

## Major Study Themes of Faculty

(As of December 2021)

Department / Centre	Division / Unit	Title	Name	Major Study Themes
Department of Fundamental Biosciences	Division of Physics	Professor	MERA Yutaka	1. Study on nanomaterials, nanostructures and surfaces 2. Development of nano-spectroscopy 3. Medical application of nanotechnology
		Associate Professor	NARUSE Nobuyasu	1. Research for optical properties of nano-,bio-materials 2. Research for material science using diffraction, microscopy, and spectroscopy 3. Physics research contributing to environmental science, agriculture, disaster prevention, and medical science 4. Research for science education
	Division of Chemistry	Professor	FURUSHO Yoshio	1. Development of medical materials based on supramolecular chemistry 2. Construction of soft materials utilizing formation of organic salt bridges driven by hydrogen bonding 3. Construction of molecular assembly through hierarchical organization of biomolecules
	Division of Biology	Professor	HIRATA Takako	1. Molecular basis of immune cell trafficking 2. Control of lymphocyte migration to the skin and mucosa 3. Immune regulation by cytoskeleton-associated proteins
	Division of Mathematics	Associate Professor	KAWAKITA Motoko	1. Algebraic curves with many rational points
Department of Culture and Medicine	Division of Philosophy	Professor	MUROJI Yoshihito	1. Buddha's teachings and his life 2. Philosophy of mahāyāna buddhism 3. Bioethics and medical ethics 4. Asian culture and religions
	Division of Psychology	Associate Professor	KOJIMA Takatsugu	1. Spatial cognition and language understanding 2. Affective information processing 3. Non-verbal cognition
	Division of English	Professor	KATO Yutaka	1. International comparative research on bioethics 2. Research on medical and nursing English education
	Division of Cultural Anthropology	Professor	KANESHIGE Tsutomu	1. Anthropological studies on ethnic minorities of P.R.China 2. Anthropological studies on Fengshui 3. Anthropological studies on merit and merit-making
Department of Anatomy	Division of Anatomy and Cell Biology	Professor	UDAGAWA Jun	1. Analysis of the function of the brain phospholipid to the behavior 2. Elucidation of gene functions related to prenatal stress (DOHaD) 3. Study on the relationship between hand structure and grasping function
	Division of Neuroanatomy	Professor	KATSUYAMA Yu	1. Analysis of brain morphogenesis 2. Analysis of mechanisms of maintenance and differentiation of the stem cells 3. Analysis of model animals of psychiatric diseases.
		Associate Professor	KANEDA Hayato	1. Stem cell aging and tissue homeostasis 2. Search for biomarkers of age-related diseases 3. Brain morphogenesis
Department of Physiology	Division of Integrative Physiology	Professor	HITOSHI Seiji	1. Analysis of the generation, maintenance, and differentiation of neural stem cells 2. Development of regenerative therapy strategy for the damaged central nervous system 3. Understanding the pathogenesis of psychiatry diseases
	Division of Cell Physiology	Associate Professor	OMATSU Mariko	1. Characterization of stem or progenitor cells originated from fetal stages 2. Mechanisms of the regulation of intracellular Ca <sup>2+</sup>

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Department of Biochemistry and Molecular Biology	Division of Molecular Physiological Chemistry	Professor	AGATA Yasutoshi	1. Epigenetic regulation of gene expression and cancer development 2. Regulation of gene expression and cancer development by chromosome dynamics 3. Regeneration of cancer specific T cells from iPS cells
		Associate Professor	TERADA Koji	1. Molecular mechanism of antigen receptor gene rearrangement in lymphocytes 2. Gene-reglation for lymphocyte development
	Division of Molecular Medical Biochemistry	Professor	OGITA Hisakazu	1. Signal transduction reseach and genetic analysis in the field of cancer biology and cardiovascular diseases 2. Molecular mechanism of cell adhesion
		Associate Professor	SATO Akira	1. Signal transduction and cell-cell communication in cancer and inflammatory diseases. 2. Adult diseases triggered by aberrant regulation of Wnt signaling.
