

Application Guidelines
for October Admission, 2021 and April Admission, 2022

Doctoral Program in Medicine
Graduate School of Medicine
Fukushima Medical University

(This is a translation of the original Japanese version. The Japanese version is authoritative and always takes precedence over this version.)

1. Major, Division and Enrollment Capacity

The applicants for the PhD program of the Graduate School of Medicine are required to choose one of courses below, according to their research purpose, and to choose one of the divisions of research below to specialize in.

Major & Course	Enrollment Capacity		Division (*1)
	October Admission in 2021	April Admission in 2022	
Graduate School of Medicine (*2) Course for Researchers Course for Medical Practitioner Researchers	Examination for General Applicants: Several	Examination for General Applicants: 37 <div style="border: 1px solid black; border-radius: 15px; padding: 5px; width: fit-content; margin: 10px auto;"> General Applicants includes Working Professionals (*3) </div> Examination for International Students (*4): Several	Detailed information on the features of each course and research subjects of each division can be found on the Appended Table2 and following of this guidebook.
		【 Examination for International Students (*4): Several	

- Notes:
1. The divisions in the appended table2 is as of April in 2021. On applying for the entrance examination for the October admission in 2021 and the April admission in 2022, confirm the latest information about the divisions available on the web site of Fukushima Medical University.
 2. It is possible to conduct research at the graduate school while working for Fukushima

Medical University Hospital as a doctor-in-training.

3. Working professionals are defined as professionals who are currently employed at public agencies, research institutes, hospitals, or private companies and who will maintain their employment status after enrollment.
4. International students are defined as students who have entered Japan for the purpose of enrolling in graduate schools at universities and who hold or are expected to hold the resident status of “college student” as stipulated under the Immigration Control and Refugee Recognition Act.

Course for Researchers

This course is mainly for graduates of a School of Medicine, and holders of a Master’s degree from the Master’s program in Medical Science or Disaster & Radiation Medical Sciences at Fukushima Medical University and those who have a Master’s degree in a field other than medicine, and graduates researchers who will contribute to the development of the field of medicine.

Course for Medical Practitioner Researchers

This course is mainly for residents who have completed clinical resident training in the School of Medicine at Fukushima Medical University or other university after graduating from the School of Medicine at Fukushima Medical University or other university. This course produces specialized practitioners with research ability who will contribute to the development of clinical medicine.

This course also includes the “Oncologist Training Course” based on the “Cancer Professional Training Plan” (See page16).

2. Qualifications for Application

Applicants must have one of the following qualifications.

There may be cases where foreign applicants, who have received school education in Japan, are qualified for application even if they don’t meet the conditions below. For further information concerning your eligibility, please contact Student Affairs Division, Entrance Examination Section.

- (1) Those who have completed or expect to complete a 6-year program in medicine, dentistry, veterinary medical sciences or pharmacy, at a university by March 2022. For those who will enroll in October 2020 the term just mentioned will be by September 2021.
- (2) Those who have completed or expect to complete, by March 2022, 18 years of school education ending with the program in the field of medicine or related area in a country other than Japan. For those who will enroll in October 2021 the term just mentioned will be by September 2021.

Note: The above qualification includes those have received less than 18 years of school education but have spent an equivalent or longer period conducting research in a university, research institute, research organization or other facility, and whose research has been evaluated by the Graduate School of Fukushima Medical University as showing a scholastic ability equivalent or superior to a university

graduate in medicine or related field.

- (3) Those who are approved by the Minister of Education, Culture, Sports, Science and Technology as following:
- (i) Those who have graduated or expect to graduate from the National Defense Medical College pursuant to the Act for the Establishment of the Ministry of Defense (Act No. 164 of 1954) by March 2022. For those who will enroll in October 2021, the term just mentioned will be by September 2021.
 - (ii) Those who have completed a master's program or a professional graduate school program pursuant to article 99, paragraph 2 of the School Education Act (Act No. 26 of 1947) or can receive master's credentials.
 - (iii) Those who have been enrolled for two years or more in a doctoral course that does not distinguish between a master's and doctoral period, have earned 30 credits or more and have received necessary research guidance (including those who fall under Article 6-1 of the Degree Regulations (Ordinance of the Ministry of Education No.9 of 1953) prior to the revisions enacted under Ordinance of the Ministry of Education No.29 of 1974, and who have been recognized by the Graduate School of Fukushima Medical University as having a scholastic ability equivalent or superior to a university graduate in medicine or related field.
 - (iv) Those who have graduated from a university (in other than courses in medicine or related field) or who have completed 16 years of school education and subsequently spent at least two years conducting research in a university, research institute, research organization or other facility, and whose research has been evaluated by the Graduate School of Fukushima Medical University as showing a scholastic ability equivalent or superior to a university graduate in medicine or related field.
- (4) Those who have been recognized by the Graduate School of Fukushima Medical University in its individual qualification screening process as having a scholastic ability equivalent or superior to a university graduate in medicine or related field and who are 24 years old or older, or will be 24 years old by the end of the academic year.

The above qualifications are independent of whether or not the applicant has a medical license.

3. Preliminary Screening for Qualification

Applicants included in the Note in (2), (iii) and (iv) in (3), or (4) in Qualifications for Application must submit in person or send the required documents (specified in the Section (2) below) and undergo a screening for qualification in advance.

(1) Application Period For Preliminary Screening

October Admission	May 21(Friday), 2021, 9:00 A.M. – 5:00 P.M.
April Admission	November 5 (Friday), 2021, 9:00 A.M. – 5:00 P.M.

In the case of mailing, the documents must be sent by registered mail, and “Application for Preliminary Screening for Qualification” must be written in red ink on the front of the envelope. They must reach the office no later than the appointed day above.

(2) Application Materials

All documents must be in Japanese or English.

Materials	Notes
Application Form for Preliminary Screening	Prescribed form In the case of a foreign student, submit an educational background from elementary school entrance to high school (or its equivalent school) graduation. (Form is optional.)
Statement of Application Purpose	Prescribed form or form equivalent to prescribed one
Academic Transcript	Certificate issued and sealed by the educational institute last attended
Graduation Certificate	Certificate of completion or expectation to complete the degree, issued and sealed by the educational institute last attended
Employer’s Permission to Take Examination	Only for working professionals Prescribed form completed by the applicant’s superior or the director of the institute or organization where the applicant is currently employed
Statement of Research Activities and Achievements	Prescribed form or form equivalent to prescribed one A statement clearly providing the details of the contents and results of the research conducted by applicant

The applicants may be required to submit documents or certificates other than those listed above when necessary for screening.

(3) Screening Procedure

The School will examine the documents submitted by applicants for preliminary qualification screening. In the process of preliminary screening, it is possible that applicants may be requested to have interviews (oral examination) when necessary for screening.

(4) Notification of Results

Applicants will be notified of the results of the Preliminary Screening for Qualification before the application period.

4. Period for Reception of Application

October Admission	May 24 (Monday) – June 2 (Wednesday), 2021, 9:00 A.M. – 5:00 P.M. (Except Saturday & Sunday)
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April Admission	November 8 (Monday) – November 17 (Wednesday), 2021, 9:00 A.M. – 5:00 P.M. (Except Saturday, Sunday & Holiday)
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In the case of mailing, the documents must be sent by registered mail, and “Application for the Doctor’s Program of the Graduate School” must be written in red ink on the front of the envelope. They must reach the office no later than the appointed day above.

