiyoda-ku, Tokyo 03-5280-8000
Medical Research Institute	3-10, Kanda Surugadai 2 chome, Chiyoda-ku, Tokyo 03-5280-8050

## Kounodai Campus ■ Grounds (sq. Metre) : 60,938㎡ ■ Buildings (sq. Metre) : 13,993㎡

College of Liberal Arts and Sciences / Kounodai Branch Library Health Service Center, Kounodai Branch	8-30, Kounodai 2 chome, Ichikawa-city, Chiba Prefecture 047-300-7103
International House International Student House	8-1, Kounodai 2 chome, Ichikawa-city, Chiba Prefecture 047-371-7936

Name	Address	Grounds (sq. Metre)	Buildings (sq. Metre)
Toda Boat-House	60, Todakoen 1 chome, Toda-city, Saitama Prefecture	691 ㎡	478 ㎡
Akakura Resort House	Akakura-Onsen, Myoko-city, Niigata Prefecture	1,655 ㎡	334 ㎡
Tateyama. Oga-Resort House	Oga, Tateyama-city, Chiba Prefecture	4,334 ㎡	839 ㎡
Hakusan Residence Housing	36-3, Hakusan 2 chome, Bunkyo-ku, Tokyo	495 ㎡	96 ㎡
Wakamiyacho Residence Housing	26, Wakamiya-cho, Shinjuku-ku, Tokyo	995 ㎡	
Tonoyama Residence Housing	50-3, Chuo 1 chome, Nakano-ku, Tokyo	1,960 ㎡	1,815 ㎡
Etchujima Residence Housing	3, Etchujima 1 chome, Koto-ku, Tokyo	18,136 ㎡	28,492 ㎡
The Ossuary (Nokotsu-do)	10-1, Kounodai 3 chome, Ichikawa-city, Chiba Prefecture	(115 ㎡)	
<b>Total</b>		<b>139,975 ㎡</b> (115 ㎡)	<b>332,382 ㎡</b>

\* Surugadai Campus (1) indicates Surugadai Clinical Laboratories.  
\* Surugadai Campus (2) indicates the Institute of Biomaterials and Bioengineering and Medical Research Institute and Nurses Dormitory.  
\* The numbers in parentheses independently show temporary or long-term rental grounds and buildings.

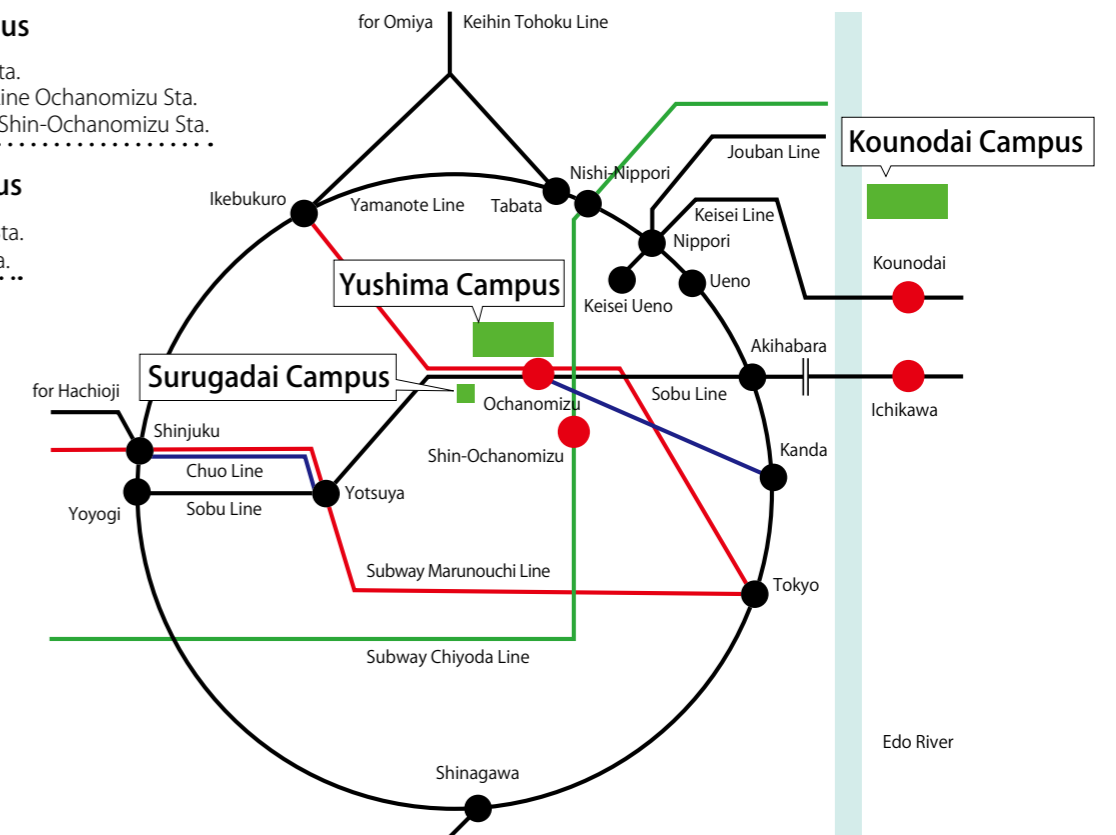
# Location

## Yushima Campus Surugadai Campus

JR Line Ochanomizu Sta.  
Subway Marunouchi Line Ochanomizu Sta.  
Subway Chiyoda Line Shin-Ochanomizu Sta.

## Kounodai Campus

Keisei Line Kounodai Sta.  
Sobu Line Ichikawa Sta.



## Symbol of Tokyo Medical and Dental University

This is the symbol of Tokyo Ikashika Daigaku (Tokyo Medical and Dental University), which has the following meaning:

1. This symbol is designed to show the history of development of Tokyo Medical and Dental University. This shape represents the plum blossom ; it is the symbol of Yushima Tenjin (Yushima Shrine) which exists in the same location as the University. Tenjin is the God of Knowledge.
2. The center circle of this symbol, the core of the flower, was the emblem of the former Tokyo Koto Shikaigakko (Tokyo National School of Dentistry) and the 5 petals around the core show the present University which has developed from that school.
3. The 5 petals express the Faculty of Medicine, Faculty of Dentistry, College of Liberal Arts and Sciences, Institute of Biomaterials and Bioengineering, and Medical Research Institute, and these 5 petals, which join together to make the flower bloom, represent the activity of the University.
4. The bold outline of these 5 petals suggests further development and progress in the future.

## New logo mark of Tokyo Medical and Dental University

# TMDU

## TOKYO MEDICAL AND DENTAL UNIVERSITY

Our university logo mark was designed based on TMDU which are the initial letters of Tokyo Medical and Dental University. It has following meanings;

1. By connecting the letters M and D, the logo mark implies fusion of Medicine and Dentistry.
2. Bold lines expresses confidence and strength which are the heritage of our university