	Division of Stem Cell Biology and Regenerative Medicine	Associate Professor	TERASHIMA Tomoya	1. Engineering the novel molecular therapies with cell and tissue specific targeting 2. Application to the regenerative therapies with reprogramming of bone marrow-derived cells 3. Analysis of the relation between bone marrow-derived cells and neurological diseases
Department of Pathology	Division of Human Pathology	Professor	KUSHIMA Ryoji	1. Gastrointestinal pathology 2. Diagnostic pathology
		Associate Professor	NAKAYAMA Takahisa	1. Study on the progression potential of non-invasive cancer of gastrointestinal tract 2. Research on antitumor therapy based on synthetic lethality
	Division of Pathogenesis and Disease Regulation	Professor	ITOH Yasushi	1. Development of vaccines and therapeutic agents against influenza virus 2. Research on genetic diseases and aging using a non-human primate model 3. Analysis of immune responses using cynomolgus macaques
	Division of Microbiology and Infectious Diseases	Associate Professor	TANBE Yukihiro	1. Physiological function(s) of cancer-related genes. 2. Search for novel anti-tumor compounds.
Department of Pharmacology	—	Professor	NISHI Eiichiro	1. Molecular mechanism and pathophysiological role of ectodomain shedding 2. Regulatory role of transcriptional coregulator in metabolism 3. Role of metallopeptidases in cardiovascular disease, cancer and inflammatory diseases
		Associate Professor	OHNO Mikiko	1. Molecular mechanism and pathophysiological roles of heart rate control by the multifunctional protease. 2. Usefulness of the novel biomarker for the early detection of ACS 3. Regulatory role of protease in megakaryocyte maturation and platelet production 4. Role of metalloprotease in Alzheimer's disease
Department of Social Medicine	Division of Legal Medicine	Professor	HITOSUGI Masahito	1. Amalysis of traffic injuries 2. Pathophysiological analysis for sudden death cases due to thrombosis 3. Preventive medicine for deaths of external causes
		Associate Professor	NAKAMURA Mami	1. Forensic Toxicology, clinical toxicology, physiology of abuse drugs 2. Virtopsy, postmortem computed tomography 3. Out-of-hospital death by infectious disease including COVID-19

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Department of Internal Medicine	Division of Cardiovascular Medicine	Professor	NAKAGAWA Yoshihisa	1. Coronary reconstruction in ischemic heart disease 2. Primary and secondary prevention for atherosclerosis 3. Optimal antithrombotic therapy	
		Associate Professor	OZAWA Tomoya	(Now writing)	
	Division of Respiratory Medicine	Professor	NAKANO Yasutaka	1. Structure and function relationship of the lung 2. Structure and function relationship of respiratory diseases	
		Associate Professor	YAMAGUCHI Masafumi	1. Research on the pathophysiology of severe asthma 2. Study on the pathophysiology and treatment of chronic intractable cough	
	Division of Gastroenterology and Hematology	Professor	ANDOH Akira	1. Mucosal immunology 2. Gut microbiota 3. Cytokine network	
		Associate Professor	KITO Katsuyuki	1. Research about megakaryocytosis 2. Research for the treatment of hematological malignancies 3. Research on bone marrow transplantation	
		Associate Professor	INATOMI Osamu	1. Pancreatic fibrosis in pancreatic cancer and chronic pancreatitis 2. New development of endoscopic device in ERCP	
		Associate Professor	KAWAHARA Masahiro	1. Research for the maintenance of hematopoietic stem cells. 2. Research for the leukemia genesis and the development of novel drugs.	
