

Appendix 2

Major Study Themes of Faculty

(As of September 2023)

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
		Associate Professor	SATOOKA Hiroki	1. Immunometabolism and redox signaling in autoimmunity 2. The mechanism of CD8+ regulatory T cell differentiation and the application of CD8+ regulatory T cell for autoimmune disease treatment. 3. Non-lymphoid tissue-specific immune regulation
	Division of Mathematics	Associate Professor	KAWAKITA Motoko	1. Algebraic curves with many rational points
Department of Culture and Medicine	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. Analysis of the pathogenesis of nonalcoholic fatty liver disease related to in utero environment 3. Study on the relationship between hand structure and grasping function
		Special Contract Associate Professor	UCHIMURA Yasuhiro	1. Elucidation of the molecular mechanisms underpinning DOHaD (developmental origins of health and disease) hypothesis 2. Elucidation of the function of the genes involved in the onset of sarcopenia
	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

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Department / Centre	Division / Unit	Title	Name	Major Study Themes
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
	Division of Molecular Medical Biochemistry	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.
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
		Associate Professor	ISHIGAKI Hirohito	1. Immunology with using a primate model especially for tumor, transplantation, and infectious disease
	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 Occupational and Environmental Health	Special Contract Associate Professor	KITAHARA Teruyo	1. Prevention of Work-related Musculoskeletal Disorders 2. Health and Safety of Persons with Disabilities (Prevention of secondary disorders) 3. Support for Balancing Treatment and Work 4. Social Barriers and Health of People with Disabilities or Information Vulnerable Populations
	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 / Centre	Division / Unit	Title	Name	Major Study Themes
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)
		Associate Professor	SAKAI Hiroshi	1. Elucidation of the pathophysiology of heart failure 2. Research on diagnosis and treatment of pulmonary hypertension 3. Research on diagnosis and treatment of cardiac amyloidosis
	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	Professor	ANDOH Akira	1. Mucosal immunology 2. Gut microbiota 3. Cytokine network
		Associate Professor	INATOMI Osamu	1. Pancreatic fibrosis in pancreatic cancer and chronic pancreatitis 2. New development of endoscopic device in ERCP
		Associate Professor	NISHIDA Atsushi	1. Mucosal immunity in inflammatory bowel disease 2. The gut microbiota in inflammatory bowel disease 3. Cytokine network in inflammatory bowel disease
	Division of Hematology	Professor	MURATA Makoto	1. Mechanism of immune response after hematopoietic stem cell transplantation 2. Prognostic factor for hematological diseases 3. Development of novel cellular therapy
	Division of Diabetology, Endocrinology and Nephrology	Professor	KUME Shinji	1. Pathogenesis of diabetic nephropathy 2. Pathogenesis of chronic kidney disease 3. Renal energy metabolism
		Associate Professor	FUJITA Yukihiro	1. Pathophysiology of Type 2 diabetes 2. Roles of the gut in glucose metabolism, including incretin biology 3. Pathophysiology of alpha cells in pancreatic islets 4. Cohort studies on diabetic complications
	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	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
		Associate Professor	YAMAKAWA Isamu	1. Electrodiagnosis in clinical neurology 2. Neurorehabilitation and Brain functional image
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	YANAGI Takahide	1. Genetic background of prolonged hyperbilirubinemia in preterm infants 2. Genetic background of bilirubin encephalopathy in preterm infants

