Tokyo Medical and Dental University (TMDU) Medical Postgraduate Programs

TMDU
TOKYO MEDICAL AND DENTAL UNIVERSITY

Cultivating Professionals with Knowledge and Humanity,
thereby Contributing to People's Well-being

www.tmd.ac.jp/english/

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Cultivating professionals with knowledge and humanity, thereby contributing to people's well-being

Tokyo Medical and Dental University (TMDU) have three divisions dedicated to graduate education and research: Medical and Dental Sciences, Health Care Sciences, and Biomedical Sciences (Education and Research). TMDU is composed of four undergraduate 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, and a university hospital attached to the Faculty of Dentistry.

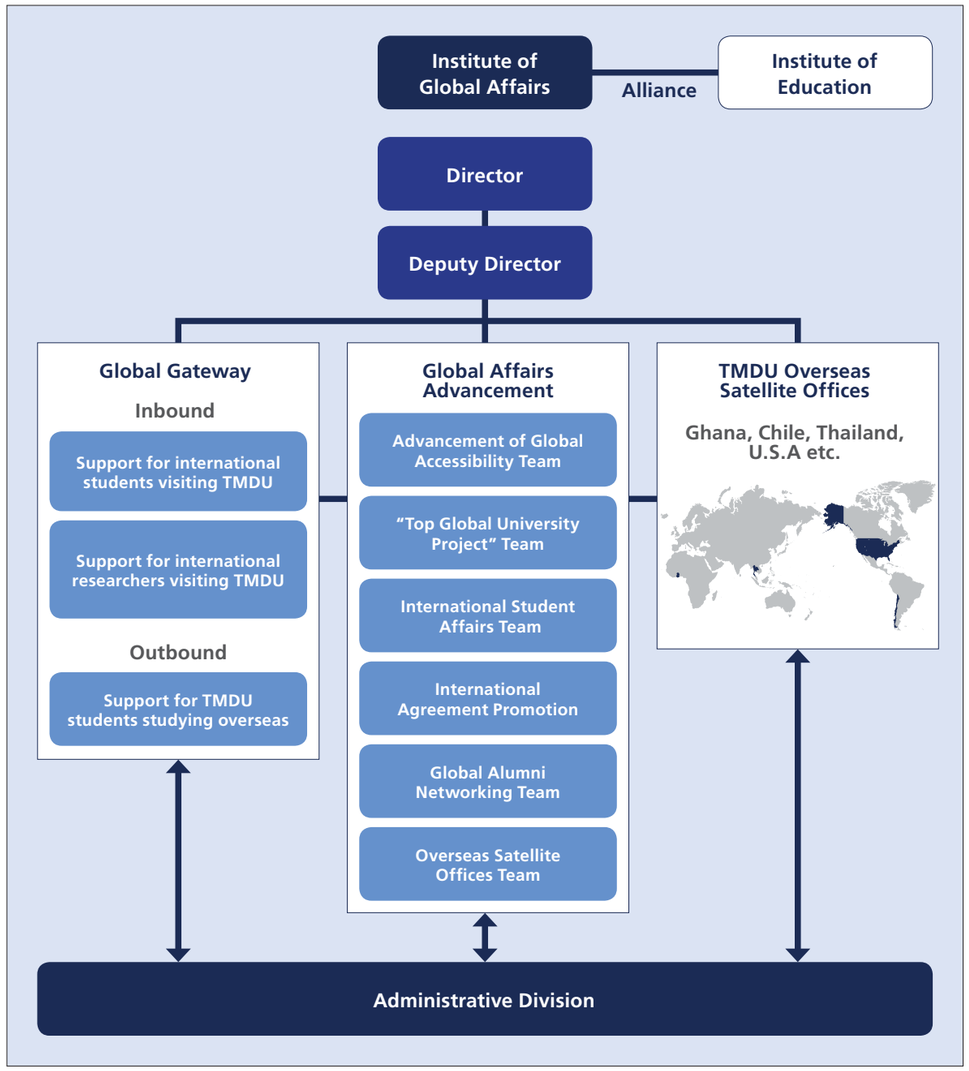
At TMDU we strive to produce scientists who expend every possible effort in seeking the truth, and who have the courage and ability to explore new areas, the tolerance and humility to respect diversity and accept new ideas, and the intellectual curiosity born of a broad education. These qualities are necessary for successfully engaging in clinical practice or research, and, indeed, are required for ensuring the future of mankind. With the above goals in mind, we determined "Cultivating Professionals with Knowledge and Humanity, thereby contributing to people's well-being" to be a statement of our mission. "Knowledge" consists of learning and techniques, and "Humanity" encompasses education and sensitivity.
In the Medical areas of TMDU Graduate School of Medical and Dental Sciences, we propose the message "from the leaders of the medical fields in Japan to the world leaders of the fields" and strive for realizing that.

We were selected as the representative universities for the "Super Global Universities of Japan, Top type" by Japanese government. Our goal will be to cultivate the leaders of medical researchers, clinicians, medical-education professionals who have the global mind for searching various issues in future and for developing the significant ways of solution. We encourage foreign students to enter the Graduate School of Medicine and are looking forward to meet with many foreign students from many areas of the world. We are preparing many types of attractive programs for foreign students. We would like to welcome highly sophisticated individuals who want to participate in our programs.

Institute of Global Affairs

Mission Statement

By strengthening international aspects of the TMDU and, in particular, promoting university-wide globalization in the fields of education,research, and medical treatment, the Institute of Global Affairs aims to assist in achieving TMDU's goal, as a world-leading integrated medical university, of "cultivating professionals with knowledge and humanity."



Doctoral Program: *Medical Sciences Track*

Admissions Policy

Applicants are required to have broad perspectives, creativity, autonomy, and a sense of ethics, to be able to logically and precisely express their ideas, and to possess the English language ability to carry out their research. They should also have a high degree of scholastic or practical capabilities in a field such as medicine, life sciences and technology, or bioengineering, and should possess additional interest and strong enthusiasm for research in these majors.

Curriculum Policy

This course involves coordination among disciplines and with other sectors in pursuit of a high degree of research, educational, and medical care expertise in the fields of medicine, ensures an ability to sufficiently cope with the ethical and social aspects required in life sciences, and provides education that emphasizes balance and organic links between course work and research training.