5. Application Procedures

Before applying, the applicants are required to contact a prospective academic supervisor and sufficiently understand the contents of the education and research curriculum.

The applicants who have undergone Preliminary Screening for Qualification do not have to submit the application materials they have already submitted.

(1) Application Materials Common for All Applicants

Application Materials	Notes
Application Form	Prescribed form Complete the Curriculum Vitae which includes the applicant's careers since graduating from high school, on the back side of Application Form.
Photo Identification Card /Examination Admission Card	Prescribed form Paste a photograph in the space provided on the card. The photograph should have been taken within three months prior to application and should be 4cm long by 3cm wide, clearly displaying a frontal, hatless view of the upper part of the body.
Statement of Application Purpose	Prescribed form or form equivalent to prescribed one
Academic Transcript	Transcript issued and sealed by the educational institute last attended Applicant who has completed the master's program of a graduate school must submit transcript issued by the graduate school as well as one issued by the undergraduate university attended. Not required for those who have completed or expect to complete the School of Medicine or the Master's Program of the Graduate School of Medicine, Fukushima Medical University
Certificate of (Expected) Graduation / Completion	Certificate of completion or expectation to complete the degree, issued and sealed by the educational institute last attended Not required for those who have completed or expect to complete the School of Medicine or the Master's Program of the Graduate School of Medicine, Fukushima Medical University
Application Fee	Transfer 30,000 yen to the designated account at the Japan Post Bank or post office and paste the Certificate of Payment stamped with the receipt date in the specified space on the Application Form. Post Office transfer fee is to be paid by the applicant.
Envelope for Delivery of Examination Admission Card	Affix a stamp/stamps for 374 yen, and write full name, address and postal code on a standard envelope for delivery of Examination Admission Card.

(2) Application Materials for Working Professionals

Working Professionals who have not been required to take Preliminary Screening for Qualification must submit the following application materials in addition to those listed in (1) above.

Application Materials	Notes
Statement of Application Purpose	Prescribed form or form equivalent to prescribed one
Employer's	Prescribed form completed by the applicant's superior or the director of

Permission to Take Examination	the institute or organization where the applicant is currently employed
Statement of Research Activities and Achievements	Prescribed form or form equivalent to prescribed one A statement clearly providing the details of the contents and results of the research conducted by applicant

(3) Application Materials for International Students

International students must submit the following application materials in addition to those listed in (1) above.

Application Materials	Notes
Certificate of Health	Prescribed form
Certificate of Foreign Resident (Alien) Registration	Issued by the local government office
Letter of Recommendation	Any format A letter of recommendation from the president of the university where the applicant graduated or from the applicant's faculty supervisor

Note: Applicants may be required to submit documents or certificates other than those listed above when necessary for screening.

6. Selection Procedure

The applicants will be selected on the basis of comprehensive evaluation of the results of essay and oral examination and the information given in the submitted application materials.

(1) Examination Subjects for general applicants and working professionals:

- (i) Essay Examination
- (ii) Oral Examination (Interview)

(2) Examination Subjects for International Students:

- (i) Essay Examination
- (ii) Oral Examination (Interview)
- (iii) Medical Checkup

Note: International students are permitted to write the essay in English.

7. Schedule of Examination for All Applicants

	Date	Subjects & Time
October Admission	June 12 (Sat), 2021	Essay Examination: 9:00 – 10:00 Oral Examination: 10:30–
April Admission	December 11 (Sat), 2021	

Detailed information of examination place and appointed time for assembling will be

provided with Examination Admission Card sent to applicants.

8. Announcement of Successful Applicants

October Admission	July 26 (Mon), 2021
April Admission	January 20 (Thu), 2022

The examinee numbers of successful applicants will be posted on the Building No.6 south outdoor bulletin board at 10:00 AM. Official notification of result will also be issued and mailed with admission documents and instructions for its procedure to successful applicants.

9. Admission Procedure

Successful applicants must send by mail the required documents and certificates to the office indicated in (2) below or submit them in person to the office.

(1) Period of Admission Procedure

October Admission	July 26 (Mon) – August 6 (Fri), 2021, 9:00 A.M. – 5:00 P.M. (Except Saturday & Sunday)
April Admission	January 20 (Thu) – February 2 (Wed), 2022, 9:00 A.M. – 5:00 P.M. (Except Saturday & Sunday)

- (i) In the case of mailing, the required documents and certificate of admission must be sent to the office indicated below by registered express mail and must reach there during the above period.
- (ii) If the applicant has not completed the admission procedure within the specified period, she or he will be considered to have declined admission.

(2) Office for Admission Procedure

Educational Affairs Section
Student Affairs Division
School of Medicine
Fukushima Medical University
1 Hikarigaoka, Fukushima-shi, Fukushima 960-1295, Japan
Tel: +81-24-547-1095 (direct line)

(3) Materials Required for Admission

- (i) Written Pledge (ii) Letter of Identity Guarantee (iii) Certificate of Residence
- (iv) Application for the Specialized Subjects (v) Student Record
- (vi) Photograph (two copies) (vii) Application for Automatic Account Transfer of Tuition Fee
- (viii) Documents related to System for an Extended Period of Study (ix) Pledge for Research
- (x) Acceptance Certificate of Enrollment Fee Payment

(4) Admission Fee and Tuition

- (i) Admission Fee: 282,000 yen (Admission Fee must be paid at time of admission procedure.)
- (ii) Annual Tuition: 535,800 yen (Annual Tuition must be paid after enrollment. The payment must be by bank account transfer and will be due in half-yearly installments by the end of April and October.)

Note: The amount of Admission Fee and Annual Tuition are subject to change. If the tuition is revised after enrollment, the revised amount will be applied from the time of the revision.

10. Other Information

- (1) Applicants must assemble in the examination room no later than an appointed time and follow the instructions given there.
- (2) Application materials submitted on applying and application fee once paid will not be returned, under any circumstances.
- (3) Admission can be canceled even after matriculation if any of application materials are falsified or fabricated.
- (4) Personal information provided in application documents and certificates are used only for admission selection procedure, admission procedure, study guidance after enrollment, and liaison work. The personal information is not used for any other purpose.
- (5) For Further Information and Inquiries

Entrance Examination Section
Student Affairs Division
Fukushima Medical University
1 Hikarigaoka, Fukushima-shi
Fukushima 960-1295 JAPAN
Tel +81-24-547-1093 Fax: +81-24-547-1989

Admission Guide

1. Aim and Mission

The aim of the Fukushima Medical University Graduate School PhD Program is to teach and research both theory and practice of science, to investigate thoroughly its principle, to provide new insights into scientific achievement, to contribute to the development of culture, and to foster talented men and women who will be the leaders in medical research.

Since 2004 four divisions of research, namely, Community Medicine and Aging Science, Functional and Regulatory Medical Sciences, Neurology, and Molecular Pathogenesis had been organized for education and research. In 2009 these divisions were integrated and reorganized as Graduate School of Medicine, PhD program.

In the Graduate School of Medicine, PhD program, a course of study allows students to study various medical fields widely as well as investigate in depth a specific field, so that the disposition and desire of the students can be maximally met and through the practice of advanced medicine in new fields the talent of students can be nurtured for the benefit of regional medicine.