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Department / Centre	Division / Unit	Title	Name	Major Study Themes
Department of Psychiatry	-	Professor	OZEKI Yuji	1. Etiology and pathophysiology of schizophrenia 2. Cardiovascular adverse effect by psychotropics
		Special Contract Professor	KADOTANI Hiroshi	1. Clinical research on sleep disorders 2. Epidemiological research on sleep and mental health 3. Development and evaluation of wearable devices to analyze sleep
		Associate Professor	FUJII Kumiko	1. Etiology and pathophysiology of schizophrenia. 2. Mental illness with involuntary movemen. 3. Clinical studies of pregnant women with mental illness
		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	TAKAHASHI Toshifumi	1. Research for diagnosis and treatment of allergic skin diseases 2. Research for detecting the genomes of pathogens in infectious skin diseases 3. Research for the pathogenesis and treatment of genetic skin diseases
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	MIYAKE Tohru	1. Study for Cancer fibrosis. 2. Study for Cancer metastasis. 3. Study for peri operative management in Colorectal Surgery.
		Associate Professor	ISHIKAWA Hajime	1. Research on improving the safety of hepatectomy 2. Analysis of physiological response to cancer immunotherapy
		Associate Professor	KAIDA Sachiko	1. Study on nutritional status after gastric cancer surgery 2. Research on the usefulness and safety of robot-assisted gastrectomy 3. Research on automatic recognition of the stomach and surrounding blood vessels using artificial intelligence (AI)
	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 lobectomy 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
		Associate Professor	TAKASHIMA Noriyuki	1. Study of long-term outcome of thoracic aortic aneurysm 2. Surgical examination and long-term prognosis study for acute aortic dissection 3. Examination of arterial wall extensibility and clinical application 4. Study of surgical procedure and long-term outcome of aortic stenosis

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Department / Centre	Division / Unit	Title	Name	Major Study Themes
Department of Orthopaedic Surgery	-	Professor	IMAI Shinji	<ol style="list-style-type: none"> 1. Improvement of clinical output in arthroscopic shoulder surgery 2. Improvement of clinical output in shoulder arthroplasty 3. Regenerative medicine for injuries of articular cartilage and spinal cord
		Associate Professor	MORI Kanji	<ol style="list-style-type: none"> 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	YAYAMA Takafumi	<ol style="list-style-type: none"> 1. Research for ossification process in patients with ossification of spinal ligament 2. Pathological analysis for hypertrophy of ligament tissue
		Associate Professor	MIMURA Tomohiro	<ol style="list-style-type: none"> 1. Research on femoroacetabular impingement syndrome 2. Research on acetabular dysplasia 3. Research on hip anatomy and plain radiography
		Special Contract Associate Professor	KUMAGAI Kosuke	<ol style="list-style-type: none"> 1. Development of joint degenerative disease diagnostic method and suppressive therapy by comprehensive analysis of cell membrane ion channels. 2. A comparative study of drug use during the acquisition of low disease activity in rheumatoid arthritis patients. 3. Correlation between TKA postoperative satisfaction and patient-based outcome in RA patients.
Department of Neurosurgery	-	Professor	YOSHIDA Kazumichi	<ol style="list-style-type: none"> 1. Molecular pathophysiology and non-invasive diagnostic imaging of atherosclerosis 2. Molecular pathophysiology and non-invasive diagnostic imaging of cerebral aneurysm 3. Development of a novel surgical treatment for cerebrovascular diseases 4. Epidemiology of cerebrovascular disease
		Associate Professor	TSUJI Atsushi	<ol style="list-style-type: none"> 1. Treatment and pathophysiology for ischemic cerebrovascular disease 2. Neuroendovascular treatment 3. Cerebral blood flow and metabolism
		Associate Professor	FUKAMI Tadateru	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 1. Pathophysiology and treatment of mesial temporal lobe epilepsy 2. Analysis of neurophysiological examination 3. Pathophysiology and treatment of brain tumors