	Division of Diabetology, Endocrinology and Nephrology	Associate Professor	UGI Satoshi	1. Clarification of the mechanisms and pathophysiology of adipokines 2. Clarification of the molecular regulation of metabolism by nutrients 3. Clarification of the mechanisms of improvement in glucose metabolism by bariatric surgery	
		Associate Professor	KUME Shinji	1. Pathogenesis of diabetic nephropathy 2. Pathogenesis of chronic kidney disease 3. Renal energy metabolism	
	Division of Neurology	Professor	URUSHITANI Makoto	1. Molecular targeted therapy for amyotrophic lateral sclerosis 2. Cell biological analysis of neurodegenerative diseases 3. Noninvasive diagnosis of neurological diseases 4. Molecular pathology of cerebrovascular diseases 5. Functional brain image analysis of Nerve rehabilitation	
		Associate Professor	SANADA Mitsuru	1. Research for the pathogenesis of diabetic neuropathy 2. Research for the relationship between chronic inflammation and peripheral neuropathy	
	Department of Pediatrics	—	Professor	MARUO Yoshihiro	1. Molecular genetic analysis of hereditary unconjugated hyperbilirubinemia 2. Polymorphism of UDP-glucuronyltransferase and drug metabolism 3. Genetic analysis of congenital hypothyroidism
			Associate Professor	TAGA Takashi	1. Clinical study for developing therapeutic approach of pediatric leukemia
Associate Professor			SAWAI Toshihiro	1. Study on diagnosis and treatment of the atypical hemolytic uremic syndrome 2. Elucidation of the disease mechanism of C3 glomerulopathy 3. Research on factors involved in complement dysregulation	
Associate Professor			MATSUI Katsuyuki	1. Study on the relevance of the therapeutic effect, treatment behavior, and QOL for pediatric type 1 diabetes 2. Study on diagnostic accuracy of hormone stimulation test in children	

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Department of Psychiatry	—	Professor	OZEKI Yuji	1. Etiology and pathophysiology of schizophrenia 2. Cardiovascular adverse effect by psychotropics
		Associate Professor	FUJII Kumiko	1. Etiology and pathophysiology of schizophrenia. 2. Mental illness with involuntary movemen.
		Associate Professor	YOSHIMURA Atsushi	1. Establishing novel biomarkers for post-operative delirium on elderly patients 2. Investigation for decreased quality of life and social function caused by sleep disorder 3. A retrospective observational study associated with electroconvulsive therapy by multiple facilities
Department of Dermatology	—	Professor	FUJIMOTO Noriki	1. Analysis of regulatory B cells on autoimmune diseases 2. Investigation for the treatment of cutaneous malignant tumors 3. Gene editing for treatment of epidermolysis bullosa
		Associate Professor	KATO Takeshi	1. Research in treatment of hair disease 2. Research in treatment of malignant skin tumor
Department of Surgery	Division of Gastrointestinal Surgery, and Breast, Pediatric, and General Surgery	Professor	TANI Masaji	1. Clinical study for the prevention of post operative complications in pancreatectomy 2. Development of immunotherapies for gastrointestinal diseases 3. Study of the pancreatic function 4. Evaluation of mechanisms for the metastasis 5. Study of the intervention for surgical skill 6. Interaction between cancer cells and fibroblasts
		Associate Professor	IIDA Hiroya	1. Assessment of frailty in elderly patients and perioperative intervention 2. Development of fluorescence navigation liver surgery
		Associate Professor	MIYAKE Tohru	1. Study for Cancer fibrosis. 2. Study for Cancer metastasis. 3. Study for peri operative management in Colorectal Surgery.
		Associate Professor	YAMAGUCHI Tsuyosi	1. Research on efficacy and safety of bariatric and metabolic surgery 2. Research on upper gastrointestinal surgery 3. Research on efficacy and safety of treatment of peptic ulcer
	Division of Cardiovascular Surgery and Thoracic Surgery	Professor	SUZUKI Tomoaki	1. Long term outcome of total arterial off-pump CABG 2. The outcome of total arch replacement under mild hypothermia 3. Technical aspect or long-term durability of mitral valve repair 4. Type A aortic surgery: optimal procedure or long-term remodeling
