





# The Philosophy of Fukushima

Established on March 26th, 2003

Fukushima Medical University was founded for the purpose of nurturing medical professionals who will contribute to the promotion of health, medical care and welfare of the citizens of Fukushima Prefecture. It is also a research institute with the aim to contribute to the community and the welfare of humanity through advances made in medicine, nursing and related areas.

Medical care is the collaboration of medicine, nursing, and allied health professionals. We care for the health and wellbeing of each individual, and strive for a better future based on respect for human dignity and adherence to high ethical standards.

Fukushima Medical University promotes education, research, and medicine based on the following principles:

- 1. We value human life and nurture medical professionals with high ethical standards.
- 2. We pursue advanced medicine and nursing.
- 3. We provide holistic and integrated medical care as the core medical institution in the prefecture.



# Medical University



### **University Corporation Directors**

	Name
Chief Director	Seiichi Takenoshita
Vice Chief Director (Revitalization)	Koichi Tanigawa
Director (Fukushima Health Management Survey)	Hiroyuki Yaginuma
Director (Medical and Clinical Education)	Kiyoshi Saito
Director (Education and Research)	Seiji Yasumura
Director (Community Health and New Faculty)	Shin-ichi Konno
Director (Business Liaison)	Kenichi Kikuchi
Director (Planning and Administration)	Mitsuaki Toda
Permanent Advisor	Shin-ichi Kikuchi

### University President / Vice presidents / Deans

	Name
President	Seiichi Takenoshita
Senior Vice President (General Affairs)	Hitoshi Oto
Vice President (Academic Affairs)	Seiji Yasumura
Vice President (Clinical Education)	Kiyoshi Saito
Vice President (Community Health)	Shin-ichi Konno
Vice President (Extraordinariness)	Tatsuo Suzutani
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Vice President (Doctor Recruitment and Health Longevity)	Shunichi Fukuhara
Vice president (Business and Operations)	Yasunori Yoshimura
Dean, School of Medicine	Yasutomo Takeishi
Dean, School of Nursing	Misao Oota
	As of April 1st 2018

As of April 1st, 2018

# Three policies of **Fukushima Medical University**

### Policy for approving graduation and degree conferment (Diploma Policy)

### We confer degrees on persons who meet the following criteria:

- Acquisition of the professional knowledge, skills and ethics required to be a medical professional.
- Possession of the ability to contribute to society in the fields of welfare and medicine.
- Possession of a basic ability to contribute to the development of medicine, through the acquisition of a scientific attitude and mindset, and a goal of independently continuing a lifelong study to this end.
- Successful achievement of the requisite number of credits, as outlined by the university, by the time of graduation.

### Policy for composition and implementation of curriculum (Curriculum Policy)

### We implement education according to the following policy:

- Foster the ability to discover and solve problems by spontaneously studying advanced medical problems. In addition, instill an attitude of lifelong learning.
- Systematically teach medicine, and foster discernment as a medical professional based on a deep understanding of diseases. Develop abilities regarding communication and cooperativeness.
- Convey knowledge of clinical sites, encourage self-awareness as a medical professional, and foster feelings of empathy, patient-awareness, and bedside manner.
- Teach the current situation of local medicine in Fukushima Prefecture, as well as the methodology by which public health can be maintained.
- Aim at a research based on the spirit of scientific inquiry and creativity, and foster a will to carry this spirit into the world, beyond education.

### Policy for accepting students

(Admission Policy)

### We seek students who meet the following criteria:

- Strong ethical values, a capability for deep compassion, and respect for life.
- Sufficient fundamental academic skills, with a strong motivation to acquire advanced medical expertise and techniques.
- Excellent communication skills, and the ability to willingly cooperate.
- Passion regarding local development and contribution to Fukushima's revitalization after the Great East Japan Earthquake.
- Scientific curiosity and creativity, and with a will to take their skills and knowledge to a global level.

### A b o u t u s

### Envisaging both our region and the world

The Fukushima Global Medical Science Center, our platform for the reconstruction of Fukushima, was launched in December 2016. Since then, we have been tasked with several new challenges, not only regarding the reconstructing of medical treatment within the prefecture, but also various trailblazing studies and treatments in multiple fields that may be applicable to the rest of the world.

For instance, the findings of a study into unsealed radionuclide therapy using alpha-rays, conducted at our university, rivals those of studies performed in medical institutions and research institutions all over the world. In this fiscal year, a research project named "The development of



Seiichi Takenoshita, MD PhD President.

medicine for intractable cancers by unsealed radionuclide therapy using alpha-rays" was selected by the Japan Agency for Medical Research and Development to become a national project, and it has since been gaining momentum. Additionally, we have been preparing for the establishment of a research center for up-to-date cancer immunotherapy, and we expect it to become a nationally prominent and leading research base in the near future.

Of course, while we are working on research that is on a par with leading global standards, we are also deeply committed to disease prevention. Being an advanced treatment hospital, we have installed advanced medical equipment to accelerate the processes of early detection and treatment, as well as to prevent disease progression. Moreover, by launching our Health Promotion Center, we can now provide the general public with a support system, which is based on scientific evidence that will contribute to their health and longevity. What's more, we have been expanding our support for the Futaba Medical Center, which just opened this past April.

Regarding our academic institutions, construction of a school building for the tentatively named Faculty of Health Science is due to begin this year. We will endeavor to inform high school and junior high school students on the content of this faculty, so that they know exactly what kind of training is undertaken there. This information will also be made available to the general public.

We at FMU are going to actively contribute vital research that will affect both Fukushima on the local level, and the world at large. In the years to come, we will continue with our never-ending persistence in our many undertakings, such as education, research, treatment and, of course, the overall health of the people of Fukushima.

June 2018.









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# <sup>©</sup>School of Medicine Z



### **Education Philosophy**

The School of Medicine's philosophy is to cultivate doctors who are compassionate, intelligent, skilful, genial and creative.

# Message / Your will has the power to change society.

At Fukushima Medical University School of Medicine, we continuously endeavor to educate and produce doctors, fostering their abilities to contribute to the preservation of the health, medicine and welfare of Fukushima Prefecture. In addition, as a research institution, we produce cutting-edge research studies in many fields, such as integrated science, life science, social science and clinical medicine. Especially, in the field of clinical medicine, we provide advanced medical care and treatment at FMU Hospital to protect Health of the people in Fukushima Prefecture. The Fukushima Global Medical Science Center was launched in 2016, and the latest medical equipment and facilities have made it possible for us to provide comprehensive diagnoses and treatments.

To develop doctors with advanced knowledge, techniques and a strong sense of ethics, we will carry out further reforms in our education system, both before and after graduation, with an aim of each doctor achieving a complete and well-rounded medical education. Our educational system is seamless through to our students' transition from graduation into their professional careers. This system leads to excellent medical professionals both in Fukushima Prefecture and elsewhere, via close cooperation with local hospitals.

We seek people with passion and curious, inquisitive minds, whose aim is to contribute to society through research and medical treatment.

Yasutomo Takeishi MD PhD Dean, School of Medicine





### **Educational Objectives**

# We will help you discover and cultivate the following essential qualities of a competent doctor.

- Mind Sincerity, compassion, and scientific inquiry.

- Harmony———Harmony with patients and their families, with colleagues in the workplace, and with people in the community, both local and global.
- Community .... Learn from, improve, and take part in various communities.

### Outline

The School of Medicine was established as a Prefectural University to accomplish the mission of leading Fukushima's regional medicine. For more than 60 years, we have educated medical professionals to high standards of knowledge and skill, and contributed to our residents' and citizens' health and welfare. Today, advanced medical technology is developing rapidly, as are medical techniques and our knowledge of life sciences. We are now approaching the task of serving an aging society, and how to make more people maintain healthy lives longer. Therefore, our residents' expectations of us are becoming greater than ever. We are responsible for quickly and accurately meeting these expectations, and providing the public with medical professionals who possess outstanding medical knowledge and skills. At the same time, we must continue to solve universal challenges and present our achievements to the world.

Our "Vision 2014" urges us to educate 1) skilful medical professionals who will contribute to reconstructing Fukushima; and 2) medical professionals with high standards of knowledge, skill and morality. This new vision reflects our determination for developing and contributing to medicine, for the betterment of the general population.

We will provide new solutions as to how we can reassure our patients that they will live healthy lives, and what we should do in order to accomplish this, based on our experience and tradition.



### Outline

### Six-consecutive-year spiral curriculum

The FMU School of Medicine provides education in an original six-consecutive-year spiral curriculum (Fig 1). This curriculum makes it possible for students to continuously learn both

Fig 1. Conceptual scheme of curriculum formation

fundamental and advanced subjects according to their growth and proficiency. As a prefectural university, we provide many opportunities for our students to visit the surrounding regions, in order to gain knowledge of the local communities and learn from people who live there.

### Accumulate knowledge with the aim of what kind of doctor you want to become First Year

First year students undergo lessons in natural science, humanities, social sciences, and languages. Additionally, groups studying integrated education and life science/social medicine are also set up. The students will be introduced to the basics of medicine, and the methods by which they can address the multifaceted issues that are involved in medicine. During their first year, by observing and researching medical sites and local communities, the students will deepen their understanding of the importance of teamwork and compassion when considering others, and will improve their communication skills to accurately convey their thoughts. Moreover, the students will gradually come to realise the beginnings of the doctor they would like to be.

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Studying many topics to refine your ambition in medicine Second to Fourth Year

During this period, through learning both clinical and social medicine, the students comprehensively learn about medicine, including physiology, anatomy, medical practice, health and welfare, and their relation to society. At this stage, the students begin their path towards becoming a doctor, and are made aware of what their position as a medical student means.

In their second year, there is a series of life science subjects on the normal structure and functions of the human body, as well as the basic factors and pathophysiologies of diseases. Then, in their third year, the students take clinical medicine classes to learn about treatment approaches for both internal and surgical medicine. Along with those classes, classes on social medicine enable the students to learn about the diversity of medicine, and how it relates to society.

In their fourth year, a six-week research program (upper basic program) is carried out. Also, prior to taking the Objective Structured Clinical Examinations (OSCEs), the students undergo lessons on basic medical treatment, including basic and practical treatment techniques, as well as bioethics. This leads to a smooth transition into a twenty-two-month course on Bedside Learning (BSL).