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Department / Centre	Division / Unit	Title	Name	Major Study Themes
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	Female Pelvic Surgery and Reproductive Medicine	Professor	MURAKAMI Takashi	1. Minimally invasive gynecologic surgery (hysteroscopic, laparoscopic, and robotic surgery) 2. Endometriosis and adenomyosis 3. Reproductive endocrinology and infertility
		Associate Professor	AMANO Tsukuru	1. Robotic-Assisted Surgery for Gynecological Tumors 2. Elucidation of resistance to treatment of gynecological tumors using organoids 3. Mechanism of carcinogenesis of endometriosis
	Maternal and Fetal Medicine	Associate Professor	TSUJI Syunichiro	1. Elucidation of pathophysiology and development of treatment and prevention methods for cesarean scar syndrome 2. Elucidation of the pathogenesis and development of treatments for perinatal brain disorders 3. Diagnosis and treatment of cesarean scar syndrome 4. The role of resident microglia to neonatal hypoxic ischemic encephalopathy
		Associate Professor	KASAHARA Kyoko	1. Women's healthcare 2. Osteoporosis in women
Department of Urology	-	Associate Professor	JOHNIN Kazuyoshi	1. Surgery in pediatric urology (Research for plastic and laparoscopic surgery) 2. Reserch for voiding dysfunction in children 3. Application of MRI imaging in pediatric urology
		Associate Professor	KAGEYAMA Susumu	1. Clinical research in robotic and laparoscopic surgery 2. Development of new anti-cancer drugs for urologic malignancy 3. Proteomics research in urologic oncology
Department of Ophthalmology	-	Professor	OHJI Masahito	1. Study for vitreoretinal pathogenesis and development of new approach in vitreoretinal surgery 2. Study for intraocular pharmacokinetics of cytokines 3. Study for pathogenesis in the rat of diabetes model mice
		Associate Professor	SAISHIN Yoshitsugu	1. Molecular biology of retina 2. Intraocular drug therapy
		Associate Professor	SAWADA Osamu	1. Pharmacokinetics of intravitreal agents 2. Treatment for diabetic macular edema
		Associate Professor	KAKINOKI Masashi	1. Pharmacokinetics of intravitreal agents. 2. Pharmacokinetics of intravitreal agents in macaque monkeys. 3. New technics of vitreoretinal surgery.
Department of Anesthesiology	-	Professor	KITAGAWA Hirotooshi	1. Multimodal in vivo monitoring of ischemia reperfusion injury 2. Cardioprotection by anesthetic agents and opioids
		Associate Professor	KOJIMA Akiko	1. Elucidation of molecular basis for the mechanisms underlying cardioprotective effect of anesthetics, focused on Ca ²⁺ transport proteins. 2. Investigation of modulatory effects of anesthetics on cardiac pacemaker function. 3. Electrophysiological and molecular biological analyses for the interaction between anesthetics and ion channels. 4. Investigation of modulatory effects of anesthetics on ionic mechanisms involved in arrhythmogenesis.
		Associate Professor	IWASHITA Narihito	1. Elucidating the brain mechanisms of pain using functional brain imaging 2. Multidisciplinary treatment for chronic pain 3. Development of minimally invasive treatment using pulse radiofrequency method

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Department / Centre	Division / Unit	Title	Name	Major Study Themes
Department of Radiology	-	Professor	WATANABE Yoshiyuki	<ol style="list-style-type: none"> 1. Study for pathophysiology of central nerves system disease and functional imaging using MRI and CT. 2. Artificial intelligence for medical imaging. 3. Human fluid flow imaging using MRI.
		Associate Professor	SONODA Akinaga	<ol style="list-style-type: none"> 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 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 3. The effect of botulinum toxin A injection into the perirenal arterial space to treat hypertension
		Associate Professor	KONO Naoaki	<ol style="list-style-type: none"> 1. Clinical research on radiation therapy for localized prostate cancer 2. A retrospective study of the safety and efficacy of multi-targeted stereotactic radiation for metastatic brain tumors
		Associate Professor	KITAHARA Hitoshi	<ol style="list-style-type: none"> 1. Research on improving the image quality of ultra-high-resolution CT of the lungs using artificial intelligence 2. Efforts to improve the accuracy of diagnostic imaging in the musculoskeletal radiology 3. Efforts to improve the accuracy of diagnostic imaging in the pediatric radiology 4. Efforts to improve the accuracy of diagnostic imaging in the neuroradiology
Department of Oral and Maxillofacial Surgery	-	Associate Professor	YAMORI Masashi	<ol style="list-style-type: none"> 1. Oral Cancer 2. Jaw Defomities and Cleft Palate 3. Anti-resorptive Agents-related Osteonecrosis of theJaw 4. Obstructive Sleep Apnea Syndrome 5. Periodontal Disease 6. Dental Implant
		Associate Professor	KOSHINUMA Shinya	<ol style="list-style-type: none"> 1. Elucidation of the mechanism of exposed bone wound healing and development of new tissue regeneration and repair materials 2. Comprehensive analysis of oral flora 3. Elucidation of the relationship between maxillofacial morphology and sleep apnea syndrome and various diseases
Department of Clinical Laboratory Medicine	-	Associate Professor	CHANO Tokuhiko	<ol style="list-style-type: none"> 1. Clinical application of genetic medicine 2. Analyzing the biological function RBICCI/FIP200 3. Inventing novel strategies for cancer treatment,applied with novel biomarkers 4. Drug development from targeting RAB39A
Diagnostic Pathology	-	Associate Professor	MORITANI Suzuko	<ol style="list-style-type: none"> 1. Diagnostic pathology 2. Pathology of the breast and gynecological organs
Department of Critical and Intensive Care Medicine	-	Professor	SHIOMI Naoto	<ol style="list-style-type: none"> 1. Study on multimodal treatment of severe head injury 2. Clinical research on brain death and resuscitation 3. Construction of pre-hospital emergency medical care system 4. End of life care in the Emergency medical field
		Associate Professor	TSUJITA Yasuyuki	<ol style="list-style-type: none"> 1. Study of cardiac dysfunction and arrhythmia under excessive stress 2. Study of septic organ dysfunction 3. Epidemiological study of cardiovascular shock
		Associate Professor	FUJINO Kazunori	<ol style="list-style-type: none"> 1. Elucidation of the mechanism of multi-organ failure during invasion