		Associate Professor	HANAOKA Jun	1. Minimally invasive surgery with VATS for chest diseases 2. A study of the operation method for lung cancer 3. da Vinci® robotic surgery in general thoracic surgery 4. A study of the identification technique of the interlobar/intersegmental plane 5. Evaluation of pulmonary function before and after lay resection using dynamic X-ray apparatus
		Associate Professor	OSHIO Yasuhiko	1. Uniportal video-assisted thoracoscopic surgery for non-small cell lung cancer 2. Surgical navigation system for non-small cell lung cancer 3. 8K endoscopic system for thoracic surgery 4. New method to detect and repair intraoperative pulmonary air leakage 5. Antitumor immune response and tumor microenvironment
	Department of Orthopaedic Surgery	—	Professor	IMAI Shinji
Associate Professor			MORI Kanji	1. Research for the ossification of the spinal ligaments 2. Research for the diagnosis and treatment for the disease with spine and spinal cord 3. Research for bone metabolism
Associate Professor			KUBO Mitsuhiko	1. Improvement of clinical outcome in total knee arthroplasty 2. Research for kinematics of total knee arthroplasty 3. Basic and clinical research for articular cartilage repair 4. Research for pain in osteoarthritis of the knee
Associate Professor			YAYAMA Takafumi	1. Research for ossification process in patients with ossification of spinal ligament 2. Pathological analysis for hypertrophy of ligament tissue

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Department of Neurosurgery	—	Professor	NOZAKI Kazuhiko	1. Research for cerebral ischemia 2. Research for cerebral aneurysms 3. Research for cerebral arteriovenous malformations
		Associate Professor	TSUJI Atsushi	1. Treatment and pathophysiology for ischemic cerebrovascular disease 2. Neuroendovascular treatment 3. Cerebral blood flow and metabolism
		Associate Professor	FUKAMI Tadataeru	1. Research for the multidisciplinary treatment for glioma 2. Research for the safety and the risk of awake surgery 3. Research for the therapeutic indications about neuroendoscopic surgery
		Associate Professor	NITTA Naoki	1. Pathophysiology and treatment of mesial temporal lobe epilepsy 2. Analysis of neurophysiological examination 3. Pathophysiology and treatment of brain tumors
Department of Otorhinolaryngology -Head and Neck Surgery	—	Professor	SHIMIZU Takeshi	1. Pathogenesis and regulation of upper airway inflammation 2. Mucus hypersecretion and goblet cell metaplasia 3. Immunology and allergy of upper airway
		Associate Professor	OWAKI Shigehiro	1. Diagnosis and treatment of voice disorder 2. Diagnosis and treatment of headandneck cancer
		Associate Professor	KOHZAKI Hideaki	1. The mechanism and control of epithelial-derived airway allergic diseases 2. The pathophysiological analysis of eosinophilic chronic rhinosinusitis 3. The pathophysiological analysis of Japanese cedar pollen rhinitis
		Associate Professor	TOJIMA Ichiro	1. Study of eosinophilic inflammation in upper airway 2. The pathophysiological research in allergic rhinitis 3. Mucus production and its regulation in airway epithelium
Department of Obstetrics and Gynecology	—	Professor	MURAKAMI Takashi	1. Minimally invasive gynecologic surgery (hysteroscopic, laparoscopic, and robotic surgery) 2. Endometriosis and adenomyosis 3. Reproductive endocrinology and infertility
		Associate Professor	KASAHARA Kyoko	1. Women's healthcare 2. Osteoporosis in women
		Associate Professor	TSUJI Syunichiro	1. Maintenance and failure of pregnancy 2. Diagnosis of fetal anomaly using ultrasonography 3. Diagnosis and treatment of cesarean scar syndrome 4. The role of resident microglia to neonatal hypoxic ischemic encephalopathy
Department of Urology	—	Professor	KAWAUCHI Akihiro	1. Research on robotic surgery 2. Research on minimally invasive surgery 3. Research on development of new imaging modality
		Associate Professor	NARITA Mitsuhiro	1. Research on the urological laparoscopic surgery. 2. Research on the treatments of the prostate cancer and the quality of life. 3. Research on the robot assisted surgenry.