Development into becoming a doctor with deep compassion Fifth and Sixth Year

While demonstrating communication skills and problem-solving abilities, in their fifth year, the students join a medical team and acquire practical treatment skills. In the advanced course, the students are able to take part in long-term training at a local medical institution, while staying in local residents' houses. Our spiral curriculum is designed to aid in our students' attitude towards learning; however, as a result, the skills learned are not necessarily automatically done so in a step-by-step manner. The goal of our method of education is not only for our students to obtain technical skills, but also to grow as a person, and therefore as a doctor, with a deep understanding of their vocation, and an empathy towards their patients and colleagues.

### Learning radiation disaster medical care

In their third year at our School of Medicine, students learn "Radiation Life Science", which enables them to explain about radiation and health to their patients, as well as their families and friends who live outside of Fukushima Prefecture. In their fourth year, they learn Disaster Medicine and Emergency Radiation Exposure. Finally, during their BSL course in their fifth year, they learn Radiation Disaster Medicine and continue learning Disaster Medicine.

### Bedside learning at Aizu Medical Center

All fifth-year students in the School of Medicine take part in a two-week BSL course at Aizu Medical Center, which opened in May. During this course, the students take charge of internal and surgical medicine cases in order to acquire skills involved in primary care, such as medical interviews, physical examination, diagnosis reasoning and presentation.

### Collaborative practice with local regions.

Starting in the lower grades, the School of Medicine aims to establish and develop doctors who contribute to local health care. Thus, in cooperation with local medical institutions and welfare facilities, we conduct regional training for our students, in order to learn more about local residents. In addition, the BSL course conducted in the upper grades also provides high-quality training. The students can select our Cooperative Hospital Course, which consists of training at a local medical institution for a certain period of time. Alternatively, they can choose homestay-type raining, which consists of medical training while experiencing a homestay at a local residents' home.

#### Postgraduate career options

After graduation, the newly-qualified doctors undergo a twoyear internship, known as postgraduate clinical training. In this period, the interns rotate through multiple departments, in order to gain first-hand experience in several fields. After completing this training, the interns go on to take part in specialized training to obtain their specialist qualifications.

- Characteristics of postgraduate clinical training
- ① Detailed training support via a mentor system
- <sup>(2)</sup> Flexible program
- ③ Adopt the "cord method"
- (one year in our institution, one in an affiliated hospital).
- ④ Regional medical training for community and family medicine
- (5) Emergency training with emergency centers and helicopter emergency medical services.
- (6) Outpatient training in the General Medicine, Regional Medicine, and Family Medicine departments
- Characteristics of specialized training
- (1) All basic field programs are operated as core facilities
- (2) Interns will be able to acquire the required specialist qualifications
- (3) Interns will also be able to acquire a medical specialist certification and a doctorate degree at the same time.



### **Departments in School of Medicine**

Life Science and Social Medicine		
Department of Neuroanatomy and Embryology Prof.YAGINUMA Hiroyuki		
Department of Anatomy and Histology Prof.WAGURI Satoshi		
Department of Cellular and Integrative Physiology Prof.HAZAMA Akihiro		
Department of System Neuroscience Prof.EIFUKU Satoshi		
Department of Biochemistry Prof.HASHIMOTO Yasuhiro		
Department of Immunology Prof.SEKINE Hideharu		
Department of Bioregulation and Pharmacological Medicine Prof.SHIMOMURA Kenju		
Department of Microbiology Prof.SUZUTANI Tatsuo		
Department of Basic Pathology Prof.CHIBA Hideki		
Department of Hygiene and Preventive Medicine Prof.FUKUSHIMA Tetsuhito		
Department of Public Health Prof.YASUMURA Seiji		
Department of Forensic Medicine Prof.KURODA Naohito		
Department of Radiation Life Science Prof.SAKAI Akira		
Department of Epidemiology Prof.OHIRA Tetsuya		
Department of Radiation Physics and Chemistry Prof.ISHIKAWA Tetsuo		
Department of Health Risk Communication		
Clinical Medicine		
Internal Medicine		

Internal Medicine
Department of Cardiovascular Medicine Prof.TAKEISHI Yasuchika
Department of Hematology Prof.IKEZOE Takayuki
Department of Gastroenterology Prof.OHIRA Hiromasa
Department of Rheumatology Prof.MIGITA Kiyoshi
Department of Nephrology and Hypertension Prof.KAZAMA Junichiro
Department of Diabetes, Endocrinology and Metabolism Prof.SHIMABUKURO Michio
Department of Neurology

Prof.KANAI Kazuaki Department of Pulmonary Medicine Prof.SHIBATA Yoko

#### Surgery

Department of Gastrointestinal Tract Surgery Prof.KONO Koji
Department of Hepato-Biliary-Pancreatic and Transplant Surgery Prof.MARUBASHI Shigeru
Department of Chest Surgery Prof.SUZUKI Hiroyuki
Department of Breast Surgery Prof.OHTAKE Tohru
Department of Cardiovascular Surgery Prof.YOKOYAMA Hitoshi
Department of Neurosurgery Prof.SAKUMA Jun
Department of Orthopaedic Surgery Prof.KONNO Shin-ichi
Department of Plastic and Reconstructive Surgery Prof.OYAMA Akihiko
Department of Obstetrics and Gynecology Prof.FUJIMORI Keiya
Department of Pediatrics Prof.HOSOYA Mitsuaki

Surgery
Department of Ophthalmology Prof.SEKIRYU Tetsuju
Department of Dermatology Prof.YAMAMOTO Toshiyuki
Department of Urology Prof.KOJIMA Yoshiyuki
Department of Otolaryngology Prof.MURONO Shigeyuki
Department of Neuropsychiatry Prof.YABE Hirooki
Department of Radiology and Nuclear Medicine Prof.ITO Hiroshi
Department of Anesthesiology Prof.MURAKAWA Masahiro
Department of Emergency and Critical Care Medicine Prof.ISEKI Ken
Department of Diagnostic Pathology Prof.HASHIMOTO Yuko
Department of Laboratory Medicine Prof.SHIMURA Hiroki
Department of Infection Control Prof.KANEMITSU Keiji
Department of Blood Transfusion and Transplantation Immunology Prof.IKEDA kazuhiko
Department of Community and Family Medicine Prof.KASSAI Ryuki
Department of Radiation Health Management Prof.OHTSURU Akira
Department of Thyroid and Endocrinology Prof.SUZUKI Shinichi
Department of Disaster Psychiatry Prof.MAEDA Masaharu
Department of Radiation Oncology Prof.SUZUKI Yoshiyuki
Department of Medical Oncology Prof.SAJI Shigehira
Department of Radiation Disaster Medicine Prof.HASEGAWA Arifumi
Department of Rehabilitation Medicine Prof.OI Naoyuki
Human and Natural Sciences
Department of Human Sciences
The Section of Bioethics Prof.FUJINO Mitsuko
The Section of Linguistics

Department of Natural Science
The Section of Mathematics and Informatics Prof.OKADA Tatsuya
The Section of Advanced Chemistry Prof.SHIMURA Kiyohito
The Section of Molecular and Cellular Biology Prof.MATSUOKA Ariki
The Section of Mathematical and Material Physics Prof.HIRAKI Koichi
School of Medicine Research Institutes & Centers
Institute of Biomedical Sciences
Department of Biomolecular Science Prof.HOMMA Yoshimi
Department of Cell Science Prof.WADA Ikuo
Department of Molecular Genetics Prof.KOBAYASHI Kazuto
Radioisotope Center (RI) Prof.KOBAYASHI Kazuto
Laboratory Animal Research Center Prof.SEKIGUCHI Miho
Postmortem Examination Center Prof.KURODA Naohito

# <sup>©</sup>School of Nursing





### **Education Philosophy**

The School of Nursing's philosophy is to encourage students to study proactively, understand and deeply respect the importance of human life, and develop strong morals, sensitivity and logical thinking.

We also endeavour to produce nursing professionals that help

people by exercising their own abilities to maintain health. Furthermore, we teach our students to be able to adapt to social changes and provide support in various fields, including health care and welfare, while collaborating with people from different occupations.

# Message The Science of Nursing

Experience is highly valued in nursing; experience that is learned on the job, in real nursing situations. Where do you focus and what information do you use? How do you assess the situation and what steps do you take? These questions can be answered not only using the knowledge, technology, and practice of nursing, but also by observing other people at the same time. In nursing, it is essential to view your patient as a whole person, beyond their illness or injury. It is not only the use of medicine, but also the vitality and will of the person that cures the disease. Rousseau's passive learning theory means not disturbing the power that a person already has. In nursing, it is derived from the patient themselves. If we apply this theory to our practice, then listening to patients' stories, and understanding their character and what they have experienced, is absolutely vital.

Nursing is a profession with a unique academic system. It is important to be scientific, but there is more to it than that. In that sense, I have to say that scientifically proving the power of nursing is an ongoing endeavor. In addition, the attitude of employing the scientific method in our studies is required, although we must not lose sight of our goal by becoming confused by science itself. One way of doing this is by gaining experience in the nursing environment.

Learning also includes interaction between students and teachers, which in turn means building relationships of trust as human beings. The Fukushima Medical University School of Nursing uses these ideas to teach the basics of nursing, in order to provide the best possible care from a medical and humane standpoint.

Misao Ota Dean, School of Nursing





### **Educational Objectives**

Our ideals are based on preparing students to become healthcare professionals who:

- 1. Have a wide range of interests in culture and people, and insight into health and living life.
- 2. Understand the dignity of life and human rights, support people's decision-making, and take action to advocate for them.
- 3. Have a deep understanding of the ethics of medicine and care, and make judgments as well as act based on those ethics.
- 4. Are able to reflect on themselves and build better relationships through communication with others.
- 5. Understand the role that the nursing profession plays in the support process for improving the health of people, from the perspective of growth development and the environment surrounding daily life.
- 6. Are able to explore safe and effective care and practice nursing using critical thinking based on clinical judgment and rationale.
- 7. Understand the health needs of local communities, and can work with local specialists to explore social resources that people can use to solve their problems.
- 8. Understand the role of nursing and care management in accordance with the situation of the people in the areas and facilities they work in, to build a collaborative medical care team.
- 9. Are able to look back on their own abilities as a nursing professional, through self-evaluation and evaluation by others, and have a defined, positive attitude towards their chosen profession.

### **Overview**

Changing the way we think about health and health care system reform has been a necessity in Japan, due to its aging population as well as changes in diseases. To solve this, the first school of nursing run by a medical university in Japan was established in April 1998. It was set up as a new part Fukushima Medical University, which had itself been established almost half a century earlier, in 1950.

The School of Nursing serves as a base for education and research on the health issues of local communities. This is based on the idea that nursing is performed by people, and that the system of health care and welfare is rooted in the connections between people. Our goal is to create a faculty that is open to the community.