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Department / Centre	Division / Unit	Title	Name	Major Study Themes
Department of Medical Oncology (Cancer Center)	-	Professor	DAIGO Yataro	<ol style="list-style-type: none"> 1. Isolation and functional analysis of cancer-related genes. 2. Elucidation of molecular pathology of cancer by genomics and proteomics analysis. 3. Development of molecular targeted drugs (small compounds, antibody, nucleic acid medicine) Development and translational research of cancer vaccine and immunomodulator drugs 4. Development of precision medicine and new cancer biomarkers through translational research. 5. Establishment of biobank and scientific platform of supporting human biospecimen analysis
		Associate Professor	MURATA Satoshi	<ol style="list-style-type: none"> 1. Analysis of mechanisms and development of treatment for metastasis after surgery for gastrointestinal cancer 2. Control over the perioperative tumor microenvironment in gastrointestinal cancers 3. Development of immune cell therapy for solid cancers 4. Hyperthermic Intraperitoneal Chemotherapy (HIPEC)
Department of Comprehensive Internal Medicine	-	Professor	SUGIMOTO Toshiro	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 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	YAMAGUCHI Tsuyosi	<ol style="list-style-type: none"> 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
		Associate Professor	AKABORI Hiroya	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 1. Development of new endotoxin measurement method. 2. Postoperative analgesic effect for laparoscopic cholecystectomy.
Department of Plastic and Reconstructive Surgery	-	Special Contract Associate Professor	ARATA Jun	<ol style="list-style-type: none"> 1. Evaluation of percutaneous osteotomy for callus distraction 2. Research of monitoring for tissue transfer 3. Research of survival rate and number of vascular anastomosis for digital replantation
		Associate Professor	OKANO Junko	<ol style="list-style-type: none"> 1. Establishment of a novel scaffold which leads to the regeneration of heterogenous tissues in deep wounds 2. Development of bacteriophage therapy for multi-antibiotic-resistant bacteria
Endoscopy	-	Associate Professor	KIMURA Hidenori	<ol style="list-style-type: none"> 1. Development of minimally invasive treatment for gastrointestinal tumors 2. Research on observation methods to improve the detection rate of gastrointestinal tumors 3. Pathophysiological analysis in the development of gastrointestinal tumors focusing on the gut microbiota
Blood Purification	-	Associate Professor	KANASAKI Masami	<ol style="list-style-type: none"> 1. Blood purification 2. Mechanism of development of diabetic nephropathy