2. Standard Duration of Study

Four Years

3. Course Structure and Outline

Refer to the Appended Table 1.

4. Division of Research and Research Topic

Refer to the Appended Table 2 for each division of research, its academic advisors and their research topics. (The contents in the Appended Table 2 is as of April in 2021. On applying for the entrance examination of the April admission in 2022, confirm the latest information available on the web site of Fukushima Medical University.)

5. Degree Conferment

In order to receive a degree of PhD, students are required to enroll in the program for four years or longer, complete the prescribed course of subjects, submit a doctoral dissertation based on their original research, and successfully pass a review of the dissertation and the final examination.

For the students who have achieved distinguished research results, however, the required years for completion can be three years or longer.

6. Scholarship Fund

Scholarship from the Japan Student Services Organization is available. If students are unable to receive the scholarship from this organization, they may be eligible for the scholarship provided by Fukushima Medical University.

7. Clinical Training and Scholastic Requirements

International students must get permission under the provisions of Article 3, Paragraph 1 of the Law concerning the Exceptional Cases of the Medical Practitioners' Act, Article 17, on the Advanced Clinical Training of Foreign Medical Practitioners, in order to practice medicine.

8. Tuition Exemption System

Graduate students who, for financial reasons, have severe difficulties in paying their tuition fees and have excellent academic records may be eligible for tuition exemption.

9. System for an Extended Period of Study

Students who, because of regular employment or for other reasons, are unable to complete the course work in the prescribed time, may apply for an extension, which the system will allow.

Table 1

Category	Subject	Outline	Credit	Classification
General Basic Subjects	Outline of Medical Research	<u>Required subjects in the Advanced Medical Researcher Course</u> A total of eight omnibus-style lectures will be given on basic procedures from research ethics and experimental planning to research proceedings and presentations, which are indispensable for conducting research.	1	Required
	Integrated Medical Humanities, Sciences & Technology	<u>Required subjects in the specialist researcher course</u> To address a variety of human issues throughout life, students in this course will learn about the relationship between community, economics, law and humans and medicine through omnibus-style lectures, by regarding human beings not only as physical beings but also as beings that include psychosocial factors.	1	Required
	Introduction to Research in Medical Science	This course is mainly aimed at students of the Advanced Medical Researcher Course. In the first half, students will take the basics of medical research by e-learning, and in the second half, they will learn and practice cutting-edge research principles and methods.	1	Elective Required
	Seminar & Practicum in Integrated Medical Humanities, Sciences & Technology	(1) Students understand the basics of "Integrated Medical Humanities, Sciences & Technology" necessary for conducting medical research (especially clinical research). (2) Students will understand the basics of research methods such as structuring and modeling questions, converting measurement concepts into variables, developing variable measurement methods, evaluating measurement methods, and improving the quality of comparisons.	1	Elective Required
Specialized Subjects	Doctorate Coursework	Students will take in-depth lectures on the main areas of their dissertations.	4	Required
	Doctorate Advanced Research & Practicum	This is an exercise related to the field of specialization, and students will understand the advanced theory of medicine through this exercise and practice lectures to acquire the contents of the specialized field. At the same time, students will learn the specific research methods necessary for dissertation writing through this exercise.	8	Required
Subjects for Further Research	Doctorate Seminar & Practicum	Students will learn about the content required for dissertation writing and future medical care and research in their specialized fields, from fields other than their specialized fields. In addition, students will practice from treatment planning to actual treatment in three oncologist training courses (equivalent to 6 credits) based on the "Cancer Specialist Medical Human Resources (Cancer Professional)" training plan ※.	10	Required
	Graduate School Seminar	This seminar is held to gain a wide range of cutting-edge knowledge in various fields, and aims to deepen understanding and interest in medicine in general.	2	Required
Special Research	Research Guidance	As a culmination of learning and research at the graduate school, students will be instructed to conduct research in their field of specialization, gain new knowledge, and compile it as a dissertation. As a result of this subject, the dissertation will be completed.	4	Required

Requirements for Graduation and Course Requirements

In order to receive a PhD degree, graduate students are required to enroll in the program for four years or longer, complete the specified course of subjects, submit a doctoral dissertation based on their original research, and successfully pass the review of the dissertation and the final examination.

Among General Basic Subjects, students in the Course for Researchers and students in the Course for Medical Practitioner Researchers are required to take “Outline of Medical Research” and “Integrated Medical Humanities, Sciences and Technology” respectively and must take one or more other general subjects, to earn two or more credits. The students must also acquire twelve credits of Specialized Subjects, ten credits of Subjects for Further Research (if four credits of General Basic Subjects have been taken, eight credits are sufficient) and four credits of Special Research.

Cancer Professional Training Plan (Tohoku Next-Generation Cancer Professional Training Plan)

This is a comprehensive educational program conducted through the cooperation of the university and communities to foster advanced cancer specialists who can respond various medical needs on cancer. The Course for Medical Practitioner Researchers at Fukushima Medical University Graduate School includes the Oncologist Training Course based on the Cancer Professional Training Plan.

The Oncologist Training Course consists of four sub-courses leading to certification of clinical oncologist: Next-generation Medical Oncologist, Pediatric Oncologist, Next-generation Surgical Oncologist, and Advanced Radiation Oncologist. Students are required to take Doctorate Coursework (Clinical Oncology: Internet School) and Doctorate Advanced Research & Practicum which are included practical trainings on medical oncology, surgical treatment, radiation therapy, hematopoietic cell transplantation, and palliative medicine.

○Course for Next-generation Medical Oncologist

This is a course conducting a training on medical oncology. You can also get a board certified medical oncologists of the Japanese Society of Medical Oncology (JSMO).

○Course for Pediatric Oncologist

This is a course for board certified Pediatrician, Pediatric Hematologist, and Oncologist of the Japanese Society of Pediatric Hematology/ Oncology. The training will be done at Fukushima Medical University Hospital according to the curriculum to prepare specialists.

○Course for Next-generation Surgical Oncologist

This is a course for board certified surgical oncology specialists, such as breast specialists of the Japanese Medical Specialty Board. The training will be done at Fukushima Medical University Hospital according to the curriculum to prepare specialists.

○Course for Advanced Radiation Oncologist

This is a course for board certified radiation oncologists of the Japanese Medical Specialty Board. The training will be conducted in accordance with “All Fukushima Practical Training Program” for board certified radiologist/ radiation oncologist at Fukushima Medical University Hospital and related hospitals.

Course Models

The graduates, no matter which course model they follow, are expected to be distinguished specialists or researchers actively involved in universities, and research and medical institutions.