Diploma Policy

Degrees are conferred on students who complete the courses and acquire the credits required for course completion within the prescribed enrollment period, pass their thesis review and the final examination, and fulfill the following conditions:

- Have produced excellent research results and possess the research abilities to contribute to human health and well being.
- Have strong expertise and moral values and possess the capabilities to direct trail-blazing, original research.
- Possess a combination of multifaceted, specialized expertise related to medical education and the ability to take leadership roles in the worlds of medicine.
- Possess the ability to contribute to advances in pioneering medical care through clinical research as medical care professionals with high levels of expertise.

* Admissions, curriculum and diploma policies will be reexamined in AY2018.

Doctoral Program: *Life Science and Technology Track*

Admissions Policy

Those who choose to pursue this program must meet all the following conditions:

- Possess the English capabilities related to the scholarship required for studies after admission and the ability to communicate in English regarding life sciences and technology.
- Have the desire to systematically, intensively acquire wide ranging life sciences and technology expertise.
- Be eager to make future contributions to society as teachers or researchers with a high level of specialization in life sciences and technology disciplines.
- Possess profound learning and superior abilities to perform research in life sciences and technology disciplines.
- Have a deep interest in life sciences and bio-engineering, as well as the wide-ranging perspectives to lead the way in integrated disciplines, and possess creativity and independence.
- Work very well with colleagues and possess the ability to logically, precisely express their ideas.

Curriculum Policy

The education provided in this course emphasizes international perspectives and the potential of the fields of disease research and bio-industry, as well as the pursuit of a high level of expertise in life sciences and technology disciplines. Furthermore, it will also take into consideration the ethical and social characteristics required in the fields of medicine.

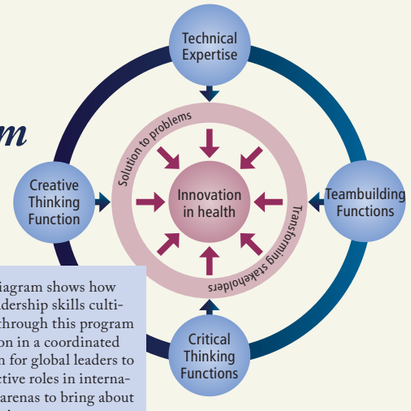
Diploma Policy

Degrees are conferred on students who complete the courses and obtain the credits required for course completion within the prescribed enrollment period; pass their thesis review and the final examination; and fulfill one of the following conditions:

1. Have produced excellent research results and possess the research abilities to contribute to advances in the innovative and interdisciplinary fields of life sciences and technology
2. Have strong expertise and moral values and possess the ability to contribute to the cultivation of the next generation of professionals in the fields of life sciences and technology.
3. Possess considerable expertise and skills related to life sciences and bio-engineering and the ability to contribute to the advancement of medical and bio-industries through cutting-edge technological innovations

* Admissions, curriculum and diploma policies will be reexamined in AY2018.

Health Sciences Leadership Program
(G-HSLP)



This diagram shows how the leadership skills cultivated through this program function in a coordinated fashion for global leaders to play active roles in international arenas to bring about innovation

Program Mission

To create a community of future world leaders who will advance health sciences and raise the level of health all around the world through innovation in bioscience research, global health/healthcare policy and healthcare industries.

G-HSLP Courses/ Workshops; Attainable Skills

Skills Key:
○=main skill covered in course
◆=subskill

Skills

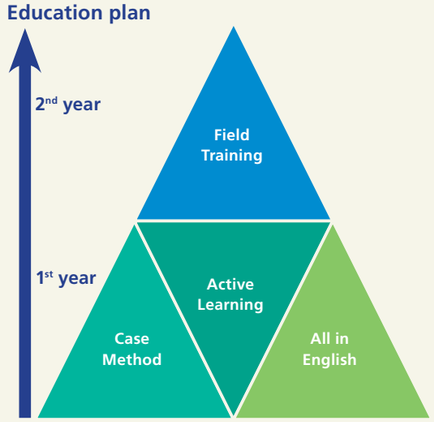
Courses Style	Courses	Workshops: Critical Thinking	Creative Thinking	Leadership	Critical Communication	Research Presentations	Academic Writing	Team Building	Industry Knowledge and Career Path
Skill Building	Leadership	◆	◆	○	◆			◆	◆
Skill Building	Effective Research Presentations	◆			○	○			
Skill Building	Design Thinking	◆	○		○			◆	
Skill Building	Academic English	◆	◆		○	◆	◆		
PBL	Problem Based Learning	○	◆	◆	○	◆	◆	◆	◆
		Critical Thinking and Analytical Skills	Creative Thinking	Leadership	Critical Communication	Research Presentations	Academic Writing	Team Building	Industry Knowledge and Career Path
	Description of Skills Scope	Analyzing, synthesizing and evaluating information including research data	Creative approaches to data collection, analysis and problem solving	Effective delegation, inspiration and communication	Argument construction and persuasive speech; Debate and negotiation	Poster and conference Presentations; Presentation abstracts; Question and answer sessions	Publishing; Argument organization; Grant writing; Peer review activities	Collaborative communication and problem solving	Pharmaceutical; Health policy and governance; Engineering; Technology; Entrepreneurship; Job applictions

Master of Public Health in Global Health (MPH) Course

***About Harvard/Johns Hopkins Lecture Series (HJLS)**
Tokyo Medical and Dental University (TMDU) collaborates with renowned professors from Harvard T.H. Chan School of Public Health (HSPH) and Johns Hopkins Bloomberg School of Public Health (JHSPH), the two world's top school of public health, and offers the MPH students the world's top class public health education in Tokyo.

The TMDU-MPH program was designed to advance your knowledge and skills in the core public health disciplines while preparing you to generate/ translate/ disseminate public-health-related knowledge in real-world contexts.

Education plan



Program components:

First year: In-class course work at our Tokyo campus
Second year: Practicum year (original public health research about the country of your choice)

- Internship at an international organization (optional)
- Completion of a master's thesis (required)

These programs are shown as examples.