<sup>©</sup>School of Nursing 🎙

### **Curriculum Characteristics**

### A group of subjects that integrate nursing

In the School of Nursing, students learn about psychology, life and science, and human relationships, in order to deepen their understanding of nursing. In addition, the students learn bioethics to enhancetheirethics, pathological nutrition and pharmacotherapeutics to understand human body functions and pathology, foreign languages to cultivate skills in expressing themselves, medical law to deepen their understanding of society, and general education, such as art, to enhance their sensitivity.

By following our curriculum, our students acquire practical skills by studying the fundamentals and applications of nursing, nursing practices, and subjects that integrate nursing.



The education we provide is one that educates students so that they possess the abilities necessary to provide the appropriate care, by understanding their patients' health conditions in their daily lives and integrating their knowledge and skills, no matter what the situation is or what developmental stage the patient is in.

In addition, we work with various professionals involved in health and welfare, in order to maintain a human resources department that can help people improve their health and support them.

### Community nursing training

### "Nursing" in the community

In the School of Nursing, we incorporate "Community Nursing Training" in order to service the general public through nursing. In this practice, conducted at the local government level in Fukushima Prefecture (centered around the Municipal Health Center), students use public transport, bicycles, and other means of transportation to explore the area, gain an understanding of local residents' lives. The students are encouraged to employ all five of their senses when carrying out their tasks, clarifying health problems, and learning what kind of nursing is being conducted to help the people they meet. In the Department of Nursing, through various experiences such as clinical practice, we can learn about areas of Fukushima Prefecture that we had previously been unaware of.



**Qualifications and Careers after graduation** 

### Nursing practice in a variety of fields

After graduating from the School of Nursing, students can take national examinations to receive nursing and public health nursing certifications. In addition, by selecting the necessary courses, they will also be able to take the national examination for midwifery. The workplace of nursing professionals is not only at a hospital, but also in a variety of other areas. After graduating, our students will be able to demonstrate their abilities in hospitals and medical clinics, in health and welfare areas such as health centers and health facilities, and in multiple other fields, such as administrative, educational, and research. Some of our graduates go on to study at graduate school of nursing while working at a medical institution.





### **Departments in School of Nursing**

Prof.NAKAYAMA Hitoshi

Section of Behavioral Science (Psychology) Prof.MISAWA Fuminori

Section of Behavioral Science (Sociology) Prof.TACHIYANAGI Satoshi

Health Informatics and Epidemiology Prof.GOTO Aya

### **Department of Human Life Sciences**

Human Structure and Function Prof.HONDA Takashi

Pathophysiological Sciences Prof.OHTA Shoichiro

### **Department of Fundamental Nursing**

Fundamental Nursing Prof.SAKAMOTO Yuko

Nursing Management Ass. Prof.SATO Hiroko

Department of Clinical Nursing

Adult Nursing Prof.YAMATE Miwa

Gerontological Nursing Prof.SAKAMOTO Yuko

Department of Family Nursing
Nursing Care of Children Prof.WADA Kumiko
Family Nursing Prof.HATAKEYAMA Tomoko
Mental Health and Psychiatric Nursing Ass. Prof.OHKAWA Takako
Department of Public Health and Home Care Nursing
Home Care Nursing Prof.TAKAHASHI Kouko
Community Health Nursing

Prof.TAKASE Kanae

### **Department of Midwifery and Maternal Nursing**

Midwifery and Maternal Nursing Prof.OHTA Misao

School of Medicine / School of Nursing / Graduate School





# <sup>©</sup>Graduate School 📢

Graduate School of Medicine / Graduate School of Nursing



### Overview

The purpose of our graduate school is to continue the development of researchers and professional staff who can independently contribute to the advancement of medical care, as well as to new medical and nursing sciences.

The Graduate School of Medicine provides one doctoral course and two masters courses. The doctoral course, called the Department of Medical Science Doctoral Course", aims to foster researchers. The Graduate School of Medical Science Masters Course targets graduates who did not previously specialize in medicine, and the Disaster and Radiation Medical Science Joint Major Masters Course targets working members of society such as nurses and local government employees.

In the Graduate School of Nursing, we provide a research course for professionals responsible for the development and research of nursing support methods, and a CNS course, which is for nursing professionals (specialized nurses) with advanced expertise and outstanding practical skills.

		Graduate School Composition	
	Majors	Learning Courses	
	Graduate School of Medicine (Doctoral Course)	Advanced Medical Scientist Course	PhD, Medicine)
	Enrollment Limit: 37	Specialist Medical Researcher Course	Specialist + PhD, Medicine
Graduate	Graduate School of Medical Science	Comprehensive Medical Science Program	Mastera Madical Colonas
School of Medicine	(Master's Course) Enrollment Limit: 10	Social Science Program	Masters, Medical Science
	Disaster and Radiation Medical Sciences Joint Major	Medical Science Course	Masters, Medical Science
	(Master's Course) Enrollment Limit: 10	Health Nursing Course	Masters, Nursing
Graduate School of	Graduate School of Nursing (Master's Course)	Research Course	Masters, Nursing
Nursing	Enrollment Limit: 10	CNS Course	Professional nurse + Masters, Nursir



### **Educational goals**

- 1. Produce researchers who will contribute to the advancement of the field of medicine.
- 2. Prepare students to acquire the skills needed to engage in research methodology at a level necessary for a specialist.
- 3. Prepare students to pioneer diverse fields of medicine.
- (Produce talented researchers and specialists who can play active roles in a variety of fields related to medicine and medical care.)

### Graduate School of Medicine Outline (Doctoral Course) Four years

This department mainly accepts graduate students from the School of Medicine, but also accepts graduate students from other schools. Thus, the major is Medical Studies (Graduate School of Medicine), and the field of study under which the degree is granted is also medicine.

Students enrolled in this doctor's program will select either the Advanced Medical Researcher Course or the Specialist Medical Scientist Course at the time of enrollment.

The advanced medical researcher course aims to train and teach students to become medical researchers, support future medicine, and nurture minds that will be able embark on new medical endeavors. The specialist medical researcher course, which is intended for students who have completed the graduate clinical training, and are going to receive specialist training. It includes the subjects required to produce clinical physicians with advanced, specialized clinical abilities, as well as the ability to perform quality research in the medical field.

### Graduate School of Medicine Overview

As part of the basic curriculum, students in the Advanced Medical Researcher Course are required to take a class called Introduction to Medical Research. In addition, Introduction to Medical Science Research, which mainly focuses on experiments, is also required. Furthermore, in the Specialist Medical Researcher Course, Advanced Human Studies is a compulsory class. In 2013, we began to offer Research and Design Studies, which allows students to learn basic research skills while conducting studies first-hand.

In each of these courses, students acquire knowledge on medical research by taking these basic educational subjects, and that knowledge will serve as the foundation of their research.

Students choose subjects from among the specialized fields that correspond to their chosen majors, Advanced Medicine or Advanced Medical Practice. In addition, by selecting classes outside of their majors, we help students expand and develop their specialized research, and develop the ability to solve problems from a wider perspective. Moreover, in order to gain a fuller understanding of the advancement and refinement of medicine and medical practice, graduate school seminars, which focus on advanced research in a variety of fields, are also provided. These seminars are compulsory for all courses. As the ultimate goal of our education in all of these courses, we will provide research guidance for thesis preparation in each field.

## Graduate School of Medicine Two-Year Masters Degree Overview

In this department, our students learn how to be active as researchers, as well as how to be an engineer and a specialist in a variety of fields related to medicine and medical care, by intensively studying medical science and integrating interdisciplinary knowledge with people of a variety of backgrounds in non-medical areas.

After completing the masters program, students are encouraged to continue their studies in a doctoral program, which is a four-year course, although it can be completed in three years by those who are able to complete outstanding research. This course enables the student to reach higher levels of expertise and research methods to improve their abilities as a researcher.

### Graduate School of Medical Science Overview

In this department, students who have completed medical education in other fields, such as dentistry and pharmacology, intensively study medical science over a short period of time. For this reason, although we also touch upon clinical medicine in this course, we mainly view medicine from a scientific perspective, and the curriculum is therefore organized to mainly focus on basic and social medicine.

The acquisition of the knowledge and skills needed for medical science is difficult through lectures alone, so there are also practical classes that integrate experiments. In 2017, we split what was previously a single class into two classes (Integrated Medical Program and Social Science Program), to produce aspiring professionals who can play active roles, such as researchers, educators or advanced specialists, in several different medical and medicine-related fields.

### Disaster and Radiation Medical Science, Two-Year Masters Degree Overview

After the Great East Japan earthquake, its resulting tsunami, and the subsequent TEPCO Fukushima Daiichi Nuclear Power Plant accident in March, 2011, it became clear that there was a lack of qualified individuals who were able to adequately respond to the long-term health repercussions of such large-scale emergencies and their aftermath.

In response to this situation, in 2016, we established the Disaster and Radiation Medical Science Joint Major, in collaboration with Nagasaki University.

In this department, we established two courses that mainly target social workers, such as nurses and local government employees. Our aim is to educate professionals to be able to take action in the event of a disaster, as well as people who can respond appropriately to the long-term health effects of such disasters. These groups of people will be able to perform such tasks by acquiring a wide range of knowledge that encompasses the entire field of disaster and radiation medicine.

#### 2 University joint Graduate School Graduate School of Disaster and Radiation Medical Sciences



### Disaster and Radiation Medical Sciences Joint Major Curriculum Overview

In this department, students who are enrolled in the Medical Science Course or Health Care Nursing Course learn the following as core subjects: Basic Radiology, Introduction to Emergency Medicine, Introduction to Disaster Medicine, Introduction to Disaster Nursing, Risk Communication Studies and Special Theory of Research Methods. For non-medical students, we teach Introduction to Medicine, so that they can obtain basic medical knowledge.

Both courses are conducted over two years, and our goal is to ensure that our students, if and when the time comes, are able to make correct judgments and provide the treatments necessary for these situations.

### Educational goals

- 1. Produce nursing professionals who have a high level of expertise and skills.
- 2. Prepare students to become nursing professionals who are capable of developing and studying nursing methodology.
- 3. Produce nursing educators who facilitate career development of nursing professionals.

### Graduate School of Nursing Two-Year Masters Degree Overview

### **Researcher Course**

The Researcher Course is comprised of eight fields: Oncology Nursing Adult Nursing, Family Nursing, Gerontological Nursing, Mental Health and Psychiatric Nursing, Maternity Nursing, Nursing Care of Children and Community Nursing/ Home Care Nursing. In addition to taking compulsory classes, specialized nursing classes, and general nursing classes, the students will also undertake Special Nursing Research, which will result in a thesis and will count for 6 credits.