Course Model (1): Students who aim to be a researcher in the field of Basic Medicine

	1st Year		2nd Year		3rd Year		4th Year		Total Number of Credits
	Subject	Credit	Subject	Credit	Subject	Credit	Subject	Credit	
General Basic Subjects	Outline of Medical Research	1							1
	Introduction to Research in Medical Science	1							1
Specialized Subjects	Doctorate Coursework		Doctorate Coursework		Doctorate Coursework		Doctorate Coursework	4	4
	Doctorate Advanced Research & Practicum		Doctorate Advanced Research & Practicum		Doctorate Advanced Research & Practicum		Doctorate Advanced Research & Practicum	8	8
Subjects for Further Research	Doctorate Seminar & Practicum	4	Doctorate Seminar & Practicum	2	Doctorate Seminar & Practicum	2	Doctorate Seminar & Practicum	2	10
					Graduate School Seminar	2			
Special Research	Research Guidance		Research Guidance		Research Guidance		Research Guidance	4	4

Course Model (2): Students who emphasize clinical research and aim to be a specialist or certified specialist

	1st Year		2nd Year		3rd Year		4th Year		Total Number of Credits
	Subject	Credit	Subject	Credit	Subject	Credit	Subject	Credit	
General Basic Subjects	Integrated Medical Humanities, Sciences & Technology	1							1
	Seminar & Practicum in Integrated Medical Humanities, Sciences & Technology	1							1
Specialized Subjects	Doctorate Coursework		Doctorate Coursework		Doctorate Coursework		Doctorate Coursework	4	4
	Doctorate Advanced Research & Practicum		Doctorate Advanced Research & Practicum		Doctorate Advanced Research & Practicum		Doctorate Advanced Research & Practicum	8	8
Subjects for Further Research	Doctorate Seminar & Practicum	4	Doctorate Seminar & Practicum	2	Doctorate Seminar & Practicum	2	Doctorate Seminar & Practicum	2	10
					Graduate School Seminar	2			
Special Research	Research Guidance	1	Research Guidance	1	Research Guidance	1	Research Guidance	1	4

Course Model (3): Students who aim to be a certified medical researcher

	1st Year		2nd Year		3rd Year		4th Year		Total Number of Credits
	Subject	Credit	Subject	Credit	Subject	Credit	Subject	Credit	
General Basic Subjects	Integrated Medical Humanities, Sciences & Technology	1							1
	Outline of Medical Research	1							1
Specialized Subjects	Doctorate Coursework		Doctorate Coursework		Doctorate Coursework		Doctorate Coursework	4	4
	Doctorate Advanced Research & Practicum		Doctorate Advanced Research & Practicum		Doctorate Advanced Research & Practicum		Doctorate Advanced Research & Practicum	8	8
Subjects for Further Research	Doctorate Seminar & Practicum	4	Doctorate Seminar & Practicum	2	Doctorate Seminar & Practicum	2	Doctorate Seminar & Practicum	2	10
					Graduate School Seminar	2			
Special Research	Research Guidance		Research Guidance		Research Guidance		Research Guidance	4	4

Course Model (4): Students who take the oncologist training course and aim to be an oncology specialist

	1st Year		2nd Year		3rd Year		4th Year		Total Number of Credits
	Subject	Credit	Subject	Credit	Subject	Credit	Subject	Credit	
General Basic Subjects	Integrated Medical Humanities, Sciences and Technology	1							1
	Outline of Medical Research	1							1
Specialized Subjects	Doctorate Coursework (Clinical Oncology)		Doctorate Coursework (Clinical Oncology)		Doctorate Coursework (Clinical Oncology)		Doctorate Coursework (Clinical Oncology)	4	4
	Doctorate Advanced Research & Practicum (Clinical Oncology) is taught by using "internet school."								
	Doctorate Advanced Research & Practicum (Clinical Oncology)		Doctorate Advanced Research & Practicum (Clinical Oncology)		Doctorate Advanced Research & Practicum (Clinical Oncology)		Doctorate Advanced Research & Practicum (Clinical Oncology)	8	8
Doctorate Advanced Research & Practicum requires practice of chemotherapy, surgical treatment, radiation therapy and palliative medicine.									
Subjects for Further Research	Doctorate Seminar & Practicum	4	Doctorate Seminar & Practicum	2	Doctorate Seminar & Practicum	2	Doctorate Seminar & Practicum	2	10
					Graduate School Seminar	2			
Special Research	Research Guidance		Research Guidance		Research Guidance		Research Guidance	4	4

Table2

Division of Research	Department	Position	Name	Research Topics
Developmental Neurobiology	Department of Neuroanatomy and Embryology	Professor	YAGINUMA Hiroyuki	1) Programmed cell death unique to the cervical spinal cord of the vertebrate during early developmental stages 2) Mechanisms of layer formation by cell migration in brain development 3) Regulatory mechanisms for neurotrophic factor receptor expression 4) Analysis for the expression pattern of developmental regulatory molecules in the CNS 5) Roles of intracellular protein trafficking in axonal tract formation 6) Study of developmental process and function in cerebellar compartmentalization 7) Study of brain function with optogenetic technique
Functional Histology	Department of Anatomy and Histology	Professor	WAGURI Satoshi	1 Autophagy-lysosomal degradation system in cells, tissues, and diseases 2 Intracellular membrane trafficking in cells, tissues, and diseases 3 Cell proliferation regulated by intracellular degradation systems
Biomolecular function	Department of Cellular and Integrative Physiology	Professor	HAZAMA Akihiro	Function of Ion Channels and Transporters
Neurophysiology	Department of Systems Neuroscience	Professor	EIFUKU Satoshi	1) Neurophysiological, cognitive psychological and functional neuroimaging studies on the neural bases for social recognition (face recognition, recognition of the personal relationship etc.) 2) Neurophysiological mechanisms of sleep and wakefulness
Neurophysiology	Department of Neurophysiology	Associate Professor	JODO Eiichi	1) Neurophysiological studies on the pathogenesis of psychiatric disorders with animal models of disease (especially focused on schizophrenia) 2) Pathophysiological studies of psychiatric disorders in human patients
Molecular Biomarker Regulation	Department of Biochemistry	Professor	NISHITA Michiru	1. Mechanism underlying the acquisition of invasive and metastatic properties by cancer cells 2. Mechanism of Wnt signaling that drives cancer progression 3. Glycan structural analysis of glycoproteins using multiple-stage mass spectrometry
Molecular Immunology	Department of Immunology	Professor	SEKINE Hideharu	1 The activation mechanism of complement factor MASPs 2 The role of complement factor MASPs in the development of lupus nephritis 3 Development of novel therapeutic agents targeting the complement pathway
Molecular Pharmacology	Department of Pharmacology	Professor	SHIMOMURA Kenju	1 Electrophysiological studies on KATP channels on brain function and insulin secretion. 2 Investigation of food intake regulation mechanism in brain. 3 Basic and clinical study on pharma-food interaction