		Associate Professor	JOHNIN Kazuyoshi	1. Surgery in pediatric urology (Research for plastic and laparoscopic surgery) 2. Research for voiding dysfunction in children 3. Application of MRI imaging in pediatric urology
		Associate Professor	KAGEYAMA Susumu	1. Research in urothelial cancer specific molecules 2. Development of new anti-cancer drugs for urologic malignancy 3. Proteomics research in urologic oncology

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Department of Ophthalmology	—	Professor	OHJI Masahito	<ol style="list-style-type: none"> <li>1. Study for vitreoretinal pathogenesis and development of new approach in vitreoretinal surgery</li> <li>2. Study for intraocular pharmacokinetics of cytokines</li> <li>3. Study for pathogenesis in the rat of diabetes model mice</li> </ol>
		Associate Professor	SAISHIN Yoshitsugu	<ol style="list-style-type: none"> <li>1. Molecular biology of retina</li> <li>2. Intraocular drug therapy</li> </ol>
		Associate Professor	SAWADA Osamu	<ol style="list-style-type: none"> <li>1. Pharmacokinetics of intravitreal agents</li> <li>2. Treatment for diabetic macular edema</li> </ol>
		Associate Professor	KAKINOKI Masashi	<ol style="list-style-type: none"> <li>1. Pharmacokinetics of intravitreal agents.</li> <li>2. Pharmacokinetics of intravitreal agents in macaque monkeys.</li> <li>3. New technics of vitreoretinal surgery.</li> </ol>
Department of Anesthesiology	—	Professor	KITAGAWA Hirotooshi	<ol style="list-style-type: none"> <li>1. Multimodal in vivo monitoring of ischemia reperfusion injury</li> <li>2. Cardioprotection by anesthetic agents and opioids</li> </ol>
		Associate Professor	KOJIMA Akiko	<ol style="list-style-type: none"> <li>1. Elucidation of molecular basis for the mechanisms underlying cardioprotective effect of anesthetics, focused on Ca<sup>2+</sup> transport proteins.</li> <li>2. Investigation of modulatory effects of anesthetics on cardiac pacemaker function.</li> <li>3. Electrophysiological and molecular biological analyses for the interaction between anesthetics and ion channels.</li> <li>4. Investigation of modulatory effects of anesthetics on ionic mechanisms involved in arrhythmogenesis.</li> </ol>
		Associate Professor	FUKUI Sei	<ol style="list-style-type: none"> <li>1. MR Spectroscopy (Brain imaging of chronic pain)</li> <li>2. Voxel based morphometry (Brain imaging of chronic pain)</li> <li>3. Interdisciplinary pain management of chronic pain</li> <li>4. Pulsed radiofrequency (PRF) (Minimum invasive therapy of Interventional pain treatment)</li> <li>5. Resting state functional MRI (Brain imaging of chronic pain)</li> </ol>
Department of Radiology	—	Professor	WATANABE Yoshiyuki	<ol style="list-style-type: none"> <li>1. Study for pathophysiology of central nerves system disease and functional imaging using MRI and CT.</li> <li>2. Artificial intelligence for medical imaging.</li> <li>3. Human fluid flow imaging using MRI.</li> </ol>
		Associate Professor	SONODA Akinaga	<ol style="list-style-type: none"> <li>1. Difference in tracheal diameter changes during deep breathing in a supine position between restrictive ventilator impairment patients, obstructive ventilator impairment patients and normal respiratory function patients using dynamic chest radiography</li> <li>2. Difference in the pixel value change of lung field during deep breathing between restrictive ventilator impairment patients, obstructive ventilator impairment patients and normal pulmonary function patients using dynamic chest radiography</li> <li>3. The effect of botulinum toxin A injection into the perirenal arterial space to treat hypertension</li> </ol>
		Associate Professor	ITO Ryuta	<ol style="list-style-type: none"> <li>1. Development of magnetic resonance imaging tools for brain morphological and functional analysis</li> </ol>
		Associate Professor	KONO Naoaki	<ol style="list-style-type: none"> <li>1. Clinical research on radiation therapy for localized prostate cancer</li> <li>2. A retrospective study of the safety and efficacy of multi-targeted stereotactic radiation for metastatic brain tumors</li> </ol>

Department / Centre	Division / Unit	Title	Name	Major Study Themes
Department of Oral and Maxillofacial Surgery	—	Professor	YAMAMOTO Gaku	<ol style="list-style-type: none"> <li>1. Study of the osteoblast for regeneration</li> <li>2. Pathogenesis and treatment of oral tumor</li> <li>3. Study on the reconstruction of the jaw</li> <li>4. Study on microbiota of the oral cavity</li> <li>5. Study of the Sleep apnea syndrome</li> </ol>
		Associate Professor	YAMORI Masashi	<ol style="list-style-type: none"> <li>1. Oral Cancer</li> <li>2. Jaw Defomities and Cleft Palate</li> <li>3. Anti-resorptive Agents-related Osteonecrosis of theJaw</li> <li>4. Obstructive Sleep Apnea Syndrome</li> <li>5. Periodontal Disease</li> <li>6. Dental Implant</li> </ol>