### **CNS** Course

This course comprises of Oncology Nursing, Mental Health and Psychiatric Nursing and Nursing Care of Children, and it is recognised as a curriculum for certified nursing specialists by the Japan Association of Nursing Programs in University. In addition to taking the compulsory classes, as well as specialized and general nursing classes, the students will also undertake Research on Nursing Issues, which will result in a thesis worth 4 credits.

### Philosophy

The goal of the Graduate School of Nursing is to contribute to the innovation and development of nursing science through the practice of high quality nursing care based on advanced expertise and skills; development of nursing methodology and clinical nursing research methodology; and establishment of a career development system for nursing professionals.

### •Oncology Nursing (Researchers Course, CNS Course)

The objective of Oncology Nursing is to develop a nursing methodology to support cancer patients and their family members throughout the different possible stages of cancer, including cancer prevention, initial diagnosis, treatment, survival, recurrence, metastasis, and death.

#### [Examples of research projects for graduates in this field]

- Psychological processes of bladder cancer patients with urinary tract change
- How nurses feel and react after/while they are dealing with the patients who show negative feelings
- The experience of the spouse of a cancer patient: their feelings and behavior before and after being informed.
- Thoughts and experiences of middle-aged breast cancerpatients who have to inform their children about the disease
- A guide for palliative nurses on dealing with patients' final wishes and deaths.
- Emotional and Mental Growth Process of Certified Nurse Specialists in Japan in Acknowledging Their Roles

## •Adult Nursing (Researchers Course) Set up in April, 2019

We will develop nursing support methods addressing various health levels and stages. It will focus on the developmental issues and life processes of people who have been subjected to bioinvasion due to diseases and injuries, and their families.

## •Family Nursing (Research Course) Opened in April 2016

Family Nursing focuses on development of specialized nursing intervention method to promote and enhance family's health.





- Research of marriage life of partners without mental disorders who live with schizophrenia patient  $\sim$  Qualitative Research by storytelling of partners  $\sim$
- Thoughts of a wife who lives a life with gerontic stage repeatedly hospitalized husband with chronic cardiac failure.
- Consideration for uncertainness and relevant factors of family disease of recovery stage cerebrovascular disease patient.

### •Gerontological Nursing (Research Course) Opened in April 2016

Gerntological Nursing focuses on development of nursing and support method of prev QOL improvement for the elderly.

## [Examples of research subjects and projects for graduates in this field]

• Reality of attitude on terminal care and educational training of caregivers who work at special elderly nursing home.

## •Mental Health and Psychiatric Nursing (Researchers Course, CNS Course)

These courses are designed to develop nursing methodologies in the treatment of people with mental health problems. This treatment enables these individuals to independently live their daily lives.

#### [Examples of research projects for graduates in this field]

- Examination of care performed to maintain activity levels in patients with delirium.
- Group development for rehospitalized schizophrenia patients: changes in subjective perceptions of disease recognition how they cope in their daily lives.
- The significance and difficulty of talking in a group with other patients in psychiatric day care.
- Parenting experiences of mothers who have children with attention-deficit hyperactivity disorder.
- The home nursing approach and the socialisation of mentally handicapped people living in the community.
- Judgement and care performed by psychiatric nurses when administering medications.

### •Maternity Nursing (Researcher Course)

Maternity Nursing is designed to develop nursing methodologies to support women in their maternity cycle, as well as their family members. In addition, these methodologies promote lifelong women's health.

### [Examples of research projects for graduates in this field]

- The meaning of "waiting" in the delivery process by skilled midwives.
- A midwife's feelings concerning stillbirth.
- The emotional toll undergone by midwives who experienced the Great East Japan Earthquake.
- Midwife judgment of medical interventions during delivery and their primary factors.
- The experience of husbands whose wives have given birth via emergency Caesarean section.

### •Pediatric Nursing Care (Researchers Course, CNS Course)

Pediatric Nursing Care is designed to develop methodologies to support families with children to maintain healthy lives, as well as nursing methodologies to help improve the quality of life of both children with health problems and their family members.

### [Examples of research projects for graduates in this field]

- The nursing attitude of NICU nurses and the factors influencing it: focusing on the care of mothers of children with disabilities.
- The relationships between family members accompanying children during long-term hospitalization and the process of forming those relationships.
- Mothers' view of NICU care, how it strengthens the relationships between mothers and their children, and the factors influencing this strengthening.

## •Community Nursing / Home Care Nursing (Researchers Course)

Aimed at individuals and groups of varying health levels, Community Nursing is designed to suit a healthcare system and nursing methodology that corresponds to health problems in local government, businesses and home nursing stations.

### [Examples of research projects for graduates in this field]

- The status and mental health of families caring for elderly people with dementia during evacuation at the time of the Fukushima Daiichi Nuclear Power Plant Accident
- How workers who are diagnosed with cancer adjust their lives to cope with their disease.
- The correlations between the social activities of dialysis patients with diabetic nephropathy and both their health-related QOL and life satisfaction.



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Warm, straightforward,

The light that shines through the clouds is a beautiful sight, Medicine should be an important contributing factor to happiness. We provide medical education and clinical training to enlighten and instill such spirit at Fukushima Medical University.

# Shining a path for medicine

[Efforts to nurture medical professionals]



### CMECD: Center for Medical Education and Career Development

As a response to the governmental policy of New Comprehensive Measures for Securing Doctors, FMU established the Center for Medical Education and Career Development in April 2008 in order to provide various seamless and comprehensive support to undergraduate students, medical elective students, residents, young doctors, instructors, and university faculties. In addition, the Education Center for Disaster Medicine was established after the Great East Japan Earthquake with funding from the Ministry of Education, Culture, Sports, Science and Technology, and we have been engaging in the education of disaster medicine and radiation exposure, and the training of professionals. We have conduct mental and physical health consultations for evacuees, and we hold disaster medicine seminars. In 2014, an additional division, named the Nursing Education and Training Division, was established to comprehensively and collaboratively support the School of Medicine and School of Nursing.

### **Department of Medical education**

Based on the needs of the times, the Department of Medical Education conducts environmental improvement and educational support so that medical students can acquire sufficient knowledge and basic skills, and do so with a professional attitude, over a six-year period. In particular, the first mission is to identify current issues that need to be addressed, formulate measures to be taken to resolve said issues, and organically incorporate them into the students' lessons.

#### Education Program Support

(before/after clinical practice, OSCEs, reforming BSL, planning and conducting cross-sectional classes)

- Environmental improvement
- (skills lab, mock-patient training, utilizing IT)
- Providing information and support to teachers (faculty development / conducting workshops, installing and supporting active learning classes)
- Learning support

(first-year education, including early clinical training, community training, and communication studies. Medical interview and clinical skills guidance in BSL, as well as theory classes on symptoms, through team-based learning)

Promoting our university in high schools, etc. (tutoring pupils, conducting school tours, etc.)

### **Education Center for Disaster Medicine**

#### Practical education that is only possible in Fukushima

The main role of the Education Center for Disaster Medicine is to establish an education and training system that practically helps develop experts (doctors and nurses) who are knowledgeable about disaster response and radiation exposure medicine. We hold seminars aimed at people who are interested in disaster medical treatment and radiation exposure medicine from inside and outside of Japan, as well as students from our university and medical professionals (doctors and nurses) who work in the prefecture. In addition, in cooperation with the university and an international organization (IAEA), we have been discussing and examining a medical education program related to nuclear disasters.



### Department of Nursing Education and Training

The Department of Nursing Education and Training was established in 2014. In this department, we provide guidance for the recruitment of nursing undergraduate students by medical institutions in the prefecture. Our goal is to ensure that those nurses and others are ready to be responsible for community health care.

In addition, in order to improve the qualities of nurses responsible for local medicine, we hold educational workshops for nurses all over the prefecture.

Furthermore, by conducting public relations activities for high schools, such as visiting lectures and university tours, we encourage and motivate high school students and others to learn nursing science. Through these efforts, we work to develop an environment in which nurses and others can engage in lifelong learning.

### Main Operations

#### Career planning

Visiting lecture
 School tour

- Recruitment guidance
- Pre-graduation education
- · Lifelong education

### Clinical Education and Training Division

In this division, as the main role in the enhancement of postgraduate education, we support the development of medical professionals, such as doctors and instructors who perform clinical training, in order to acquire and improve the knowledge and skills necessary for local medicine through the following practices.

In particular, by enhancing the graduate training program, we believe that increasing the number of employed doctors who can perform clinical-training will ensure the hiring and keeping of doctors in the prefecture.

Thus, we are working to improve the level of clinical training all over the entire prefecture, not only in Fukushima Medical University, by providing top-class clinical training, with a network of eighteen hospitals throughout the prefecture participating in the training. Through this, we can produce doctors who work at the forefront of their respective fields, and increase the future employment within Fukushima of physicians who also underwent their clinical training in the prefecture.

In addition, we will provide support for residency training through a new specialist system.

#### Main Practices

Enhancement of internship and residency training
 Providing medical, welfare and community experience programs
 Support for lifelong medical education by holding various courses and seminars
 Management of the Fukushima Clinical Training Hospital Network
 Joint venture with Fukushima Regional Medical Support Center



# Shining on our hopes and the future

[Fukushima International Medical Science Center]

## <u>Message</u>

Aiming at a future that can be shared globally, by viewing the tragic events and experiences of Fukushima through a scientific lens.

The Fukushima Global Medical Science Center, which was also set up as the Fukushima Prefecture Reconstruction Plan, is one of the major pillars of Fukushima's revitalization. It plays an important role in the reconstruction/activation of the field of medical care in the local community, and communicates the reconstruction process to the whole world.

The main center is made up of five smaller centers (the Radiation Medical Science Center, Advanced Clinical Research Center, Translational Research Center, Thyroid and Endocrine Center, and Health Promotion Center) and two divisions (Education and Human Resources Development Division and Advanced Medical Care Division). The main center's responsibilities are to keep an eye on the health of Fukushima's residents since the nuclear power plant accident over the long-term, to provide ultra-early detection of diseases using advanced medical devices, to offer a high-level professional treatment at the earliest possible stage, and to aid in the advancement of the medical industry through the development of the latest diagnostic drugs and methods. By carrying out these responsibilities, we aim to prevent diseases, promote the health of the residents of Fukushima, and further extend their life expectancy.