Division of Research	Department	Position	Name	Research Topics
Infectious Diseases	Department of Microbiology	Professor	SUZUTANI Tatsuo	<p>1 Study of the molecular pathogenesis of herpes virus infections with an emphasis on cytomegalovirus infections.</p> <p>2 Study of the effects of microbial flora on health and disease.</p> <p>3 Development of functional foods possessing antimicrobial, antioxidant or immune-stimulating functions.</p>
Molecular and cellular pathology	Department of Basic Pathology	Professor	CHIBA Hideki	<p>1.Regulation of pleiotropic cellular function by the cell adhesion – nuclear receptor signaling pathway</p> <p>2.A novel molecular basis for regulating the nuclear activity promotes cancer progression</p> <p>3.Identification of a diagnostic marker for cancer focusing focusing on cell-cell adhesion molecules</p> <p>4.Development of a novel cancer treatment targeted to abnormal cell adhesion signal</p> <p>5.Tissue repair using a niche signal for stem cells</p> <p>6.Functional specificity and redundancy of tight-junction molecules</p> <p>7.Identification of a novel diagnostic marker and therapeutic target for nephrotic syndrome</p> <p>8.Regulation of blood-brain barrier by neurovascular units and brain diseases</p> <p>9.Supersensitive live imaging of biological barrier using frog gastrula epidermal cells</p> <p>10.Identification of an universal enhancer for driving epithelial differentiation from stem cells</p>
Hygiene and Preventive Medicine	Department of Hygiene and Preventive Medicine	Professor	FUKUSHIMA Tetsuhito	<p>1 Preventive medicine against lifestyle related diseases</p> <p>2 Clinical epidemiology in hospitals</p> <p>3 Health (medical) economics, community health planning, health policy research</p> <p>4 Occupational medicine research on laborers' safety and health</p> <p>5 Health education, behavioral sciences</p> <p>6 QOL of elderly people with dementia</p> <p>7 Epidemiology and preventive medicine research on cardiovascular diseases and diabetes</p> <p>8 Dietetic studies for lifestyle-related disease prevention</p> <p>9 Research on search of the biomarkers of latent sleep disorders</p>

Division of Research	Department	Position	Name	Research Topics
Clinical epidemiology	Department of Clinical Epidemiology	Associate Professor	KURITA Noriaki	<p>Graduate students are trained to become the next generation leaders who can disseminate high quality clinical research to the world.</p> <p>In fact, we have successfully got graduate students to present their research results in newspapers and other media.</p> <p>In this way, graduate students and we will conduct research on local community members to help extend healthy longevity, as well as patient-based research in hospitals.</p> <p>Through this we will create evidence on treatment and prevention and evidence on the diagnostic utility.</p> <p>If needed, we will supervise graduate students in cooperation with other departments that endorse the development of human resources within this department (e.g., CiRC2LE [fuji-future.jp], Shirakawa STAR [shirakawa-ac.jp], etc.).</p> <p>For more information, please refer to the following websites: DiRECT (https://direct.fmu.ac.jp/) and Department of Clinical Epidemiology (https://noriaki-kurita.jp/).</p>
Public Health and Epidemiology	Department of Public Health	Professor	YASUMURA Seiji	<p>We instruct epidemiological research on various topics using patients and community data: lifestyle related diseases; falls, home-bound and long-term care among elderly; end-of-life care, mental health, suicide and disaster management.</p>
Social medicine (forensic medicine)	Department of Legal Medicine	Professor	KURODA Naohito	<ol style="list-style-type: none"> 1.Histopathological studies on conducting system of the heart in juvenile sudden deaths 2.Histopathological studies on developing mechanism of rotational brain injuries 3.Development of postmortem examination techniques specific to corpses polluted by radioactive substances 4.Radiological studies on postmortem effects on computed tomography of cadavers 5.Histological and epidemiological studies on thyroid latent carcinomas in medico-legal autopsy cases
Radiation life sciences	Department of Radiation and Biology	Professor	SAKAI Akira	<ol style="list-style-type: none"> 1. Establishment of biodosimetry method for chronic low-dose ionizing radiation exposure. 2. Elucidation of the mechanism of occurrence of chromosomal translocation. 3. Elucidation of abnormal B cell as a tumor origin in multiple myeloma using induced pluripotent stem (iPS) cell derived from normal B cell (BiPSC).
	Department of Epidemiology	Professor	OHIRA Tetsuya	

Division of Research	Department	Position	Name	Research Topics
Environmental Health	Department of Radiation Physics and Chemistry	Professor	ISHIKAWA Tetsuo	<ol style="list-style-type: none"> 1. Internal and external exposure due to natural radiation 2. Environmental dynamics of radioactive materials released from the Fukushima accident and their effects on dose to humans 3. Mechanisms of internal exposure due to radon and thoron
Health risk communication	Risk Assessment	Professor	TAMAKI Tomoaki	<ul style="list-style-type: none"> • Qualitative analysis of risk perception relating to health and radiation and analysis of factors which influence risk perception • Research on the effective method of risk communication
Department of Health Risk Communication	Risk Assessment	Associate Professor	MURAKAMI Michio	<ol style="list-style-type: none"> 1. Multiple risk assessment and cost effectiveness analysis of countermeasures 2. Evaluation of effects of countermeasures on wellbeing 3. Analysis of relationships among risk information provision, risk perception, risk acceptance, trust, and risk communication
Cardiology	Department of Cardiovascular Medicine	Professor	TAKEISHI Yasuchika	<ol style="list-style-type: none"> 1. Development of a new strategy for treatment of heart failure 2. Molecular mechanisms of aging and cardiovascular function 3. Pathogenesis and treatment of ischemic heart diseases 4. Cardiovascular function of metabolic syndrome 5. Oxidative stress and regulation of coronary flow 6. Sleep disordered breathing and cardiovascular diseases 7. Cardiovascular imaging 8. Cardiomyocyte generation from iPS cells of familial cardiomyopathy 9. Clonal hematopoiesis and cardiovascular diseases 10. Oncology and Cardiovascular Diseases 11. Mechanisms of maintaining homeostasis in the cardiomyocyte 12. Molecular mechanisms of pulmonary hypertension 13. Development of more effective and safer catheter ablation 14. Management of heart diseases by implantable devices
Cardiovascular Biology and Medicine	Department of Cardiovascular Medicine	Professor	ISHIDA Takahumi	<ul style="list-style-type: none"> • Role of DNA damage in the pathogenesis of cardiovascular disease • Role of DNA damage in the pathogenesis of life style diseases • Molecular mechanisms of cardiovascular toxicity of anticancer therapies • Molecular mechanisms of cardiovascular aging

Division of Research	Department	Position	Name	Research Topics
Hematology	Department of Hematology	Professor	IKEZOE Takayuki	1 Identification of novel tumor markers in hematological malignancies 2 Elucidation of pathogenesis of transplant-associated complications and development of novel treatment strategy 3 Elucidation of drug-resistant mechanisms in hematological malignancies 4 Identification of novel functions of thrombomodulin
Gastroenterology	Department of Gastroenterology	Professor	OHIRA Hiromasa	1. Analysis of pathological and host immune mechanism of autoimmune hepatic diseases 2. New therapeutic strategy and pathological analysis of gastrointestinal cancer 3. New therapeutic strategy and pathological analysis of chronic pancreatitis 4. New endoscopic therapy of gastrointestinal cancer 5. Analysis of pathological mechanism and new therapeutic strategy of inflammatory bowel diseases
Rheumatology	Department of Rheumatology	Professor	MIGITA Kiyoshi	Pathogenesis of systemic lupus erythematosus and other rheumatic diseases: roles of autoantibodies and complement. Pathogenesis of rheumatoid arthritis: role of osteopontin. Pathogenesis of IgG4 related disease. Genetic and immunological features of autoinflammatory disease.
	Department of Diabetes, Endocrinology and Metabolism	Professor	KAZAMA Junichiro	
Metabolic and Homeostatic Regulatory Medicine	Department of Nephrology, Hypertension, Diabetology, Endocrinology and Metabolism	Professor	SHIMABUKURO Mitsuki	1. Molecular mechanisms of type 1 and type 2 diabetes mellitus 2. Molecular mechanisms of diabetic micro- and macro-vascular complications 3. A comprehensive approach study to diabetic patient care on complications and long-term prognosis 4. Construction of concept for ectopic fat deposition and sarcopenia connections 5. Metabolic and cardio-vascular complications and prognosis in endocrine disorders 6. Disaster, stress and life-style related disease 7. Eating behavior and life-style related disease 8. Gut microbes and life-style related disease
Clinical Neurology and Neurophysiology	Department of Neurology		KANAI Kazuaki	1 .Tactics for neurological patients: how to see neurological patients using clinical neurological examination 2 .Pathological mechanisms underlying neuro-immunological and cerebrovascular disorders 3 .Physiological analyses of ion channels in neurological disorders 4 . Neuroplasticity induction treatments by transcranial magnetic stimulation (TMS) for various neurological disorders 5 Neurophysiological approach to peripheral neuropathy and neuro-muscular disorders