Pichayanoot Rotkrua
Thammasat University (from Thailand)

Memories are timeless treasures of the heart

AT THE BEGINNING of spring 2006, a direct JAL flight from Bangkok, Thailand brought me to the whole new world of Japan. This was my first journey abroad. Sakura cherry blooming around the town welcomed me warmly even though the weather was so cold. Even now, every time I see the cherry blossom, it always recalls me to my first day in Japan, where my life was changed forever.

I came to TMDU on a Japanese Government (Monbukagakusho: MEXT) scholarship. I elected to study here because my professor, who graduated from a Japanese university himself, advised me that TMDU was the topranked medical school in Japan. I would be able to conduct cancer research as I wished. Professor Yasuhito Yuasa kindly accepted as a graduate student in the Department of Molecular Oncology at the Graduate School of Medical and Dental Sciences.

Everyone in the laboratory was so nice and friendly. They always helped me, not only with educational issues, but also in my everyday life. Although I could not understand the Japanese documents many times, they never refused to lend a hand.

One time, I felt severely homesick and depressed. At that time, going back to see my family in Thailand was the only thing on my brain, but something good happened. Everyone in my laboratory tried to cheer me up in several ways. I suddenly realized that my family, which I had thought was only in Thailand, was actually in Japan as well. If you are reading this story, please accept my appreciation and thanks.

For scientific experience, my own research involved carcinogenesis and diagnosis of gastric cancer, which gave me a strong background in biomedical research. I improved my communication skills by writing a scientific article in the International Journal and having opportunities to present my works in many international conferences. I also had an extracurricular experience as a Research Assistant (RA) and Teaching Assistant (TA) in my department. My responsibilities were to perform experiments related to research projects, including planning, testing and data analysis, and preparing teaching materials for laboratory classes. There is no doubt in my mind that my entire experience at TMDU prepared me rather well to be a good scientist in the future.

Time has gone so fast. The six years spent completing Master's and Doctor's degrees in Japan matured me; now I am ready to follow my next dream. After coming back to Thailand, I am working as a lecturer in the Division of Biochemistry of the Department of Preclinical Science in the Faculty of Medicine at Thammasat University. I love teaching and feel very happy every time I participate in class with my students. I always keep in mind how well I used to be taught by my teachers. Therefore, my promise to my students is the same.

I will train them the best way I can.Learning to be a professional with happiness is the goal. The serious shortage of medical practitioners in Thailand is an urgent issue, so producing qualified staff is necessary. Being a teacher has changed my attitude. Once I used to think that the feeling on my graduation day was the greatest moment, but I was wrong. I have discovered that the pride I feel for my students' successes on their graduation day is more truly touching.

Finally, let me say that Japan is my second home. I never felt any regret to be there. If life is a work of art, living and studying in Japan is mymaster piece. Memories are timeless treasures of the heart. You will be in my heart forever, TMDU.

Feeling happy with my medical students on their graduation day.

Teaching a graduate student to perform cell culture.

Kofi Dadzie Kwofie
Department of Environmental Parasitology TMDU (from Ghana)

The TMDU Journey so far…

Receiving a warm welcome from staff and students of the Environmental Parasitology Section

"INTELLIGENCE, PLUS CHARACTER—that is the goal of true education." Martin Luther King Jr.'s words embody my perception of what a holistic education should be and also describe what I find at TMDU.

I come from Ghana on the Gulf of Guinea within the western bulge of Africa. I am a first-year Environmental Parasitology doctoral student at TMDU. Previously, I studied biological sciences and clinical microbiology in both un dergraduate and master's degree programs at Kwame Nkrumah University of Science and Technology, one of Ghana's most prestigious universities. As an undergraduate, I undertook internship programs during my summer holidays at the Noguchi Memorial Institute for Medical Research (NMIMR), a notable research center named after the famous Japanese researcher, Dr. Hideyo Noguchi, who died in Ghana while working on yellow fever. I discovered my passion for research at NMIR, subsequently becoming a research assistant there.

As a young biomedical research scientist at NMIMR, I was involved in a few research projects on infectious diseases with protozoan causes such as malaria, trypanosomiasis, leishmaniasis and toxoplasmosis. I developed a particular interest in issues concerning infectious diseases affecting Africa and the world at large. At NMIMR, which is a major collaborator with TMDU, I received mentorship and acquired skills and values while working with expert Ghanaian and Japanese researchers. Among those researchers was my current PhD supervisor, Prof. Nobuo Ohta, who has inspired and encouraged me. My desire to pursue a PhD degree at TMDU was stimulated by my admiration of the manner in which my immediate supervisors, Dr. Mitsuko Ohashi and Dr. Irene Ayi (alumnus of TMDU), conducted their research, paying attention to every detail in their quest for excellence.

It was a dream come true when I finally arrived in Japan in October 2015. I had become a student at TMDU. My feelings were a mixture of exhilaration and anxiety. My first impressions of TMDU fulfilled my high expectations, virtually confirming the positive standpoint I always had concerning TMDU. Despite the generally cold weather, the love shown me by staff and students in my department keeps me warm. My initial anxiety has been dissipated by the excitement and passion with which both students and staff in my department conduct their research. One thing I have noticed is the slight difference in studies being conducted in Ghana and in Japan: whereas most studies in Ghana focus on disease epidemiology, those in Japan tend to focus on basic research. TMDU's commitment to cultivating professionals with knowledge and humanity is vividly seen in the contents of our weekly Global Leadership Program (GLP) lecture series. These lectures are opportunities to meet experts in different fields related to global disease prevention using a multifaceted approach. I look forward to acquiring important skills and ideas in these areas and hope to effectively combine them in combating the menace of infectious diseases in Africa and elsewhere through high-quality research.

Life outside the laboratory gets better with every passing day. The language barrier was initially one of the hurdles I had to clear, but the Japanese language kenshu course has helped me appreciate everyday Japanese culture, and also equipped me with a few Japanese phrases to enable me to get around. I have also been able to make a lot of good friends. I believe these associations will provide a strong foundation for future international research collaboration.

Finally, when I look to the future, I am confident that after four years at TMDU I will be a better person than I was when I arrived here.

To everyone who is helping me make my dream a reality, I say: Doomo arigatou gozaimashita!!!