		Associate Professor	KOSHINUMA Shinya	<ol style="list-style-type: none"> <li>1.Elucidation of the mechanism of exposed bone wound healing and development of new tissue regeneration and repair materials</li> <li>2.Comprehensive analysis of oral flora</li> <li>3.Elucidation of the relationship between maxillofacial morphology and sleep apnea syndrome and various diseases</li> </ol>
Department of Clinical Laboratory Medicine	—	Associate Professor	CHANO Tokuhiko	<ol style="list-style-type: none"> <li>1. Clinical application of genetic medicine</li> <li>2. Analyzing the biological function RBICC1/FIP200</li> <li>3. Inventing novel strategies for cancer treatment,applied with novel biomarkers</li> <li>4. Drug development from targeting RAB39A</li> </ol>
Diagnostic Pathology Section	—	Associate Professor	MORITANI Suzuko	<ol style="list-style-type: none"> <li>1. Diagnostic pathology</li> <li>2. Pathology of the breast and gynecological organs</li> </ol>
Department of Critical and Intensive Care Medicine	—	Associate Professor	TABATA Takahisa	<ol style="list-style-type: none"> <li>1. Study of biological reaction mechanism in sepsis</li> <li>2. Study of the diagnosis and treatment of multiple trauma</li> </ol>
		Associate Professor	TSUJITA Yasuyuki	<ol style="list-style-type: none"> <li>1. Study of cardiac dysfunction and arrhythmia under excessive stress</li> <li>2. Study of septic organ dysfunction</li> <li>3. Epidemiological study of cardiovascular shock</li> </ol>
		Associate Professor	MATSUSHITA Mikiko	<ol style="list-style-type: none"> <li>1. How to off and on the job training of BLS and ALS</li> <li>2. Role and education of general physician in Japanese format</li> <li>3. Analysis of social and environmental factors in emergency department attendance</li> </ol>
Department of Medical Oncology (Cancer Center)	—	Professor	DAIGO Yataro	<ol style="list-style-type: none"> <li>1. Isolation and functional analysis of cancer-related genes.</li> <li>2. Elucidation of molecular pathology of cancer by genomics and proteomics analysis.</li> <li>3. Development of molecular-targeted drugs and cancer vaccines through translational reseach.</li> <li>4. Development of precision medicine and new cancer biomarkers through translational research.</li> </ol>
		Associate Professor	MURATA Satoshi	<ol style="list-style-type: none"> <li>1. Analysis of mechanisms and development of treatment for metastasis after surgery for gastrointestinal cancer</li> <li>2. Control over the perioperative tumor microenvironment in gastrointestinal cancers</li> <li>3. Development of immune cell therapy for solid cancers</li> <li>4. Hyperthermic Intraperitoneal Chemotherapy (HIPEC)</li> </ol>

Department / Centre	Division / Unit	Title	Name	Major Study Themes
Department of Comprehensive Internal Medicine	—	Professor	SUGIMOTO Toshiro	1. Medical diagnosis Avoiding diagnostic errors 2. Rural medicine 3. Clinical electrolyte acid-base abnormalities electrolyte; acid-base abnormalities 4. Development of continuing professional development using ICT
		Associate Professor	OHNISHI Masato	1. Pathophysiology and therapy of chronic heart failure 2. Diagnosis and therapy of hypertension in primary care 3. Simulation-based instruction in healthcare professionals
		Associate Professor	ITOH Akihiko	1. Percutaneous endoscopic gastrostomy and management of that patient. 2. Indication and complications of enteral nutrition. 3. Nutritional support team management and multi-occupation collaboration.
		Associate Professor	MAENO Yasuhiro	1. Development of effective regional cooperation for medical care of the diabetic patients 2. Development of effective educational techniques for the diabetic or pre-diabetic people
		Associate Professor	WADA Hiroshi	1. Research for the efficacy of regional cooperation in respiratory medicine examination. 2. Clinical examination of obstructive pulmonary disease.
Department of Comprehensive Surgery	—	Professor	MEKATA Eiji	1. Multimodality therapy for colorectal cancer 2. Development of the resin of the surgical instrument 3. Anticancer drug sensitivity test 4. Oncology (disease state, therapy and community cooperation)
		Associate Professor	OHTA Hiroyuki	1. Multimodality therapy for colorectal cancer 2. Clinical study of postoperative complication 3. Development of the resin of the surgical instrument
		Associate Professor	AKABORI Hiroya	1. Study of gastrointestinal surgical stress 2. Development of microwave surgical device 3. Clinical study of the operation method for pancreas
		Associate Professor	KITAMURA Naomi	1. Development of new endotoxin measurement method. 2. Postoperative analgesic effect for laparoscopic cholecystectomy.