It is our moral obligation to record what we have learned from the disaster and the nuclear accident, for posterity. We are responsible for developing the experience of Fukushima as a science, and for the production of medical professionals who will in turn be responsible for the next generation. The Fukushima Global Medical Science Center is willing to make an effort to become a leader in these areas.



Koichi Tanigawa, Director, Fukushima Global Medical Science Center



### **Radiation Medical Science Center**



## We will continue to watch over the health of Fukushima's residents with careful deliberation and wisdom, and we will persist in our efforts to contribute to the reconstruction of the prefecture.

#### Kenji Kamiya,

#### Director, Radiation Medical Science Center

In response to the Fukushima Daiichi Nuclear Power Plant accident, the Health Management Survey aims to inspect the state of the physical and mental health of the residents of Fukushima Prefecture, in order to detect and prevent diseases by receiving early treatment, as well as maintain and improve their long-term health. The survey is conducted as a consignment project from Fukushima Prefecture. International organizations, academic organizations, including universities and research institutes, and government agencies inside and outside of Japan, are collaborating in order ensure that the survey is as effective as possible.

After the nuclear accident, we were concerned about the influence of radiation on the bodies, such as the thyroid, and minds, of the children of Fukushima, as well as other changes to health, such as exercise habits, diet and sleep. Each person has a different mental health condition. Through this research, it is necessary to accurately understand the changes in health of the residents, and promote health and care that reflects these changes, and addresses people's thoughts. At the same time, the results obtained from this survey is currently expected to be disseminated both domestically and internationally as a common intellectual asset to mankind. We will continue to strive to disseminate information for those who are responsible for the current generation and the next.

In order to carry out this research continuously, it is crucial to cooperate with not only municipalities, who are in contact with residents on a daily basis, but also the prefecture as a whole. We would like to build a foundation for the restoration and recovery of Fukushima through the practice of effectively monitoring health, bringing together the collective experience and efforts of the many medical, both from inside and outside the prefecture, who are all united in their desire for the reconstruction and revitalization of Fukushima Prefecture.

## **Advanced Clinical Research Center**

# We would like to contribute to the early diagnosis and development of new medicine by using Cyclotrons and PET/MRI.

This center, which has been fully operational since June 2016, enables the early treatment of cancer, brain disease, heart disease and others as a result of diagnosis imaging using advanced medical equipment. As a medical institution, the Advanced Clinical Research Center became the first in Japan to use a medium-size cyclotron to produce new drugs for the latest treatments. We aim to create the highest quality environment that passes international standards for the safety and quality control of pharmaceuticals, and we believe that we can contribute to the development of new drugs by working in collaboration with pharmaceutical companies. The PET/MRI we use in our center can obtain clear images that are used to specify affected areas. Furthermore, these enable us to monitor body functions so that we can diagnose diseases earlier.

Setting up an environment that allows a consistent process from drug discovery to clinical research and trials, we will make research and drug development a central part of our operations, in addition to treatment. We would also like to nurture medical professionals who can contribute to research and medication development.

### Introduce high-precision diagnostic medical devices. Lead early treatment with advanced medical technology.

At the Advanced Clinical Research Center, we conduct early diagnosis of various diseases via diagnostic imaging with advanced medical devices, and ensure the safety and security of the citizens of the prefecture.





### Medical-Industrial Translation Research Center (TR Center)



Establishment of a valued new industry and creation of new jobs by supporting medical service-related industries ⇒ Revitalization

### Philosophy of the Medical-Industrial Translation Research Center



This center, known as the TR Center, was established to promote the Fukushima Pharmaceutical Industry Support Base Project, which is one of FMU's earthquake and tsunami reconstruction projects. By facilitating the connection between medical and industrial fields, we will support the development of new therapeutic, diagnostic, and test reagents for various diseases, cancer in particular. Through our efforts, we will contribute to the creation of new industries in Fukushima Prefecture, attracting companies, creating jobs and, of course, promoting the maintenance of the health of everyone via state-of-the-art cancer treatments and diagnosis.

Disaster Medicine and Medical Industry Bldg. where TR Center resides

#### Shinya Watanabe,

Director Medical-Industrial Translation Research Center

The Canter's activity is based on the project which was launched in 1999 led by Ministry of Economy, Trade and Industry of Japan. We have 6 Departments and 3 Offices to support development of medical products to facilitate and empower "The Fukushima Translational Research Project (Fukushima Project) aiming to create a new industry ventures and employment by facilitating the alliances and collaborations between Medical and Industry world.

Our current goal is the Center to become self-sustaining organization as a new industry venture by valuing data and/or analytical techniques including our know-hows, and conducting contract research. To have this realized, it's important to create the products which people mark as "want to use", but it's useless if we are not able to provide the right person who need one. We are sure that if we are able to bring those needs out and realize branding strategy, it will be a significant assistance. Toward the future, to contribute the improvement of medical industry, we are committed to build the mechanism that pharmaceutical companies, research organization and other institutions are able to optimize our achievements.

### **Health Promotion Center**

### We would like to contribute to the reduction of the health disparity, and allow people to live healthier lives for longer, through scientific evaluation and analysis.

#### Hiromasa Ohira, Director, Health Promotion Center.

The Health Promotion Center is designed to play a think-tank role regarding preventive medicine and health promotion in the Second Healthy Fukushima 21 Plan, which holds the basic philosophy of "people and communities are smiling and energetic". As our main project, firstly, we scientifically evaluate and analyze the data printed on the patients' receipts, as well as medical checkups, nursing care, and other data, which will be stored in the Fukushima prefectural health database (FDB), as well as stroke and myocardial infarction onset. Secondly, we identify health issues based on our assessment and analysis results, then provide advice and support for prefectural health-promotion measures, as well as support for the development of municipal projects. Thirdly, we provide workshops to train medical professionals, such as health nurses, who are responsible for the health promotion of the prefecture. We also conduct training for public health physicians in cooperation with the prefecture, to ensure their, the physicians', continued work and advancement in Fukushima. In addition, as other projects, we will hold events to highlight the importance of health promotion to the people of Fukushima Prefecture.

Through these projects, we hope to contribute to the prevention of diseases related to helping the general population live healthier lives for longer.



### **Thyroid and Endocrinology Center**

# We would like to provide the best treatment for patients as a general window for the three departments.

### Susumu Yokoya, Director, Thyroid and Endocrinology Center.

This center plays a role in the diagnosis and treatment of endocrine system diseases, and provides treatments for other departments, such as the Department of Surgery, the Department of Internal Medicine, the Department of Urology, and other departments. However, we also serve as a comprehensive contact point for these treatments, and it is possible to conduct comprehensive medical treatment by looking at patients as a group, beyond the boundaries of the departments. In other words, by gathering specialists of each clinical department, the most appropriate treatment for patients can be thoroughly discussed and decided upon. At this center, we accept people from all over the prefecture who wish to have their thyroid examined, and we also accept people who require treatment regarding their thyroid. Furthermore, treatment using advanced equipment developed in the Advanced Clinical Research Center can be performed by our center's staff.



## **Advanced Medical Care Department**

### We provide advanced medical care as a bastion of medical care for the people of Fukushima Prefecture.

The Advanced Medical Care Department is a department for the early diagnosis and treatment of diseases by utilizing advanced medical technology and equipment. We will build a system that can provide advanced medical care with three pillars.

An environment to protect mothers and their children, where children can be raised with peace of mind

- Enhancement and strengthening of the Comprehensive Perinatal Medical Center.
- Establishment of the Child Medical Center
- Establishment of PICU (Pediatric Intensive Care Unit)

Emergency medical center for responding to disasters such as nuclear accidents

Strengthening the function of the Core Disaster Medical Center as a base for disaster medicine Establishment of a core Disaster Medical and Advanced Critical Care Center that combines treatments for patients that have been exposed to high levels of radiation due to accidents and disasters



- Installed 9 beds for RI treatment Improvement of the Hematology
- Department, Clinical Oncology Center, Outpatient Chemotherapy Center and Badiation Department
- Establishment of a female ward



PICU (Pediatric Intensive Care Unit)

Care,

Research

hub for medical care, education, and research, that we can respond unexpected events (for example disasters and nuclear accidents) and monitor the health of alization of a society here citizens can live safely and securely.

### **Department of Education and Human Resources Development**

### We educate health professionals who will be able to look after the health of the citizens of Fukushima Prefecture.

Bring up professionals of the next generation who specialize in disaster and emergency radiation medical care, as well as community health, in order to continue and expand our medical care.

### **Clinical Medicine**

Radiation Health Management (Opened 10/1/2011) Thyroid and Endocrinology (Opened 3/1/2013) **Disaster Psychiatry** (Opened 10/1/2013) **Radiation Oncology** (Opened 8/1/2014) Medical Oncology (Opened 9/1/2014) **Radiation Disaster Medicine** (Opened 10/1/2014)

Social Medicine

Epidemiology (Opened 8.1.2014)

Health Risk Communications (Opened 1/1/2015)

### **Basic Medicine**

Radiation Life Science (Opened 11/1/2013)

Radiation Physics and Chemistry (Opened 8/1/2013)



laboratory

Foster and recruit medical professionals who are able to provide lifelong nealth management to Fukushima residents

### Medical Support for the Futaba Region

### In April 2016, we established the Futaba Emergency General Medical Support Center.

In addition to protecting the health of workers engaged in returning residents to their homes in the Futaba area, as well as nuclear power plant and reconstruction projects workers, we support the recovery of the Futaba region from a medical perspective by eliminating anxiety regarding medical risks, and encouraging people to return to their homes.

### **Main Initiatives**

To support the Futaba Medical Center

To strengthen existing support for the early diagnosis and treatment of dementia, and to lead the prevention of serious illnesses in the Soso district, as well as, through consultations, care for people with illnesses who have not yet undergone treatment, and those wishing to prevent aggravation of their existing illnesses.

Support for the installation and operation of multipurpose medical helicopters



### Familiar smiles are shining

And born from that is a form of heartwarming medicine. Connecting local bonds through medicine is our important mission. Each smile illuminating gently.