With fellow students of the Disease Prevention Science Course (During a study tour of the Toshiba ScienceMuseum)

Mohammad Omar Mashal
3rd year student, Department of Global Health Entrepreneurship,Graduate School of Medical and Dental Sciences

Contributing to better global health by cultivating professionals with knowledge and humanity at TMDU: a world-class center of excellence in public health research

ON GRADUATING WITH an MD from Kabul Medical University in Afghanistan, my dream was to pursue quality graduate education so as to contribute to the health and wellbeing of the Afghan people. I therefore joined the Public Health Leadership graduate course at TMDU in 2013.

Prior to TMDU, I was a national coordinator of a polio eradication program with Afghanistan's Ministry of Public Health. This work made me realize the great impact quality public health professionals can have.

The attributes of Japan, and the diverse, multicultural ethos of TMDU, notably the professional mentorship within the Department of Global Health Entrepreneurship, which draws on decades of experience in international public health research, inspired me. This supportive environment, coupled with the department's more than 10 years of research practice in public health in Afghanistan, has empowered me to gain skills and understanding of public health from a global perspective.

At TMDU, I have had valuable opportunities to participate in public health and disease prevention courses and seminars, interacting with students and experts from different nations and learning from their experiences. The combination of studying on my own, interacting with international students and following a path illuminated by global experts has helped me enhance my skills while deepening my knowledge.

Evidence-based learning and practice are among my foremost goals as a graduate student. At TMDU I have been doing research relevant to the healthcare financing system in Afghanistan and am currently involved in another project in collaboration with the Ministry of Public Health on school-based non-communicable disease prevention and control in Kabul. I am proud to be an entrepreneur in this regard. Learning at TMDU transcends frontiers.

Japan is renowned for its excellent health indicators, including a universal health coverage system and the highest life expectancy. Evidence-based health research has been a big contributing factor. Although Afghanistan has been making progress in health care in recent years, there is a need for further improvement in disease prevention and control as well as for a comprehensive evidence-based health system.

In addition to my research, together with my family I am enjoying living in Japan. I will have a wealth of wonderful memories.

On completing the PhD course, I am keen to work with the Ministry of Public Health in Afghanistan. Initially, my priority will be to help strengthen the health system and community-based prevention and control of communicable and non-communicable diseases. I will be seeking to upgrade my field experience and share it with coworkers in international public health. I hope my academic training plus the professional skills I am acquiring at TMDU will enable me to contribute to a well-functioning public health system in Afghanistan and ultimately to the improvement of human health around the world.

With Prof. Nakamura and colleagues at a welcome gathering, October 2014

Special lecture by Dr. Hai Rim Shin on Healthy City, July 2015

Medical Sciences

Maxillofacial and Neck Reconstruction

Department	Chief	Research Theme
Plastic and Reconstructive Surgery	OKAZAKI Mutsumi	1. Clinical study concernig sennsory recovery and change of shape in reconstructed beast 2. Development of functional and aesthetic reconstruction following cancer ablation in head and neck 3. Basic research on regeneration of the nail 4. Evaluation of blood supply to various flaps using ICG 5. Development of functional and aesthetic reconstruction for facial paralysis
Head and Neck Surgery	ASAKAGE Takahiro	1. Anatomy of skull base 2. Relationship between HPV and head and neck cancer 3. Standardization of neck dissection 4. Development of skull base surgery 5. Endoscopic diagnosis and transoral surgery for superficial pharyngeal carcinoma
Radiation Therapeutics and Oncology	YOSHIMURA Ryoichi	1. Development of brachytherapy for oral cancer, prostate cancer, and uterine cancer 2. Clinical research and development of IMRT and SRT 3. Development of radiotherapy in multimodality treatment for cancer

Bio-Matrix

Department	Chief	Research Theme
Cell Biology	NAKATA Takao	1. Optogenetic control of intracellular signaling 2. Cell biological approach using optogenetics to understand the mechanism of calcium signaling 3. Applications of optogenetics to regenerative medicine 4. Study of olfactory system in vivo model system using optogenetics
Medical Biochemistry	HATA Yutaka	1.Study on the tumor suppressor Hippo pathway and the development of YAP1/TAZ-targeted drugs 2.Study on the tumor suppressor RASSF proteins 3.Study on skeletal muscle progenitor cells and the development of drugs against sarcopenia 4.Study on stress granules in mammals 5.Development and analysis of senescent accelerating animals
Joint Surgery and Sports Medicine	KOGA Hideyuki	1. Regeneration and reconstruction of bone and joint tissues using mesenchymal stem cells 2. Mechanism analysis and development of treatment methods of bone- and joint-related inflammation and fibrosis 3. Analysis of mechanism for bone- and joint-related pain and deveopment of its treatment 4. Analysis of sports injury mechanism and development of its treatment 5. Development of new joint prosthesis

Public Health

Department	Chief	Research Theme
Global Health Promotion	FUJIWARA Takeo	1. Social epidemiology (impact of social inequality, social capital, social network, and social support on health) 2. Life-course epidemiology (impact of child poverty and adverse childhood experiences on health) and international comparison study 3. Prevention on child abuse and neglect 4. Disaster and child and their family's mental health 5. Nutrition during pregnancy or early childhood and health
Environmental Parasitology	IWANAGA shiroh	1. Research on drug resistance mechanism in malaria parasites 2. Research on developmental stages control by transcriptional factors in malaria parasites 3. Research on a communication system by small RNAs in blood fluke, Schistosoma japonicum 4. Research on mechanisms of action of novel anti-schistosolmal drugs 5. Research on developmet systems of parasitic helminth
Forensic Medicine	UEMURA Koichi	1. Studies on the mechanisms of cell death induced by drugs 2. Forensic toxicology / Alcohol medicine 3. Forensic pathology 4. Drug analysis
Health Care Management and Planning	KAWAHARA Kazuo	1. The significance of public healthcare planning, its challenges, and influences on the healthcare system 2. Structural analyses and policy choices concerning national blood services 3. The government role in preventing medical errors 4. Structural analyses of healthcare system in the community 5. Systemizing and evaluating public health policies
Research Development	TAKASE Kozo	1. Management technology for comprehensive clinical administration 2. Development and procurement of hospital information system 3. Electronic medical record and clinical pathway 4. Medical malpractice and medical law suit 5. Science and ethics in medicine and practice
Health Policy and Informatics	FUSHIMI Kiyohide	1. Health information management for the development of DPC case mix system and PDPS payment system 2. Quantitative analytica method for plannning and assessment of health care providing system 3. Methodology for hospital profiling and assessment of hospital functions 4. Utilization of electric health data of health system 5. Health cost analysis and hospital management
Insured Medical Care Management	AI Masumi	1. Development of methodology and materials for education on medical insurance system and rules for insured medical treatment 2. Studies on management and supports for billing for medical service fees at insurance medical institutions 3. Studies on affairs of medical insurance system and provision of medical services
Global Health Entrepreneurship	NAKAMURA Keiko	1. International development of trade and workforce for health services 2. Development of social business models for equitable delivery of healthcare 3. Lessons for healthcare entrepreneurs from the Healthy Cities Program 4. Evaluation of health impact of climate change 5. Universal health coverage in ageing society