Department of Plastic and Reconstructive Surgery	—	Associate Professor	OKANO Junko	1. Development of new therapy of nonhealing skin ulcer using bone marrow cells 2. The role of bone marrow cells on skin homeostasis
Clinical Nutrition	—	Associate Professor	BANBA Shigeki	1. Indirect calorimetry 2. Energy consumption and cytokines 3. Nutritional therapy in inflammatory bowel diseases
Blood Purification Section		Associate Professor	KANASAKI Masami	1. Blood purification 2. Mechanism of development of diabetic nephropathy
Blood Service Section		Associate Professor	MINAMIGUCHI Hitoshi	1. Phenotypic analysis of hematopoietic stem cell 2. Phenotypic analysis of leukemic stem cell
Medical Informatics and Biomedical Engineering Section	—	Associate Professor	SUGIMOTO Yoshihisa	1. Medical electronics 2. Medical information system 3. Biomedical engineering for cardiology
Pharmacy	—	Associate Professor	MORITA Shinya	1. Research on lipid transporters and lipid metabolism 2. Development of methods for measuring lipids
Medical Safety Section	—	Professor	SHIMIZU Tomoharu	1. Study of surgical stress 2. Development of new endotoxin measurement method 3. Studies of treatment for colorectal cancer and inflammatory bowel diseases
		Associate Professor	MANDAI Ryoichi	1. in-hospital emergency system



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Rehabilitation Section	—	Associate Professor	KODAMA Narihito	<ol style="list-style-type: none"> <li>1. A study of bone and soft tissue tumors</li> <li>2. Microsurgical approach for orthopedics and reconstructive surgery</li> <li>3. A study of the idiopathic interosseous nerve palsy</li> </ol>
Center for Clinical Research and Advanced Medicine	—	Professor	KUTSUMI Hiromu	<ol style="list-style-type: none"> <li>1. Regulatory science</li> <li>2. Development of innovative medicine</li> <li>3. Gastroenterological endoscopy</li> </ol>
		Associate Professor	KURATA Mayumi	<ol style="list-style-type: none"> <li>1. A Recognition Investigation about Living Donor Transplantation. : Analysis of the free description answer of the citizen by the Internet survey</li> <li>2. Construction of the study entry applicant support system which utilized the Internet</li> <li>3. Critical Review of Priority Relative-Offers in Revision of Organ Transplant Law</li> </ol>
Clinical Education Center for Physicians	—	Associate Professor	KAWASAKI Taku	<ol style="list-style-type: none"> <li>1. Hip and knee arthroplasty</li> <li>2. Epidemiology of rheumatoid arthritis</li> <li>3. Locomotive rehabilitation</li> </ol>
Molecular Neuroscience Research Center	Basic Neuroscience Research Unit - Department of Molecular Neuropathology	Professor	NISHIMURA Masaki	<ol style="list-style-type: none"> <li>1. Molecular neuropathology of Alzheimer's disease</li> <li>2. Development of preemptive medicine for Alzheimer's disease</li> <li>3. Neuroscience on the principle underlying memory-based behaviors</li> </ol>
	Translational Research Unit - Department of Diagnostics and Therapeutics for Brain Diseases	Associate Professor	YANAGISAWA Daijiro	<ol style="list-style-type: none"> <li>1. Research on fluorine-19 MR imaging as a diagnostic tool for Alzheimer's disease</li> <li>2. Research on pathogenesis and therapeutic targets in Alzheimer's disease</li> <li>3. Research on diagnosis and treatment for neurodegenerative diseases</li> </ol>
	Translational Research Unit - Department of Biomedical MR Science	Associate Professor	SHIINO Akihiko	<ol style="list-style-type: none"> <li>1. Development of molecularly targeted agents</li> <li>2. Study and programming of diagnostic software for brain MR imaging</li> <li>3. Magnetic resonance spectroscopy</li> <li>4. Clinical study in neurological disorders</li> </ol>
Research Center for Animal Life Science	—	Professor	EMA Masatsugu	<ol style="list-style-type: none"> <li>1. Research about monkey ES and iPS cells</li> <li>2. Human disease modeling with genetically engineered monkey</li> <li>3. Research about mouse ES and iPS cells</li> <li>4. Molecular mechanism about angiogenesis</li> </ol>