Division of Research	Department	Position	Name	Research Topics
Pulmonary Pathophysiology	Department of Pulmonary Medicine	Professor	SHIBATA Yoko	<ul style="list-style-type: none"> 1 Analysis of gene-environmental interaction during the onset of pulmonary diseases 2 Development of biomarker for pulmonary diseases 3 Study about the structure-function relationship in pulmonary diseases 4 Development of non-invasive examinations that can diagnose pulmonary disease using respiratory sounds, exhaled gas, or induced sputum 5 Development of new procedures that can diagnose pulmonary diseases using bronchial endoscopy 6 Development of new therapeutic intervention using bronchial endoscopy against pulmonary diseases 7 Construction and practice of new therapeutic strategies for respiratory diseases 8 Analyses of pathophysiology of pulmonary diseases using novel diagnostic imaging system
Surgical Oncology for Thoracic Malignancy	Department of Chest Surgery	Professor	SUZUKI Hiroyuki	<ul style="list-style-type: none"> 1. Basic and Translational Research for Carcinogenesis and Anti-Cancer treatment 2. Basic and Translational Research for Mediastinal tumor 3. Tumor Immunology and Immunotherapy 4. Development of Novel Imaging Analysis for Cancer (including Artificial Intelligence technology) 5. Biomarker Study for Anti-Cancer treatment
Gastrointestinal Surgery	Department of Organ Regulatory Surgery	Professor	KOHNO Koji	<ul style="list-style-type: none"> 1. Basic and Clinical Research for carcinogenesis and cancer progression in gastrointestinal tract cancer. 2. Scientific evaluation of less invasive surgery for gastrointestinal tract cancer. 3. Development of cancer immunotherapy for gastrointestinal tract cancer.
Surgical Oncology and Regenerative Surgery	Department of Hepato-Biliary-Pancreatic and Transplant Surgery	Professor	MARUBASHI Shigeru	<ul style="list-style-type: none"> 1 Basic research for cancer and oncology in Gastroenterology 2 Regenerative surgery. Liver regeneration and islet composite sheet. 3 Organ transplantation and Tolerance 4 Multidisciplinary treatment for advanced GE malignancies. 5 Intraoperative navigation system using AI and 3D images. 6 Diagnosis and prediction of prognosis using Omics technology.
Surgical oncology	Department of Organ Regulatory Surgery	Professor	OHTAKE Tohru	<ul style="list-style-type: none"> 1. Development of the appropriate breast-conservative surgery in consideration of an optimal excision by the latest image diagnosis system 2. Development of the optimal intrinsic subtype marker for breast cancer by comprehensive gene expression analysis and clinical application 3. Development of the optimal predictive marker for breast cancer drug therapy by comprehensive gene expression analysis and clinical application 4. Clinical significance and functional analysis of novel tumor markers in breast cancer

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Reconstruction of Cardiovascular System	Department of Cardiovascular Surgery	Professor	YOKOYAMA Hitoshi	1 Improvement of off-pump cardiac surgery 2 Development and evaluation of angiogenetic therapy 3 Aortic repair using stent graft
Neurosurgery	Department of Neurosurgery	Professor	FUJII Masazumi	1. Researches on development of therapeutic guidelines and new therapeutic methods for neurofibromatosis type 2 2. Development of a next generation image-guided neurosurgery 3. Development of new biomarkers for brain tumors 4. Researches on plasticity of human brain function and networks.
Restorative medicine of neuro-musculoskeletal system	Department of Orthopaedic Surgery	Professor	KONNO Shinichi	Study of mechanisms of pain associated with orthopedic disorders
Functional and disability	Department of Orthopaedic Surgery	Professor	KONNO Shinichi	The change of circulatory dynamics with the aging and the occurrence mechanism of limbs and truncal dys-function
Plastic Surgery	Department of Plastic and Reconstructive Surgery	Professor	OYAMA Akihiko	Molecular biological research in Wound healing
Obstetrics and Gynecology	Department of Obstetrics and Gynecology	Professor	FUJIMORI Keiya	1 Mechanism and prevention for preterm labor 2 Physiological study for non-reassuring fetal status 3 Basic research for metastatic mechanism, chemotherapy and gene therapy in gynecologic cancer. 4 Therapeutic basic study for In Vivo Fertilization - Embryo Transfer and Intracytoplasmic Sperm Injection 5 Effect of metformin on endocrine milieu, endometrial expression of androgen-regulated molecules and endometrial receptivity in patients with polycystic ovary syndrome
Pediatric Health	Department of Pediatrics	Professor	HOSOYA Mitsuaki	1 Influence of chemical materials on the growth and development in childhood. 2 Inflammatory diseases and organ failure.
Pediatrics	Department of Pediatrics	Professor	HOSOYA Mitsuaki	1 Diagnosis, pathophysiology and treatment of infection related diseases. 2 Attachment failure between mother and child and psychomotor development disorder
Ophthalmology and Visual Science	Department of Ophthalmology	Professor	SEKIRYU Tetsuju	Investigation and New Treatment for Vitreoretinal disease
Dermatology	Department of Dermatology	Professor	YAMAMOTO Toshiyuki	Research on the pathogenesis of fibrosis and scleroderma