Gerontology and Gerodontology

Department	Chief	Research Theme
Geriatrics and Vascular Medicine	Under Selection	1. Cell biological mechanisms of atherogenesis 2. Mechanisms involved in dyslipidemia 3. Mechanisms of aging and age-related diseases

Comprehensive Patient Care

Department	Chief	Research Theme
Laboratory Medicine	TOHDA Shuji	1. Molecular diagnostic tests for cancer and infectious diseases 2. Molecular pathogenesis of leukemia/lymphoma cells and its application for drug sensitivity tests 3. Search for molecules to regulate leukemia stem cells for developing novel molecular-targeted drugs 4. Analysis for pathophysiology of cases showing abnormal data in clinical laboratory tests
Department of Intensive Care Medicine	SHIGEMITSU Hidenobu	1. System analysis concerning the risk factors for patient safety in the wards of Japanese hospitals and the relationship with Rapid Response System (RRS) 2. Investigation of pathophysiology of ARDS by using isolated lung perfusion model 3. Investigation into pathophysiology of DIC in septic shock and development of treatment
	TAKAHASHI Hideo	1. System analysis concerning the risk factors for patient safety in the wards of Japanese hospitals and the relationship with Rapid Response System (RRS) 2.Development and assesment of a novel e-learning system for the staffs who are involved in the Patient safety
Liaison Psychiatry and Palliative Medicine	MATSUSHIMA Eisuke (Retiring on March 31, 2018)	1. Clinical and psychophysiological studies on anxiety and depression associated with psysical illness 2. Clinical and psychophysiological studies on delirium 3. Studies on cardiac autonomic function in psychiatric diseases and epilepsy 4. Studies on psycho-social aspects of cancer patients and their family 5. Psychophysiological studies and functional brain imaging on neuropsychiatric disorders
Medical Education Research and Development	TANAKA Yujiro	1. Planning and assessment of undergraduate medical education 2. Strategy and assessment of postgraduate and continuing medical education 3. Underlying medical cooperation and technology for the highly advanced medical care
Acute Critical Care and Disaster Medicine	OTOMO Yasuhiro	1. Research on mechanisms of biological responses to severe stress and development of new therapeutic strategy 2. Clinical and basic research in related to serious torso/multiple trauma and epidemiology of trauma 3. Research on coagulopathy following traumatic injury/sepsis 4. Research on disaster medicine for largely scaled disasters such as earthquake and terrorism 5. Basic research on lipid mediators involved in multiple organ dysfunction after hemorrhagic shock
Clinical Oncology	MIYAKE Satoshi	1. Palliative care for cancer patients and theie family; theory and practice 2. Precision medicine for cancer 3. Analysis of genetic profile for carcinoma of unknoen primary 4. Role of biomarkers for the effent of novel anti-cancer drugs 5. Communication and consensus building in cancer therapy and care
Professional Development in Health Sciences	TAKADA Kazuki	1. Needs assessment in health care 2. Needs assessment in professional development in health science fields 3. Interprofessional education curriculum development

Cognitive and Behavioral Medicine

Department	Chief	Research Theme
Neuroanatomy and Cellular Neurobiology	TERADA Sumio	1. Molecular mechanism of cytoskeletal dynamics 2. Spectroscopy development for a biomolecular localization and network analysis 3. Development of novel biosensors for cell biological applications 4. Microscopy development to visualize the dynamics of small chemical molecules
Systems Neurophysiology	SUGIHARA Izumi	1. Development mechanisms and functional significance of the compartmentalization in the brain 2. Neuronal circuitry mechanisms in sensorimotor, autonomic and cognitive control 3. Sensorimotor integration in the oculomotor system
Pharmacology and Neurobiology	TANABE Tsutomu	1. Regulation of Microglial Ca channel function in Neuroinflammation/Neurodegenerative diseases 2. Regulation of Macrophage Ca channel function in Inflammatory bowel disease and Rheumatoid arthritis 3. Energy metabolic imaging at single cell level of neuron, microglia and astrocyte in the degenerative area of the mouse model of various neurodegenerative diseases 4. Neural mechanisms of pleasure and motivation in feeding 5. Alteration of Neuron-Glia interaction in Neurological disorders
Ophthalmology and Vision Science	OHNO Kyoko	1. Study on the mechanism of high myopia 2. Study on the mechanism of macular diseases 3. Study on the mechanism of uveitis 4. Development of new diagnostic tools in uveitis
Otorhinolaryngology	TSUTSUMI Takeshi	1. Molecular biology in hearing and dysequillibrim disorder 2. Clinical studies on dysequillibrim disorder and its treatment 3. Electrophysiological research in cochlear pathology (basic and clinical researches) 4. Investigation of images and image-guided surgery in Otorhinolaryngology 5. Development of Biomarkers in diagnosing carcinoma in external acoustic canal
Neurology and Neurological Science	YOKOTA Takanori	1. Gene therapy for neurodegenerative diseases with new oligonucleotide drugs 2. Research of RNA pathophysiology and development of miRNA biomarkers for neurological and neuroimmunological diseases 3. Research on pathogenic mechanisms and a strategy for an early treatment of Alzheimer's disease 4. Research for pathophysiology and new therapy of stroke 5. Development of propagation and development primate model of neurodegenerative diseases
Psychiatry and Behavioral Sciences	NISHIKAWA Toru (Retiring on March 31, 2018)	1. Study on molecular and genetic pathophysiology of schizophrenia and development of novel therapeutics 2. Study on the relationship between autoantibodies against proteins of neurotransmitter systems and psychiatric symptoms 3. Study on molecular mechanisms of stress-related mental disorders 4. Function and metabolism of endogenous D-serine in the mammalian brain and its application for pharmacotherapy of neuropsychiatric diseases 5. Brain imaging study on mental disorders
Forensic Mental Health	OKADA Takayuki	1. National and international epidemiology study of forensic mental health system 2. Research on bio-psycho-social factors of various social problematic behavior 3. Framework formulation for enhancement in the qulity of forensic psychiatric examination 4. Study on legal issues in mental health and psychiatric issues in law 5. Mental health care ethics