		Associate Professor	MORIMURA Toshifumi	<ol style="list-style-type: none"> <li>1. Therapeutic research of anti-ER stress drugs identified by a novel luminous probe.</li> <li>2. Analysis of cellular pathology of sporadic amyotrophic lateral sclerosis focusing on translation products whose mRNAs are recognized by TDP-43.</li> <li>3. Early diagnosis and therapeutic research of Alzheimer's disease by using transgenic cynomolgus monkeys bearing amyloid-beta precursor protein with disease associated mutations.</li> </ol>
Health Administration Center	—	Associate Professor	OGAWA Emiko	<ol style="list-style-type: none"> <li>1. Research on the pathogenesis of chronic obstructive pulmonary disease (COPD)</li> <li>2. Clinical research using COPD cohort data</li> </ol>
Information Technology and Management Center	—	Professor	ASHIHARA Takashi	<ol style="list-style-type: none"> <li>1. Development of new strategy of catheter ablation for refractory arrhythmias.</li> <li>2. Studies on the mechanism of electrical defibrillation and the development of new defibrillator.</li> <li>3. Application of human iPS cell-derived cardiomyocytes to the studies on cardiovascular diseases.</li> <li>4. Studies on cardiovascular diseases by in silico, artificial intelligence, and biomedical engineering.</li> </ol>
		Associate Professor	MOTOYAMA Kazutaka	<ol style="list-style-type: none"> <li>1. studies on star formation process</li> <li>2. studies on evolution of interstellar medium</li> <li>3. high performance computing</li> </ol>

Department / Centre	Division / Unit	Title	Name	Major Study Themes
Education Center for Medicine and Nursing	—	Professor	ITO Toshiyuki	1. Medical education
		Professor	MUKAISHO Kenichi	1. Gastric and esophageal carcinogenesis using various animal models 2. Analyses of extra-esophageal symptoms of GERD using reflux animal models 3. Influence of bile acids on carcinogenesis and cancer progression 4. Morphology of cancer cells using a novel 3D cell culture system
NCD Epidemiology Research Center	Division of Preventive Medicine	Professor	MIURA Katsuyuki	1. Epidemiologic research of cardiovascular diseases 2. Preventive medicine of cardiovascular diseases 3. Nutritional epidemiology
		Associate Professor	KADOTA Aya	1. Epidemiology on DM, CVD and NCD 2. Preventive medicine on DM, CVD and NCD 3. Epidemiologic study of subclinical atherosclerosis and dementia
	Division of Advanced Epidemiology	Professor	YANO Yuichiro	1. research on lifestyle-related diseases 2. big data 3. Epidemiological research
	Division of Medical Statistics	Associate Professor	HARADA Akiko	1. Statistical methods for epidemiologic researches 2. Statistical methods for health services research 3. Epidemiologic research of physical activity and aging
Department of Research and Development for Innovative Medical Devices and Systems	—	Special Contract Professor	TANI Toru	1. Future surgical operation system 2. Robotic navigation surgical operation 3. Less invasive surgical operation 4. Microwave surgical devices 5. Hyperthermia treatment against malignancy
Community Healthcare Education and Research Center	—	Associate Professor	UMEDA Tomoko	1. Fibrinolysis factors (uPA etc.) and adhesion factors (CD44 variant etc.) related to the breast cancer invasion and the metastasis. 2. MRI mapping for the intraductal area of breast cancer 3. Tumor infiltrating cells around of the breast cancer, related to the trastuzumab after neoadjuvant chemotherapy
		Associate Professor	NAKAJIMA Shigemi	1. Community-based medicine 2. General medicine and internal medicine 3. Clinical gastroenterology, specially upper GI tract diseases and functional GI disorders 4. Health check-up and mass screening, specially gastric cancer screening
IR Office	—	Associate Professor	MORINO Katsutaro	1. Mechanism of Metabolism and Nutrition 2. Mitochondrial biogenesis