Division of Research	Department	Position	Name	Research Topics
Urology	Department of Urology	Professor	KOJIMA Yoshiyuki	<ol style="list-style-type: none"> 1 Growth mechanism of benign prostatic hyperplasia (immune reaction and intestinal flora) 2 The effect of chronic ischemia on lower urinary tract function. 3 The mechanism of vesical adaptation response to diuresis. 4 New generation AR target drug resistance of prostate cancer 5 New development in molecular targeted agents of drug-resistant renal cell carcinoma 6 The possibility of hypospermato genesis in patients with azoospermia due to human cytomegalovirus infection 7 Robot assisted surgery (development of surgical technique to prevent urinary incontinence after radical prostatectomy) 8 Lower urinary tract function before and after surgery in female pelvic organ prolapse patients
Otolaryngology	Department of Otolaryngology	Professor	MURONO Shigeyuki	<ol style="list-style-type: none"> 1.Carcinogenesis, mechanism of metastasis and novel therapeutic modality in virus-associated head and neck cancer 2.Immune reaction in sentinel node of head and neck cancer 3.Novel diagnostic modality by molecular biological approach using tiny samples of head and neck cancer 4.Surgical procedure and functional preservation in head and neck cancer 5.Cytokine network in eosinophilic chronic rhinosinusitis 6.Pathophysiology and functional surgery of vocal and/or swallowing disorder
Neuropsychiatry	Department of Neuropsychiatry	Professor	YABE Hirooki	<ol style="list-style-type: none"> 1. Cognitive Physiological Study of Neuropsychiatric Diseases (Event-Related Brain Potential (ERP) research, Near-infrared Spectroscopy (NIRS) research, Transcranial Magnetic Stimulation (TMS) research, and Experimental Psychology research, etc.) 2. Psychopharmacological Study of Neuropsychiatric Diseases (Monoamine research and Pharmacoelectroencephalography (Pharmacoe-EEG) research, etc.) 3. Histopathological research of Neuropsychiatric Diseases (Postmortem Brain research and DNA research, etc.) 4. Psychosocial research of Neuropsychiatric Diseases (Clinical Psychology research and Mental Health research, etc.)
Radiology and Nuclear Medicine	Department of Radiology and Nuclear Medicine	Professor	ITO Hiroshi	<ol style="list-style-type: none"> 1. Neuroradiology using CT and MRI 2. Interventional Radiology 3.Cerebral circulation and metabolism 4. Diagnostic radiology using PET/MRI 5. Nuclear Medicine Imaging

Division of Research	Department	Position	Name	Research Topics
Anesthesiology	Department of anesthesiology	Professor	INOUE Satoki	1.The effects of social isolation on cerebral ischemia 2.Social isolation-induced preconditioning 3.The effect of prehabilitation on cerebral ischemic damage during social isolation 4.Epidemiological investigation about anesthesia-related outcomes 5.The effects of remimazolam on postoperative delirium
Division of perioperative medicine and bioregulation	Department of anesthesiology	Professor	KUROSAWA Shin	1 Analysis of the mechanisms of T cell apoptosis induced by volatile anesthetics. 2 Investigation of immunosuppression caused by general anesthetics. 3 Surveillance of clinical biomarkers in patients with infectious systemic inflammatory response syndrome or sepsis. 4 The effects of low-dose glucocorticoid on immune cells and immune function. 5 The effects and mechanisms of general anesthetics on anticancer chemotherapeutic agents-induced immunosuppression. 6.Immunological analyses of the effects on single low-dose glucocorticoid administration on the improvement of prognosis after cancer surgery.
Emergency and Critical Care Medicine	Department of Emergency and Critical Care Medicine	Professor	ISEKI Ken	1 The role of Glia 2 Cell biology and Pathophysiology of the diacylglycerol kinase 3 Animal model of stress response 4 Animal model for toxicological studies 5 Animal model for infectious disease 6 The epidemiological study in Acute Medicine 7 The simulation study of cardiopulmonary resuscitation 8 The study of intensive care apparatus
pathology	Department of Diagnostic Pathology	Professor	HASHIMOTO Yuko	Comprehensive diagnostic method for malignant lymphoma using pathology, immunology & molecular biology ○ Research on factors related to onset and prognosis of lymphoma in particular ○ Molecular-based method using formalin fixed paraffin embedded (FFPE) samples Quality control of companion diagnosis for molecular target therapy
	Department of Laboratory Medicine	Professor	SHIMURA Hiroki	1) Clinical research for sonographic diagnosis of thyroid diseases 2) Epidemiological study of thyroid diseases in children and adolescents 3) Development of novel clinical tests for thyroid diseases 4) Research on clinical microbiological examination

Division of Research	Department	Position	Name	Research Topics
Infection Control and Laboratory Medicine	Department of Infection Control and Laboratory Medicine	Professor	KANEMITSU Keiji	1 Development of novel molecular diagnostic method for infectious diseases 2 Epidemiologic study of healthcare associated infection 3 Development of novel sterilization method 4 Development of detection method for autoantibodies using proteomics 5 Study of interferences in immunoassays 6 Study of various problems in ELISA
Transplantation Immunology	Department of Blood Transfusion and Transplantation Immunology	Professor	IKEDA Kazuhiko	○Assessment and regulation of allogeneic immune response ○Hematopoietic stem cell biology ○Reconstitution of hematopoiesis after transplantation of normal and neoplastic stem cells ○Development of laboratory/genetic tests for transplantation ○Development and use of cellular therapy
	Department of Blood Transfusion and Transplantation Immunology	Professor	Nollet Kenneth Eric	1 International Medical Communication and Education 2 Emergency Preparedness and Disaster Response 3 Global Transfusion Standards and Ethics
Community and Family Medicine	Department of Community and Family Medicine	Professor	KASSAI Ryuki	1. Essential clinical competencies 2. Expertise to address wide varieties of health problems 3. Core competencies to define family doctors 4. Education and research in family medicine 5. Health economics, health policy, and health management 6. Primary health care
Thyroid and Endocrinology	Department of Thyroid and Endocrinology	Professor	SUZUKI Shinichi	1. Explication of mechanism of carcinogenesis of pediatric thyroid cancer 2. Development of new therapeutic method for anaplastic thyroid cancer 3. Establishment of human iPS cell specialized to thyroid related familial tumor 4. Establishment of a disease model of thyroid related familial tumor 5. Explication of the mechanism of molecular biology to establish preoperative diagnosis of follicular thyroid cancer 6. Study of proliferative mechanism of thyroid cancer 7. Development of treatment for the endocrine tumor, like as multiple endocrine neoplasia (MEN) 8. Explication of methylation mechanism for endocrine tumors 9. Establishment of therapeutic method for endocrine tumors using by genome editing
Radiation Oncology	Department of Radiation Oncology	Professor	SUZUKI Yoshiyuki	Radiation-induced anti-tumor immunity and its modification

Division of Research	Department	Position	Name	Research Topics
Oncology Specialist Course	Clinical Oncology Center (Department of Medical Oncology)	Professor	SAJI Shigehira	Learning the multimodality treatment strategy in each organ specific cancer patients. 1. Research for improvement of efficacy and safety of cancer treatment with chemotherapy, surgery and radiation therapy. 2. Research for improvement of psychological and social issue in cancer treatment. 3. Learning the methodology of clinical study and clinical research for cancer patients.
Medical Oncology Course	Department of Medical Oncology	Professor	Saji Shigehira	1. Research about response predictive factor in cancer drug treatment. 2. Research of cancer morbidity in Fukushima. 3. Research for reducing immune related adverse events.
Physical Medicine and Rehabilitation	Department of Rehabilitation Medicine	Professor	OI Naoyuki	1. Orthopedic rehabilitation for aged person 2. Sports activities for the disabled 3. 3D-motion analysis of daily activities 4. FDG-PET imaging of muscular activity 5. Motion analysis of sports activities
Medical Nanochemistry	Department of Natural Science (Chemistry)	Professor	TANABE Makoto	Research for medical nanomaterials based on the unique properties of ultrasmall nanoparticles.
Molecular Biology	Department of Natural Science (Bology)	Professor	MATSUOKA Arika	1. Molecular mechanism of autoxidation for human hemoglobin 2. Crystallographic analysis of hemoprotein 3. Analysis of genome rearrangement in ciliates
Solid State Physics	Department of Natural Science (Physics)	Professor	HIRAKI Ko-ichi	Microscopic study of the electronic dynamics in the organic materials by nuclear magnetic resonance techniques
Cell Science	Department of Cell Science	Professor	WADA Ikuo	1 Molecular basis for the quality control mechanisms of proteins using advanced imaging techniques Elucidation of molecular mechanisms for gamete fusion 2 Molecular mechanisms of mammalian fertilization 3 Dynamic regulation of membrane traffic 4 Development of biomedical tools for regenerative medicine
Molecular Neurobiology	Department of Molecular Genetics	Professor	KOBAYASHI Kazuto	1. Neural mechanism underlying behavioral control through cortico-basal ganglia-thalamic network. 2. Neural circuit mechanism underlying learning and motivational behavior 3. Neural circuit mechanism that mediates functional recovery from brain injury. 4. Development of animal models for neurological and neuropsychiatric diseases.
Experimental animal model for human disease	Laboratory Animal Center	Professor	SEKIGUCHI Miho	Study design and methods for in vivo studies using laboratory animal models for human diseases