Profile of Faculty (Course: Medical Sciences)

Department	Chief	Research Theme
Neurosurgery	MAEHARA Taketoshi	1. Development of novel treament for brain tumor with use of biomarker assay and molecular imaging 2. Establishment of appropriate surgical intervention for cerebrovascular diseases based on clinical pathophysiiological analysis. 3. Analysis on pathophysiological mechanism of intractable epilepsy and on the effectiveness of its surgical treatment. 4. Investigation on the mechanism of secondary neuronal damage and higher brain dysfunction by neurotrauma and on the method for its prevention. 5. Analysis on the correlation between genetic background and chlinical characteristics of patients with moyamoya diesese.
Endovascular Surgery	NEMOTO Shigeru	1. Investigation of microvascular anatomy and vasculogenesis in central nerveous system and head and neck region. 2. Integration of the fluid engineering technology into the endovascular field in an effort to explore new surgical treatment. 3. Analysis of platelet aggregation function during perioperative period in endovascular surgery. 4. Invention and assessment of endovascular devices applied bioactive material technology. 5. Research for less invasive surgical approach for vascular disease.

Bio-Environmental Response

Department	Chief	Research Theme
Immune Regulation	KARASUYAMA Hajime	1. Elucidation of molecular mechanisms underlying chronic allergic inflammation by using engineered model animals 2. Role of basophils in immune disorders 3. Role of basophils in protective immunity 4. In vivo imaging of basophils
Molecular Virology	YAMAOKA Shoji	1. Molecular studies on the replication and pathogenicity of human retroviruses 2. Viral proteins and signal transduction 3. Mechanistic studies on cell death inhibition in tumor cells
Immunotherapeutics	KANNAGI Mari	1. Development of anti-tumor vaccines for adult T-cell leukemia. 2. Analysis of immunological risks for HTLV-1-related diseases in virus carriers. 3. Innate immune-mediated pathogenesis in chronic virus infection. 4. Molecular mechanism of HIV replication especially related to HIV-1 integrase.
Pediatrics and Developmental Biology	MORIO Tomohiro	1. Research on molecular background of primary immunodeficiency and development of novel gene/ cell therapy for the disorder 2. Analysis of genetic background and development of novel therapeutic approach for pediatric malignancy 3. Analysis of pathogenesis in pulmonary hypertension and hereditary arrhythmia 4. Research on molecular mechanisms of disorder of sex development and congenital adrenal hyperplasia 5. Molecular and biochemical analysis of intractable pediatric disorders in neurology, nephrology, neonatology, and other genetic disease fields
Rheumatology	KOHSAKA Hitoshi	1. Clinical Immunological research on rheumatoid arthritis 2. Clinical Immunological research on polymyositis and dermatomyositis 3. Clinical Immunological research on systemic sclerosis 4. Clinical research on the collagen and rheumatic diseases in childhood and transitional period
Dermatology	YOKOZEKI Hiroo	1. Analysis of the roles epidermal cells by iPS cells 2. Analysis of the mechanism and treatment for atopic dermatis and contact hypersensitivity 3. Analysis of the mechanism of seat dysfunction 4. Analysis of the role of eosinophils and basophils in allergic skin diseases 5. Gene analysis and development of gene therapy for skin malignant dideases

Systemic Organ Regulation

Department	Chief	Research Theme
Human Pathology	EISHI Yoshinobu	1. Histogenesis of early gastrointestinal cancer 2. Diagnosis of gastrointestinal protruded lesion 3. Pathogenesis of sarcoidosis 4. Etiology of organ-specific autoimmune disease 5. New hypothesis of the mechanism of endogenous infection
Physiology and Cell Biology	KITAGAWA Masanobu (concurrently assigned)	1. Regulatory network of metabolism between bone and internal organs 2. Neuronal or vascular regulation of bone metabolism 3. Applicaton of transparent bone technique for tooth or bone diseases 4. Regulatory mechanism of bone metabolism or bone metastasis by non-coding RNA 5. Identification of the cell of origin for malignant tumors and the mechanism of malignant transformation
Resipiratory Medicine	INASE Naohiko	1. Pulmonary fibrosis in interstitial pneumonia 2. Causative antigen and susceptability gene of hypersensitivity pneumonitis 3. Airway remodeling in bronchial asthma 4. Cause of sarcoidosis 5. Pathophysiology of sleep apnea syndrome
Gastroenterology and Hepatology	WATANABE Mamoru	1. Therapeutic Development for inflammatory bowel disease by immunoregulation and regenerative medicine 2. Functional analysis of the intestine using primary cell curture 3. Development of regenerative medicine in gut and liver 4. Analysis of molecular mechanisms for therapeutic resistance of hepatitis viruses, and development of innovative treatment 5. Carcinogenesis in gastroenterology
Specialized Surgeries	UETAKE Hiroyuki	1. Combination therapy of surgery and chemotherapy for colorectal cancer 2. Development of effective treatment strategy for the breast cancer 3. Development of new technology in peripheral vascular surgery 4. Development of new technology and treatment in pediatric surgery
Cardiovascular Medicine	UCHIDA Shinichi (concurrently assigned)	1. Ischemic heart disease 2. Heart Failure/cardiomyopathy 3. Arrythmias
Cardiac Electrophysiology	HIRAO Kenzo	1. Arrhythmia : Study on the mechanisms of genesis of atrial fibrillation 2. Arrhythmia : Study on anticoagulantion therapy on AF 3. Arrhythmia : Study on the mechanisms of genesis of RVOT-PVC 4. Arrhythmia : Study on the mechanisms and treatment of ATP-sensitive AT 5. Arrhythmia: Study on magnetocardiogram
Anesthesiology	KITAGAWA Masanobu (concurrently assigned)	1. Elucidation of anesthetic toxicity using iPS cells 2. Studies on propofol infusion syndrome 3. Studies on the effect of anesthetics on the developing brain 4. Studies on the mechanisms of cerebral pain processing and pain chronification by human functional magnetic resonance imaging and positron emission tomography