# Lighting our bonds with the community

[Introduction of Fukushima Medical University Hospital]

## Message

### We support everyone as a warm, welcoming hospital that anyone can use.

The Fukushima Global Medical Science Center, which supports Fukushima's recovery following the Great East Japan Earthquake, was completed in 2017, and the hospital attached to the medical school includes a "Mirai" building, where mothers and children can be hospitalized with a sense of security and trust that they are in good hands at our institution, and a high-spec surgery building with advanced equipment. The Mirai building has a Neonatal Intensive Care Unit (NICU), a Growing Care Unit (GCU), and a Maternal-Fetal Intensive Care Unit (MFICU) on the 3rd floor, as well as a Children's Medical Center with a PICU and a sterile room for pediatric chemotherapy on the 5th floor. The skilled professionals who work in this building are responsible for the function of children's hospitals in Fukushima. The high-spec surgery building has three operating rooms, and a hybrid operating room with a vascular imaging device that can be used to conduct fusion operations with advanced catheter treatment with new blood vessels, as well as thoracotomy and cranitotmy. In MRI operating rooms with high-magnetic field MRI, advanced surgery is conducted by imaging of the lesions during surgery, and difficult artificial joint surgery is conducted in a sterile surgery room. In addition, in the Patient Support Center, which strengthens our bonds with the local community, patients who are being admitted to any department undergo a prehospitalization interview. This enables the promotion of regional cooperation with hospitals inside and outside of the prefecture, thus allowing our patients to access the treatment they need being discharged. Our goal is for our hospital to be a welcoming institution that anyone can and will use, and we always stand by patients to provide the best medical care possible. We ask, and sincerely thank you, for your support and cooperation.



Kiyoshi Saito President, Fukushima Medical University Hospital



### About Fukushima Medical University Hospital

The origin of Fukushima Medical University dates back to the 1870s. It underwent a number of difficult times, including the actual abolishment of the school. However, its establishment as a public medical university was finally approved in 1952, when the university hospital was also founded, thanks to the efforts and support of the staff and people in Fukushima.

It serves as a general hospital with 39 clinical departments and 778 beds, offering advanced medical care. In 2017, the average numbers of inpatients and outpatients per day were 611 and 1,453, respectively, which represent our popularity with the people in Fukushima. We will continue to improve our service to meet the diverse medical demands and needs that face us.



### Philosophy

### "We will walk side-by-side with the residents of Fukushima, and provide them with medical services that support their health with heartwarming care."

All of our staff are united in their commitment to helping people maintain their health and overcome illness, and we take pride in this task as medical professionals.

### Policies

- 1. We provide medical care that meets high ethical standards and is based on respect for our patients' lives, rights and privacy.
- 2. We provide the most advanced medical care, that meets the individual needs of our patients.
- 3. We produce genuine, competent healthcare professionals who will support the future of the people of Fukushima.
- 4. We focus on cooperating with the local community and creating new and better medical care.
- 5. We disseminate the results of our medical care to the prefecture, the country, and the world.

### Fukushima Medical University Hospital – Organization

#### University Hospital

Department of Clinical Quality Management Department of Infection Control / Department of Medical Information Patient Support Center / Futaba Emergency General Medical Support Center Disaster Medicine Department

#### Clinical Division (39 services)

Cardiology / Hematology / Gastroenterology / Rheumatology Nephrology and Hypertension / Dialectology, Endocrinology and Metabolism Neurology / Pulmonary / Kampo Medicine / Oncology General Internal Medicine / Chest Surgery / Gastroenterology Surgery Hepato-Biliary Pancreatic and Transplant Surgery / Breast Surgery Pediatric Surgery / Endocrine and Thyroid Medicine Endocrine and Thyroid Surgery / Cardiovascular Surgery Neurosurgery / Orthopedic Surgery / Plastic and Reconstructive Surgery Obstetrics / Gynecology / Pediatrics / Pediatric Oncology / Ophthalmology Dermatology / Urology and Adrenal Endocrine Surgery Otolaryngology - Head and Neck Surgery / Neuropsychiatry / Radiology Radiotherapy / Nuclear Medicine / Anesthesia and Pain Medicine Diagnostic Pathology / Dentistry and Oral Surgery / Emergency Medicine Rehabilitation Central Clinical Facilities (25 facilities) Department of Clinical Laboratory Medicine / Medical Imaging Center Surgical Center / Intensive Care Unit / Maternal and Perinatal Center Department of Pathology Department of Blood Transfusion and Transplantation Immunology Department of Community and Family Medicine Department of Endoscopy / Rehabilitation Center

Emergency and Critical Care Medicine Center / Clinical Oncology Center Clinical Engineering Center / Dialysis Center / Pain Clinic Thyroid and Metabolism Diagnosis Center / Brain Disorder Center Prosthetic Joint center / Genetic Diagnosis Center Children's Medical Center / Organ Transplantation Department Cardiovascular department / Department of Nutrition / Supply Center Department of Innovative Research & Education for Clinicians & Trainees

#### Internal Organization

Central Blood Collection Room / Gender Specific Medicine Center Clinical Research Center / Department of Allied Health Professionals Department of Nursing / Department of Pharmacy

#### Department of Hospital Management

Hospital Management Division / Medical Affairs Division

### Aiming for an accessible hospital for everyone.

As a university hospital, while advancing the function of medical care, research, and education, we are actively developing a complete implementation of a 7 to 1 nursing system, improving our medical appointment system and constructing a new and improved medical information system. In this context, our university hospital has doctors, nurses, pharmacists, administrative workers, and various technicians with a variety of special skills, who all confront a given patient's illness or injury as a single team.

In addition, we are improving the hospital to ensure that is more easily accessible, by securing parking spots for handicapped and disabled drivers/people. In the university hospital, medical professionals are working together with patients and their families to fight disease and refine our medical care. Aizu Medical Center – providing cutting-edge medical services and supporting medical systems in the entire Aizu region

# **Aizu Medical Center**

The Aizu Medical Center was established as an affiliated institution of Fukushima Medical University. The center supports the regional medical services of the Aizu and Minami-Aizu areas by mutually complementing, and collaborating with, local medical institutions.

Fukushima Prefectural Aizu General Hospital and Fukushima Prefectural Kitakata Hospital are merged and <u>reborn as Aizu</u> Medical Center

STATE OF THE OWNER WHEN THE PARTY OF THE PAR

Multipurpose Ward

General Ward Tuberculosis Ward

Infectious Disease Ward

Administrative

Office

Machine Room

Palliative Care Unit

### **Clinical Divisions**

General Internal Medicine / Kampo Medicine / Kampo Surgery / Cardiology / Hematology / Gastroenterology / Metabolism, Diabetes and Nephrology / Infectious Diseases and Respiratory Medicine / Neurology / Neuropsychiatry / Intestinal and Coloproctological Medicine / Coloproctology / Surgery / Orthopaedic and Spinal Surgery / Ophthalmology / Dermatology / Urology / Otorhinolaryngology / Radiology / Anesthesia / Diagnostic Pathology / Dentistry / Rehabilitation Unit / Palliative Care / Cardiovascular Surgery

Affiliated Hospital: 26 clinical departments) \*Including the Clinical Department of Hospital Advocacy

Research Center: Kampo Surgery



Pharmacy —/ Food and Nutrition Services Department

### Message from Director, Aizu Medical Center

# We support medical systems in the entire Aizu region by providing advanced medical service and education opportunity for students, and alliance and collaboration with local medical institutions.

"Fukushima Medical University, Aizu Medical Center" was reborn as the institution with diagnosis, research and educational facility in May 2013. As Fukushima Prefecture has different variety of region which makes difficult to cover local-specific issues to create "Fukushima Model" of regional medical services We are all committed to deliver and work toward together for better, safe and reliable medical services to the residents of Aizu Region.



**TAKAKU Fumimaro** MD. PhD. Director, Aizu Medical Center Fukushima Medical University

### A hub that supports medical services, education and research

As the Aizu Medical Center is an affiliated institution of Fukushima Medical University, we provide advanced medical care to the patients, as well as education and training opportunities for students and residents. The center also functions as a hub to engage in the implementation of infection control or remote medical care measures policies, as well as the promotion of alliances among regional medical institutions.

### Advanced medical care in specialized fields

The Aizu Medical Center provides innovative medical care in specific areas of expertise by establishing specialties such as a Kampo Medicine Center, a Blood Disorder Treatment Center, an Advanced Endoscopic Diagnosis and Treatment Center, and a Spine and Spinal Marrow Advanced Medical Center. In addition, we have established a dedicated ward for palliative care which provides a comfortable environment for hospitalized cancer patients.

## A research institution affiliated with Fukushima Medical University

The Aizu Medical Center has the facilities to promote medical-industrial research in cooperation with private companies, or to engage in clinical ideological studies that cover the entire Aizu Region. Furthermore, the Kampo Medicine Research Office focuses on natural medicine and engages in acupuncture research.

Our Philosophy Work on the research and development of advanced medical services, foster medical professionals who are deeply compassionate, provide safe and quality medical services for our patients, and contribute to the creation of new regional medical care systems.

#### **Our Goal**

In order to realize our basic philosophy, we aim to:

Value and respect lives, human rights and privacy. Provide patientoriented medical care services with high ethical standards.



- **3** Train genuine and competent medical professionals who are able to support people's lives and future
- 4 Create new medical science and medical treatment combining the expertise of medical care, research and industry of the region.
- 5 Disseminate ever-improving medical information to the prefecture, to the country, and to the world.

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### Aizu Medical Center Topics



Photo: Pre-dawn ginseng picking (Aizu/Kouzashi district, September 5, 2015)

### Local production and consumption of herbal medicines used for medical treatment

In Japan, about 90% of the herbal medicines used in Kampo medicine are imported, and about 80% are specifically imported from China. On the other hand, we promote the growing of medicinal plants domestically, but the current situation in this area is not an optimistic one. The Aizu Medical Center is engaged in the local production and consumption of herbal medicines used for Chinese medicine, including contributions to regional development.

Aizu has been one of the leading medicinal ginseng-producing regions in Japan since the Edo period. There was even a word specifically for Aizu-grown ginseng, which was favored by the shogun Yoshimune, and was therefore extensively distributed and grown elsewhere. However, in recent years, production has plummeted, and in 2012 there was a crisis that led to the dissolution of the Aizu Ginseng Assembly. A Chinese Medicine Department was established in the now-

defunct Fukushima Prefectural Aizu General Hospital in June, 2011, the year of the Great East Japan Earthquake, and in December of the same year, Aizu ginseng, which was produced in Aizuwakamatsu, was fully adopted for medical treatment, and we have since been putting our efforts into the production of this ginseng. We have been supporting the cultivation of peonies for medicinal products, starting at around 2012, and we began to use the Okutadami Shakyaku (peony root) in April 2017. Then, in since June that year of that same year, production of the medicinal root touki (Japanese angelica root) restarted at Minamisanriku, which had been damaged by the tsunami, and began to be used for medical use.

Our hospital uses more than 100 kinds of herbal medicine. Shakuyaku is our 2nd most commonly-used herbal medicine, ginseng is 12th (though 2nd in terms of the amount of money it generates for the hospital) and Touki is 13th, (12th in amount of money generated). These drugs contribute to medical practice in the local community as important, frequently-used natural remedies.