Division of Research	Department	Position	Name	Research Topics
Oral histology	Dentistry and Oral Surgery	Associate Professor	HASEGAWA Hiroshi	1 Basic and clinical study of intra-arterial chemotherapy for oral cancer 2 Maxillofacial growth in cleft lip and palate patients 3 Improvement of mastication by dental implants
Gastrointestinal endoscopy	Department of Endoscopy	Associate Professor	HIKICHI Takuto	1. Improvement and development of endoscopic diagnostic and treatment methods for early gastrointestinal cancer. 2. Development of new screening system for gastric cancer eradication in Fukushima Prefecture. 3. Improvement and development of diagnostic and treatment methods utilizing endoscopic ultrasonography (EUS) and EUS-guided injection for gastrointestinal tumors and pancreatic tumors. 4. Elucidation of the pathogenesis of gastrointestinal varices and development of endoscopic treatment for them. 5. Development of new endoscopic treatment with the combination of laparoscopic surgery for gastrointestinal cancer and submucosal tumor. 6. Clarification of the carcinogenic mechanism of gastric cancer. 7. Clarification of the influence on the gastric peristalsis after endoscopic treatment or in various diseases.
Pediatric Surgery	Pediatric Surgery	Professor	TANAKA Hideaki	<ul style="list-style-type: none"> • Stem cell therapy for pediatric intestinal diseases • Development of the intraoperative navigation system for pediatric solid abdominal and thoracic malignant neoplasms
International Community Health	Integrated Center for Science and Humanities	Professor	GOTO Aya	<p>Among six building blocks of the health system (service delivery, workforce, information, medical products, financing, leadership, and governance), we focus on the first three blocks. Our work “imports” and “exports” model health programs between Asian and Western regions by applying both quantitative and qualitative research methods in order to respond to complexities of community health.</p> <p>※ http://www.fmu.ac.jp/univ/en/nursing/program/ebm.html</p>
		Professor	YOKOYAMA Hiroyuki	
Development and Environmental Medicine		Professor	NISHIGORI Hidekazu	<p>Prenatal drug supplement use and development of offspring</p> <p>Parents perinatal mental health and development of offspring</p>
Disease Biochemistry	Department of Clinical Laboratory Sciences, School of Health Sciences	Professor	KITAZUME Shinobu	<p>Study of Alzheimer model mice</p> <p>Basic study for diagnosis and treatment of glioblastoma (Sakaemachi Campus)</p>

Division of Research	Department	Position	Name	Research Topics
	Advanced Critical Research Center	Professor	ORIUCHI Noboru	<ol style="list-style-type: none"> 1. Development of targeted radionuclide therapy 2. Dosimetry-based efficacy and safety assessment for α and β particle therapy 3. Development of theranostics using PET/CT and PET/MRI for targeted radionuclide therapy 4. Quantitative analysis of PET/MRI
Pathogenesis and epidemiology of hematological malignancies	Department of Hematology	Professor	OHTA Masatsugu	<ol style="list-style-type: none"> 1. Research on clarification of image diagnosis by MRI and PETCT in management of hematological malignancies 2. Study of diagnostic procedures and biological characteristics of myelodysplastic syndrome Aizu area 3. Research on malignant lymphomas in Aizu area characterized by the treatment outcome and prognosis 4. Epidemiological study on characteristics of hematological malignancies in Aizu district
Hematological Oncology	Department of Hematology	Professor	OHTA Masatsugu TSUNODA Saburo	<p>Analysis of Femoral Bone Marrow MRI for the patients with hematopoietic disease</p> <p>MTX-HOPE and MTX-RECOP therapy for the patients with relapse or refractory malignant lymphoma</p>
Dementia Research	Department of Neuropsychiatry	Professor	KAWAKATSU Shinobu	<ol style="list-style-type: none"> 1 Neuropsychology and brain imaging in elderly demented patients with tauopathy and frontotemporal lobar degeneration 2 Clinicopathological and genetic study in early onset Alzheimer's disease and frontotemporal lobar degeneration 3. Near-Infrared spectroscopy study of depression and apathy in demented patients 4. Early detection and predicting prognosis for delirium in elderly patients using 2 channel portable electroencephalography.
Coloproctology	Department of Coloproctology	Professor	TOGASHI Kazutomo	<ol style="list-style-type: none"> 1. Development of computer-aided diagnosis system using artificial intelligence (collaborate study with University of Aizu) 2. Elucidation of serrated pathway in colorectal carcinogenesis (international collaborate study) 3. Clinical outcome of colorectal endoscopic submucosal dissection 4. Relationship between colorectal diseases and colon length measured by CT colonography. 5. Relapse-free survival after treatment for pT1 stage colorectal cancer (multi-center study) 6. Endoscopic diagnosis of pT1 stage colorectal cancer using artificial intelligence (multi-center study collaborated with 10 domestic hospitals, organized by Aizu Medical Center)

Division of Research	Department	Position	Name	Research Topics
Therapeutics of the gastroenterological surgery	Department of Surgery	Professor	SAITO Takuro	<ol style="list-style-type: none"> 1. Development of therapeutics of cancer of the upper gastrointestinal tract and hepatobiliary pancreatic surgery. 2. Development of therapeutics of inguinal hernia. 3. Development of educational strategy of surgical techniques. 4. Patient safety in the field of the gastroenterological surgery
	Department of Orthopaedic and Spinal Surgery	Professor	SHIRADO Osamu	<ol style="list-style-type: none"> 1. Biomechanical study for developing a novel spinal instrumentation 2. Comprehensive study on adult spinal deformity in terms of diagnosis, treatment, and prevention 3. Development of a novel therapeutic exercise program for the patients with chronic low-back pain 4. Pathophysiological study on natural absorption mechanism in lumbar disc herniation 5. Kinesiological study on the patients with various spinal disorders
Upper respiratory tract surgical medicine	Department of Otorhinolaryngology	Professor	OGAWA Hiroshi	<ol style="list-style-type: none"> 1. Clinical research about the surgery of hearing improvement 2. Clinical research on anatomical structure of nasal cavity 3. Basic and clinical research on middle ear and inner ear 4. Basic and clinical research on allergic rhinitis
Gastrointestinal Diagnostic Imaging	Department of Clinical medicine department	Professor	UTANO Kenichi	Diagnostic performance of CT colonography for the colorectal neoplasms