Department	Chief	Research Theme
Perioperative medicine	UCHIDA Tokujiro	1. Pathophysiology of perioperative organ dysfunction 2. Biomarker analyses for perioperative organ dysfunction 3. Perioperative monitoring of hemostasis and coagulation 4. Impact of anesthetic technique on postoperative outcome 5. Perioperative database analyses for clinical factors predicting postoperative organ dysfunctions
Cardiovascular Surgery	ARAI Hirokuni	1. Study to improve safety and quality of coronary artery bypass grafting 2. Development of new surgical treatment for ischemic myocardial disease 3. Development of surgical technique of beating mitral valve plasty 4. Heart and lung transplantation 5. Regenerative therapy for severely failing heart to improve cardiac function
Nephrology	UCHIDA Shinichi	1. Water and solutes transport in the kidney 2. Development of novel therapies for the kidney diseases and channelopathies 3. Expression and functional studies of channels and transporters 4. Clarification of the pathogenesis of chronic kidney disease and development of novel therapies 5. Generation and analysis of gene-targeted mice
Comprehensive Reproductive Medicine	MIYASAKA Naoyuki	1. Research of physiology, endocrinology and metabolism in reproductive medicine 2. Mechanism of age-dependent female physical and mental changes 3. Clinical and basic research in perinatal medicine
Urology	FUJII Yasuhisa	1. Development of novel minimally invasive surgery for kidney, bladder, and prostate cancer (RoboSurgeon Gasless Single- port Surgery) 2. Development of bladder preservative therapy for invasive bladder cancer 3. Development of clampless and sutureless partial nephrectomy for kidney cancer 4. Development of focal therapy for prostate cancer 5. Genetic analysis and stem cell research for genitourinary disease
Gastrointestinal Surgery	Under Selection	1. Studies on carcinogensis and tumor extension of digestive tract cancer 2. Studies on squamous field cancerization 3. Development of new technology for esophageal surgery 4. Development of effective treatment strategy for gastric cancer 5. Development of effective treatment strategy for colorectal cancer
Thoracic Surgery	OKUBO Kenichi	1. Minimally invasive surgery for lung cancer 2. Induction therapy for locally invading lung cancer 3. Surgical treatment for metastatic lung tumor 4. Adjuvant chemotherapy for lung cancer surgery 5. Multimodality treatment fo malignant pleural mesothelioma

Advanced Therapeutic Sciences

Department	Chief	Research Theme
Clinical anatomy	AKITA Keiichi	1. Anatomic bases of functional preservation in surgical procedures 2. Developmental biological analyses for further understanding of anatomical issues 3. Comparative anatomic and developmental biological analyses of the spatial arrangement of the organs
Systems BioMedicine	ASAHARA Hiroshi	1. Four dimensional gene expression database construction and its application to regenerative medicine 2. The function of non-coding RNA in development and inflammatory diseases 3. Systems approaches for developmental biology and medicine 4. Genome dynamics during embryogenesis examined by new technique 5. In silico medical science integrating bioinformatics and imaging technique
Comprehensive Pathology	KITAGAWA Masanobu	1. Analysis of the mechanisms for retrovirus-induced leukemogenesis and host reaction 2. Molecular pathological analysis of the pathogenesis of myelodysplastic syndromes 3. Correlation of retroviral infection and apoptosis-related signal pathways in mouse/human cells 4. Molecular pathological study of the mechanisms for drug resistance of neoplastic cells 5. Interactions of neoplastic cells with stromal cells in hematopoietic neoplasms
Molecular Oncology	TANAKA Shinji	1. Molecular analysis of refractory malignancies including liver, pancreatic and scirrhous gastric cancers 2. Development of molecularly targeted therapy for refractory malignancies 3. Cancer epigenetics/epigenomics and clinical application in refractory malignancies 4. Research of cancer stem cells and targted therapy 5. Development of regenerative medicine using stem cell research
Hematology	MIURA Osamu	Intracellular signaling mechanisms underlying development and therapy resistance of leukemia Molecular pathogenesis of lymphoid malignancies and development of their novel therapies Pathogenesis of EB virus-related diseases and development of their effective therapies
Immunotherapy for Hematopoietic Disorders	KAWAMATA Norihiko	1. Genetic analysis of Hematopoietic Disorders 2. Development of Animal Models for Hematopoietic Disorders 3. Development of Immunotherapy for Hematopoieitc Disorders
Molecular Endocrinology and Metabolism	UCHIDA Shinichi (concurrently assigned)	Molecular Mechanism of Metabolic Syndrome and Lifestyle Diseases and Their Therapeutic Strategies Molecular Mechanism of Chronic Inflammation in Lifestyle Diseases and Its Clinical Implications Epigenetic Regulation of Lifestyle Diseases and Its Clinical Implications Molecular Mechanism of Hormone-producing Tumors and Their Pathophysiologies Molecular Genetics of Congenital Endocrine and Metabolic Disorders
Hepatobiliary and Pancreatic Surgery	TANABE Minoru	1. Establishment of multidisciplinary treatment for HPB malignancies based on surgery 2. Identification of new strategies for the minimum invasive surgery in HPB dieseases 3. Development of therapeutic agents and markers related to drug-susceptilility for HPB malignancies 4. Clinical and basic research for liver transplantation 5. Pathophysiological research for liver microcirculation
Orthopaedic and Spinal Surgery	OKAWA Atsushi	1. Bone and cartilage metabolism 2. Development and evaluation of biomaterials for clinical application 3. Mechanism of spinal ligament ossification 4. Development of measuring device for spinal cord magnetic signals 5. Research of bone and spinal metastatic tumors
Human Genetics and Disease Diversity	TANAKA Toshihiro	Elucidation of genetic architecture of human metabolic diseases using genome and meta-genome infromation Biomaker identification for genome-based personalized medicine Pharmacogenomics Functional Genomics Statistical Genetics
Minimally Invasive Medical Treatment	KOJIMA Kazuyuki	1. Investigation and research for the social needs identification of minimally invasive medical treatment in the next generation of medical and dental area 2.Medical equipment and development of treatment to meet the needs of minimally invasive medical treatment in the next generation of medical and dental field 3.Research and development of the education curriculum and evaluation methods of minimally invasive treatment in the medical and dental field 4.Development and operation of minimally invasive treatment of industry-academia cooperation in the medical and dental field 5.Development and operation of technology certification strategy of minimally invasive treatment in medical and dental area