In order to use these locally-grown medicinal plants for medical treatment without relying on cheap imports, the dedication of pharmaceutical companies is also indispensable at this time. We will continue to strive for local consumption of medically-purposed herbal medicines, with full appreciation of everyone who contributes to making this a reality.

### From Aizu to the World - Accepting Foreign Clinical Practitioners

The Aizu Medical Center Department of Gastroenterology actively accepts and educates foreign physicians who want to learn new endoscopic techniques, specifically focusing on ultrasound endoscope techniques. So far, we have accepted five people over a period of one to three months from countries such as Vietnam, China, and Bangladesh.

In 2014, the Aizu Medical Center Hospital was designated as a clinical training hospital. Since it was approved by the Ministry of Health, Labor and Welfare, foreign physicians are now able to study in the field as clinical practitioners who can actually perform endoscopic procedures. In Japan, where strict regulations have been made, foreign physicians have previously been forced to study only through observation. However, the fact that physicians from overseas are able to perform the procedures has led to repeated reports of satisfaction with our hospital's environment. In addition, the presence of overseas physicians has created a pleasant English-speaking environment for all the people involved in the course, including nurses, BSL students, and all those who interact with the physicians. In particular, it is an important opportunity for younger doctors and students to forge bonds with their international counterparts.

I believe that foreign physicians who have studied in Aizu will be able to take the endoscopic technology that they study at our hospital, and knowledge that they have learned, and present it to the rest of the world. These physicians are also able to inform others about the existence and education of the Aizu Medical Center Gastroenterology Department in various fields. The From Aizu to the World project, which is centered on digestive endoscopy education, is constantly working to progress and evolve.



Dr. Nikhil Nath from Bangladesh (2016)



### Medical Education System Development Center

The Aizu Medical Center Medical Education System Development Center is centered on the Department of Surgery and General Internal Medicine, and develops educational materials that are aimed at the enhanced medical education of medical school students and trainee physicians. In 2015, in cooperation with the Jichi Medical University, the abdominal walls of pigs used for experiments were frozen and transported to the Aizu Medical Center to create a skin suture practice model. In 2016, we developed a small intestine anastomosis model using a new fixative liquid, and in 2017 we began training for students and practitioners.



An app, called the "Advanced Life Support Training App: ACLS case scenario" (iPad version), has been developed for trainees and nurses, and as of Autumn 2017, is available for both iPad and iPhone.

In addition, a Gamma Calculator, which can calculate gamma radiation in µg/Kg/min, according to how frequently it is used in surgery, anesthesiology and emergency departments, was developed, and it has also been available since Autumn, 2017. These educational materials are developed through collaborative research with affiliated companies. In the future, we believe that the possibilities for the technology and techniques we create will expand greatly, by looking into educating people with occupations other than student or trainee physician, as well as patients.

### Spine and Spinal Marrow Advanced Medical Center Initiative (Comprehensive treatment centering on orthopaedic and spinal surgery for spinal deformity)

The Aizu Medical Center has a Spine and Spinal Marrow Advanced Medical Center, where three departments, the Department of Orthopaedic and Spinal Surgery, the Department of Rehabilitation Medicine, and the Department of Neurology, are combined to provide comprehensive treatment for patients with any spine and spinal cord disease or injury, including herniated disc, lumbar spinal canal stenosis, spondylolysis, spondylolisthesis, and cervical myelopathy. The Department of Orthopaedic and Spinal Surgery plays a central role. In particular, there are many cases of spinal deformation (curvature of the spine, such as scoliosis, kyphosis, and kyphoscoliosis), and patients come from not only all over the prefecture, but from across the country. From adolescent children with idiopathic scoliosis to

elderly people suffering from complex spinal deformities, such as kyphosis, the treatments are varied. Our surgical treatment is characterized by the latest corrective surgery, for example minimally invasive surgical methods such as extreme lateral interbody fusion (XLIF), and anterior instruments. Of course, following surgery, we also focus on rehabilitation. We perform our own conservative treatment for spinal deformities, such as special trunk muscle training, stretching and self-correcting exercises. Joint development with a manufacturer of remedial corsets with less burden is currently under clinical research. In terms of research, we installed a VICON 3D motion analysis system, as well as a Spinal Mouse and trunk muscle strength-measuring instruments. These data are fed back to the patient and contribute to determining appropriate treatment methods. If the spinal deformity progresses, the patient's quality of life (QOL) not only decreases, but it becomes a very important issue related to their life and prognosis. The Department of Orthopaedic and Spinal Surgery has been actively involved in this issue, and cooperates with the Spine and Spinal Marrow Advanced Medical Center to constantly work on it.



# School of Medicine / School Graduate School

# School of Health Sciences (tentative name) < (April 2021) under design.>



## Preparing section for new faculty of medical science

### School of Health Sciences (tentative name) < (April 2021) under design.>

A new faculty for training physiotherapists, occupational therapists, medical radiologists and clinical laboratory technicians will be established in April 2021. The new faculty building will be constructed in the Sakae-machi district of Fukushima city.

### **Department of Physical Therapy**

Physiotherapists improve basic activities that are essential for daily life, such as standing up, standing still, and getting up, using exercise therapy and physical therapy. In the Department of Physical Therapy, we train physiotherapists who contribute to community health care in Fukushima, and provide them with leadership skills that will aid in the development of physical therapy.

### **Department of Occupational Therapy**

The Department of Occupational Therapy practices education and research on therapy that promotes a better life in people's health through work, and fosters the leaders of next-generation occupational therapists with advanced knowledge and skills and a deep compassion.

### Department of Radiological Sciences

In the Department of Radiological Sciences, we will train professionals who can contribute to the reconstruction and development of Fukushima as specialists in radiation, and we will research and educate on advanced radiation treatment technology that utilizes high-level radiation medical equipment, so that we can train medical professionals who will be able to contribute to the reconstruction and development of Fukushima, as specialists with skills for accurate diagnosis and appropriate treatment in the field of radiation.

### **Department of Clinical Laboratory Studies**

The Department of Clinical Laboratory Studies practices education about blood tests and biochemical tests to measure blood components and chemicals, microbial tests to examine bacteria and viruses, pathological tests to determine the tissues and cells sampled via observation through a microscope, and physiological examination to examine the state of the body with ECG and EEG. We train Examination Specialists, who can operate advanced medical technology.

Information

### International Exchange Project

# We signed an agreement with Ohio State University College of Medicine's Department of Radiology (Columbus City, United States).

In June 2017, a collaborative agreement on education and research was concluded between Fukushima Medical University and the Department of Radiology in Ohio State University College of Medicine in the United States. In accordance with this agreement, the clinical practice at the Ohio State University Comprehensive Cancer Center, James Cancer Hospital, and/or the university's Department of Radiology was started for the sixth graders of the FMU School of Medicine from 2018. Ohio State University is one of the best universities in the United States, with 14 faculties and the largest number of students in the United States (approximately 62,000). It is also the top-ranked state university in the country. In addition, the James Cancer Hospital is also a designated research center for the United States National Cancer Institute (NCI) and is the third largest cancer center in the United States, conducting approximately 500 clinical trials. The center's Department of Radiology is rated as one of the top departments in the United States. We believe that the chance to practice at an American systemized cancer treatment site such as this one is a meaningful experience for our medical students - the next generation of Fukushima healthcare.

Currently, a member of the Department of Radiology (radiation therapy) in FMU is also a staff member of the Department of Radiology at Ohio State University, and we are discussing future joint research. In the near future, we are planning to conduct a long-term study-abroad program for researchers, and we plan to further develop our relationship with Ohio State University, including personnel exchanges.



## Academic exchange agreement with North-Western State Medical University named after I.I. Mechnikov (Russia, St. Petersburg)



FMU signed an agreement for academic and student exchange on March 5, 2018 with North-Western State Medical University named after I.I. Mechnikov in St. Petersburg, Russia. This agreement was concluded in response to the adoption of the "Leader development project in the field of disaster and radiation-related medical science," which was approved by the Japanese Ministry of Education, Culture, Sports, Science and Technology, and is one of the projects that aim to strengthen Japanese universities' abilities to contribute to the world. The purpose of this agreement is to develop a new educational collaboration system between Russia and Japan, and to produce professionals that are at the heart of the world's most active disaster- and radiation exposure-related medical fields. In the future, we will participate in international exchange programs, especially in the Nagasaki University and Fukushima Medical University Joint Graduate School, and we are planning to promote the globalization of FMU

### Student dispatch and international student acceptance

In order to promote the internationalization of research and education, the School of Medicine conducts a short-term study-abroad program for fourth year students of the School of Medicine. In 2017, for their basic advanced training period, eight medical students from our university traveled abroad to four universities; Wuhan University in China, Mount Sinai Medical University in the United States, and Belarus Medical University and Gomeli Medical University in Belarus. In addition, one fifth grader from our School of Medicine traveled to Ho Chi Minh City Medical and Pharmaceutical University in Vietnam during their summer vacation, to participate in an international health and epidemiology training project as a teaching assistant.

Please refer to the following link to learn about our international exchange programs and overseas student reports.

http://www.fmu.ac.jp/univ/daigaku/kouryu/index.html

On the receiving end of our exchange programs, four medical students from Wuhan University came to FMU and partook in clinical tours, and two medical students from Mount Sinai Medical University came to Japan to conduct international collaborative research with FMU medical students.



### Topics

### Department of Gastrointestinal Surgery, Fukushima Medical University: A high-volume center for esophageal cancer

The treatment of esophageal cancer is a specialized field that requires the maturity of advanced medical technology and team care, and it has been reported that the number of surgical cases is associated with treatment results, such as frequency of complications and fiveyear survival rate. In the Department of Gastrointestinal Surgery at Fukushima Medical University, there is an esophageal specialist team (doctors, nurses, physiotherapists, and others) that treat esophageal cancer with a focus on surgical therapy. There were 45 such surgical cases in 2017, and the department functions as a regional high-volume center; a large number of surgeries are performed there every year. In particular, this department has established a system that can provide advanced esophageal surgical treatment with a strong focus on thoracoscopic resection of the esophagus, and esophageal resection after preoperative chemotherapy. In addition, in recent years, we have actively adopted cancer immunotherapy, and have conducted clinical trials of Opdivo for esophageal cancer and cancer vaccine therapy. Furthermore, we are preparing the introduction of robotic surgery for esophageal cancer, and we have constructed a collection of therapeutic systems for the purpose of improving the clinical results of this cancer, from surgery to drug therapies. Department of Gastroenterological Surgery, School of Medicine



Thoracoscopic resection of the esophagus (prone position)

### Introduction of endoscopic photodynamic therapy for esophageal cancer

The Endoscopy Department is a central medical facility of Fukushima Medical University Hospital, where physicians and doctors from different departments perform cutting-edge digestive endoscopy treatment.

In addition to endoscopic submucosal dissection (ESD), a procedure introduced in 2003 for treatment of early gastric cancer, esophageal cancer, and colon carcinoma, we actively conduct endoscopic injection sclerotherapy (EIS) for esophageal gastric varicose veins, and endoscopic ultrasound-guided fine needle aspiration (EUS-FNA) for pancreatic tumors and gastrointestinal mucosa tumors. Furthermore, per-oral endoscopic myotomy (POEM) has been introduced at our hospital, after being introduced to the Tohoku region by Tohoku University. This procedure is now also performed at Hirosaki University.

From April 2017, photodynamic therapy (PDT) was introduced for the treatment of any remaining or recurring esophageal cancer after radiotherapy or chemical radiotherapy. Ours is the the third institution in Tohoku to offer this therapy, following Tohoku University and Akita University. This is a new method of treatment to combat invasive cancers that spread to the lower muscous membranes and muscle layers, which are typically difficult to cure. Along with ESD, PDT has become a pillar of treatment for esophageal cancer. Going forward, we would like to accept patients from all over Fukushima Prefecture and contribute to improvements in the prognosis of esophageal cancer patients.

In the endoscopic department, we will continue to proactively introduce new digestive endoscopies and therapies that can be utilized in Japan in the future, and work to contribute to the medical care of Fukushima Prefecture.

Endoscopy Department of Fukushima Medical University Hospital



# High Magnetic Field MRI Intelligent Operating Room



Intraoperative MRI Operating Room

In November 2017, our long-awaited intraoperative MRI operating room was put into use. An important point about this room is that a 3-Tesla High Magnetic Field MRI system has been installed and that its high image quality and high function makes it easier to perform accurate diagnoses. Also, not only does intraoperative MRI function as a single unit, but also is part of a sophisticated, integrated system, which also includes a surgery navigation system and a surgical microscope. In the conventional operating room, because the shape of the brain changes during the operation, the accuracy of the navigation unfortunately decreases remarkably because said navigation is based on an MRI image taken before the operation. However, in this operating room, the images captured by MRI intraoperatively can be sent immediately to the navigation system, enabling accurate surgery based on current images. There is also an augmented reality (AR) function, in which an image is projected onto the surgical microscope's field of view, providing the locations of tumors to resect or important nerve fibers to preserve.

Intraoperative MRI can also be used to locate tumors in situations where determining whether there is a tumor remaining even with a surgical microscope would normally be difficult. The intraoperative 3-Tesla MRI High Magnetic Field system is an advanced neurosurgery system that is only available in four hospitals throughout Japan. We expect this system to be indispensable going forward.

Department of Neurosurgery, Fukushima Medical University Hospital

## History Chronology

1871: Aug 10th	Shirakawa Temporary Hospital Opened. The Medical Lecture Center Opened in September	1954: Mar 10th	The Medical University-affiliated nursing training center was renamed as Medical University Affiliated Nursing School.
1872: Feb 29th	Shirakawa Temporary Hospital relocated to Sukagawa and was renamed as Fukushima Prefectural Hospital. The Medical Lecture	1955: Jan 20th Apr 1st	Establishment of Medical University Preparatory Course was approved. Medical University Preparatory Course was
Oct	Center was renamed as Sukagawa Medical Center. Fukushima Prefectural Hospital was renamed as Prefectural Sukagawa Hospital.	1958: Sept 30th	inaugurated. The classes were renamed as courses due to amendments to Fukushima prefectural government regulations.
1873: Apr 21st	A new hospital building was constructed and opened. The hospital was renamed as Fukushima Prefectural Sukagawa Hospital.	1959: Oct 30th	Degree Evaluation Right was approved.
		1961: Mar 31st	Establishment of Graduate School of
1874: Jul	Fukushima Prefectural Sukagawa Hospital set a field hospital named Fukushima Branch Hospital in Fukushima town (currently Fukushima city).	1962: Dec 20th	Medicine was approved. Medical University student capacity increase was approved. (increased from 40 students maximum to 60 students maximum)
1875: Jan	Sukagawa Medical Center was renamed as Sukagawa Medical Lecture Center.	1968: Apr 1st	Established new school regulations.
1879: Oct 20th	Sukagawa Medical Lecture Center was renamed as Sukagawa Medical School. The head-branch relationship was abolished and Fukushima Branch Hospital was renamed as Prefectural Fukushima Hospital.	1969: Jan 22nd	Memorandum of agreement for student capacity limitation for the graduate school was accepted (Changed from 25 to 27 students, starting from April 1st, 1969).
		1971: Jan 12th	Medical University student capacity increase was approved. (increased from 60 students
1881: Aug 25th	Sukagawa Medical School was abolished.		maximum to 80 students maximum)
1882: Jan 22nd	Fukushima Medical School Opening Ceremony.	1983: Sept 16th	University song "Hikari no Tori (Bird of light)" was decided.
1884: May	Fukushima Medical School was classified as a Class-A Medical School.	1988: June 1st	The Affiliated Hospital was relocated from Sugitsuma-cho to Hikarigaoka.
1887: Mar 31st	Fukushima Medical School was abolished.	1989: April 1st	Headquarters of Medical University relocated
1890: Apr 1st	Prefectural Fukushima Hospital left the jurisdiction of the prefecture and was named Three-Counties Cooperated Fukushima Hospital.	April 1st	from Sugitsuma-cho to Hikarigaoka. Received Alumni Association Hall as a donation from the Alumni Association (Hikarigaoka Kaikan).
1925: Apr 1st	Three-Counties Cooperated Hospital was renamed Fukushima Public Hospital.	1997: Dec 19th	Establishment of School of Nursing was approved.
1944: Jan 10th April 1st	Inauguration of Fukushima Prefectural Women's Medical College was authorized. Public Fukushima Hospital became a	1998: Apr 1st	School of Nursing was inaugurated. (Maximum 80 students for each grade. Maximum 10 students for transfer admission
1	Fukushima Prefectural Women's Medical College-affiliated hospital.	2001: Mar 31st	at the third grade) School of Medicine Affiliated Nursing School
1947: Jun 18th	Inauguration of Medical University (old system) was authorized (maximum 40 students for each grade). Inauguration of a preparatory course for a medical university was authorized.	Dec 20th	was abolished. Establishment of Graduate School of Nursing School Research Course was approved.
		2002: Apr 1st	Graduate School of Nursing Research Course was inaugurated
1950: Mar 30th	Inauguration of the Medical University School of Medicine (old system) was authorized (maximum 40 students for each grade).	2003: Apr 1st	(maximum 50 students) Reorganized the Graduate School of Medicine (5 research courses to 4 majors. Increased
1951: Mar 31st	Women's Medical College and its affiliated hospital were abolished. Preparatory Course of Medical University was abolished.	2006: Apr 1st	student capacity from 27 to 37 students). Became Fukushima Medical University, an
1951: Apr 1st	Former Women's Medical College Affiliated Hospital became Fukushima Prefectural Medical University Affiliated Hospital.		independent administrative agency.
1952: Feb 20th	Establishment of Medical University (new		
April 1st	system) was approved. Inauguration of Medical University (new system) was authorized. Prefectural Senior Welfare School became a Medical University-affiliated nursing training center.		

# Fukushima Medical University

# Campus Map

Fukushima Medical University is located in Hikariga-oka, Fukushima City. It is a ten-minute drive toward the south from the city center. One of the major facilities close to the university is Fukushima University. Our campus has a land area of about 38 hectares and is filled with a variety of beautiful plants and trees.

### School of Medicine, School of Nursing, Research Building

- Building #2 (Research Building of Clinical Medicine)
- 2 Building #3 (Life Sciences & Social Medicine)
- 3 Building #4 (Human & Natural Sciences)
- 4 Building #8 (School of Nursing)
- 5 Building #10 (Research Building)
- 6 Building #12 (New Laboratory)

### **Common Facility**

- Building #5 (Training / Welfare / Lecture Facility)
- 8 Building #6 (Lecture Hall)
- 9 Building #11 (Clinical Lecture Hall)
- Auditorium
- ① Center for Academic Information Services
- 12 Gymnasium
- Baseball Field 1 Japanese Archery Field
- 🕼 Tennis Courts 1 Archery Field

- Athletic Field

### Hospital

- (B) Hospital (Building "HopeC")
- 19 Neuropsychiatry Ward
- 20 North Outpatient Building
- High Energy Building
- 22 MRI Building
- Becondary Emergency Medical Facility for Nuclear Disaster
- 29 Building #9 (Medical Training Center)
- **25** Operating Building

### Fukushima Global Medical Science Center

- 20 Disaster Medicine / Medical Industry Building
- 2 Environmental Dynamic Analysis Center Building
- Advanced Clinical Research Center Building
- 29 Medical Center for Fukushima "Life & Future Building" (Building "Mirai")

### Other Facilities

- 🚯 Buildina #1
- Security office
- 😳 Building #7 ( Hall "Hikariga-oka Kaikan" )
- Monument for Repose of Souls
- 3 Monument for Laboratory Animals
- 3 Incinerator / Former Sewage Disposal Facility
- 36 Heliport
- ③ Suginoko-en (Day Nursery)
- Oshimi-so (apartments for nurses)

### Parking Lot / Place of Storing Bicycles

- ④ Parking Lot (Student or Staff) Outpatient Parking Lot
- Bicycle-parking Area (Student or Staff)
- 4 Taxi stand



Route#4

to

Nihonmatsu

 $\sim$ Koriyama

Platanus (plane tree) has a common name of "Tree of Hippocrates" because of the legend that Hippocrates, the father of Western medicine, taught his pupils the art of medicine. Thereby platanus is a symbolic tree for medical universities. Our platanus tree is from the Kos Island in Greece, the origin of the Hippocrates legend.





Nursino



School of Medicine



to Fukushima-city









### FUKUSHIMA MEDICAL UNIVERSITY

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### Access to FMU

Car 13 min. From Tohoku Express way "Fukushima Nishi IC"

8 min. From Tohoku Express way "Matsukawa Smart IC"

Bus (Public Transportation) 36 min. from Fukushima Station East Exit Bus Terminal #5 or #6 bus stop



### **Aizu Medical Center**

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