Profile of Faculty (Course: Medical Sciences)

Life Science and Technology

Department	Chief	Research Theme
Molecular Cell Biology	SHIBUYA Hiroshi	1. Molecular mechanism in cellular signaling of growth and differential factors 2. Molecular mechanism in the onset and progress of diseases 3. Molecular mechanism in the early deveopment
Developmental and Regenerative Biology	NISHINA Hiroshi	1. Study on signaling pathways that regulate cell survial and death 2. Study on signaling pathways that regulate embryonic stem cell proliferation and diffferentiation 3. Study on liver formation and regeneration using mice and fish 4. Study on molecular mechanisms regulating circadain clock
Immunology	TSUBATA Takeshi	1. Study on the role of glycan signals in humoral immune responses 2. Study on the role of protein degradation pathways in antibody responses 3. Study on the mechanisms for B lymphocyte suppression 4. Study on the pathogenesis of autoimmune diseaases 5. Drug develeopment for immune regulation in collaboration with pharmaceutical companies
Epigenetics	ISHINO Fumitoshi	1. Genomic imprinting in mammalian development and its relations to human diseases 2. Mammalian reproductive mechanism and epigenetic reprograming 3. Mammalian evolution by acquired genes from retroelements
Medical Science Mathematics	TSUNODA Tatsuhiko	1.Exploration of disease etiologies driven by integrative analysis of clinical and omic data. 2.Molecular classification of and systems approach to understanding disease based on omic profiling. 3.Prediction for personalized/precision/preventive medicine. 4.Development of methodologies for the above.
Structural Biology	ITO Nobutoshi	1. Structural biology by mainly X-ray crystallography 2. Structural and kinetic analyses of protein-protein interactions 3. Molecular recognition of small-molecule ligands (drugs) by proteins 4. Computational biology of biological macromolecules using structural information
Neuroscience	Under Selection	1. The pathophysiology of major mental illness 2. The pathophysiology of neurodegenerative diseases 3. The role of neurotransmitters in brain development 4. The role of glial cells in brain function 5. Generation of animal models for neuropsychiatric disorders using genome editing tools
Bio-informational Pharmacology	TAKEUCHI Jun	1. Understanding key roles of epigenetic factors in heart development and diseases 2. Generating individual/stable cardiomyocytes such as venricular/atria/pacemaker cells from ES/iPS cells for understanding heart diesease 3. Generating tranasgenic mice model for understanding heart development and disease using CRISPR-CAS system 4. Undestanding regenerative mechanisms in mammailan heart
Molecular Genetics	NAKANISHI Akira	1. Molecular mechanism of carcinogenesis 2. Mass spectrometry-based proteomics of cancer-associated proteins 3. Regulatory mechanism of centrosome cycle 4. Analysis of DNA topology regulatory elements
Epigenetic Epidemiology	SATO Noriko	1. Effects of intrauterine environment on neonate epigenome 2. The molecular mechanisms underpin DOHaD phenomena (animal experiment) 3. Gene-environment interaction in common diseases 4. Integrated personal disease risk assessment system
Cellular and Molecular Medicine	OISHI Yumiko	1.Molecular mechanim of metabolic syndrome and therapeutic strategies 2.Mechanism of sarcopenia (age-related skeletal muscle loss) and muscle degeneration 3.Mechanism of the onset and progression of cancer by the next generation sequencing (NGS) apploach

Enrollment information, Scholarships, and Student Support for PhD Students (Medical)

Entrance Period: **April / October**

Tuition Fee		Admission Fee	Examination Fee
(Annual)	(for 6 months)		
535,800 yen	267,900 yen	282,000 yen	36,000 yen

For the Japanese Government Scholarship students, fees for the entrance examination, matriculation, and tuition will be exempted.

Student support

Tutor System (Helping students acclimate)

Incoming International Students:
You will be assigned a tutor, who is another TMDU student, for your first year in Japan. Your tutor can answer questions, explain procedures, help you fill out documents and provide support during your first year of life and study in Japan.

Language Program

IGA Language Program
The Language Program offers courses to help students who need assistance in improving with their communication skills in Japanese and English. The aim of our program is to ensure their smooth transition to life abroad, and ultimately, to support their progress toward achieving success in academic, personal, and social areas.

Scholarships

- Home government scholarship
- Disease Prevention Global Leadership Program:DP-GLP
  - Biomedical Science and Technology (BST) track
  - Public Health Medicine (PHM) track
- Tokyo Medical and Dental University Scholarship (Supported by Sony Corporation))
- Japanese Government (MEXT) Scholarship
  - University Recommendation
  - Embassy Recommendation
- Monbukagakusho Honors Scholarship for Privately Financed International Students
- Private organization scholarships

Housing

- International House, Tokyo Medical and Dental University
  - Ichikawa International House
  - Minamigyotoku International House
- International Student House, Tokyo Medical and Dental University(Female students only)
- Student Dormitories (Male students only)
- Tokyo International Exchange Center Odaiba(Odaiba)

Cross-cultural Event


Spring Cherry-Blossom Viewing


Tanabata


Setsubun