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Department / Centre	Division / Unit	Title	Name	Major Study Themes
Blood Transfusion and Cell Therapy Center	–	Associate Professor	MINAMIGUCHI Hitoshi	1. Phenotypic analysis of hematopoietic stem cell 2. Phenotypic analysis of leukemic stem cell
Clinical Nutrition	–	Associate Professor	TAKEBAYASHI Katsushi	1. Perioperative nutritional support for esophageal cancer surgery 2. The mechanism leading to postoperative recurrence of gastric and esophageal cancer 3. Multidisciplinary treatment strategy for esophageal cancer
Medical Informatics and Biomedical Engineering	–	Associate Professor	SUGIMOTO Yoshihisa	1. Medical electronics 2. Medical information system 3. Biomedical engineering for cardiology
Department of Pharmacotherapeutics (Pharmacy)	–	Professor	MORITA Shin-ya	1. Research on lipid transporters and lipid metabolism 2. Development of methods for measuring lipids 3. Study of personalized medicine
		Associate Professor	IKEDA Yoshito	1. Research on lipid transporters 2. Research on metal transporters
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
Rehabilitation Section	–	Associate Professor	KODAMA Narihito	1. A study of bone and soft tissue tumors 2. Microsurgical approach for orthopedics and reconstructive surgery 3. A study of the idiopathic interosseous nerve palsy
Center for Clinical Research and Advanced Medicine	–	Associate Professor	KURATA Mayumi	1. A Recognition Investigation about Living Donor Transplantation. : Analysis of the free description answer of the citizen by the Internet survey 2. Construction of the study entry applicant support system which utilized the Internet 3. Critical Review of Priority Relative-Offers in Revision of Organ Transplant Law
Clinical Education Center for Physicians	–	Professor	KAWASAKI Taku	1. Hip and knee arthroplasty 2. Epidemiology of rheumatoid arthritis 3. Locomotive rehabilitation
		Associate Professor	YAMAHARA Mako	1. Podocyte injury in diabetic kidney disease 2. Mechanism of progression of chronic kidney disease
Molecular Neuroscience Research Center	Basic Neuroscience Research Unit - Department of	Professor	NISHIMURA Masaki	1. Molecular neuropathology of Alzheimer's disease 2. Development of preemptive medicine for Alzheimer's disease 3. Neuroscience on the principle underlying memory-based behaviors
	Translational Research Unit - Department of Diagnostics and Therapeutics for Brain Diseases	Professor	ISHIGAKI Shinsuke	1. Study of the pathogenesis involved in neurodegenerative disorders and dementia 2. Therapeutics development for neurodegenerative disorders and dementia by antisense modulation 3. Development for novel biomarkers for neurodegenerative disorders and dementia by behavioral test batteries and imaging analysis
		Associate Professor	YANAGISAWA Daijiro	1. Elucidation of Alzheimer's disease pathology for discovering novel therapeutic targets. 2. Development of diagnostic biomarkers for dementia at very early stage. 3. Research on the pathology, diagnosis, and disease-modifying therapy of neurodegenerative diseases.
	Translational Research Unit - Department of Biomedical MR Science	Associate Professor	SHIINO Akihiko	1. Development of molecularly targeted agents 2. Study and programming of diagnostic software for brain MR imaging 3. Magnetic resonance spectroscopy 4. Clinical study in neurological disorders

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Department / Centre	Division / Unit	Title	Name	Major Study Themes
Research Center for Animal Life Science	-	Professor	EMA Masatsugu	<ol style="list-style-type: none"> 1. The research about primate ES/iPS cells 2. The research about the development of method to create genetically modified monkeys and its application to human disease modeling 3. The research about primate early embryonic and placental development 4. Molecular mechanism about angiogenesis
		Associate Professor	MORIMURA Toshifumi	<ol style="list-style-type: none"> 1. Therapeutic research of anti-ER stress drugs identified by a novel luminous probe. 2. Analysis of cellular pathology of sporadic amyotrophic lateral sclerosis focusing on translation products whose mRNAs are recognized by TDP-43. 3. Early diagnosis and therapeutic research of Alzheimer's disease by using transgenic cynomolgus monkeys bearing amyloid-beta precursor protein with disease associated mutations.
Medical Innovation Research Center	Pioneering Research Division	Special Contract Associate Professor	HASHIMOTO Shoko	<ol style="list-style-type: none"> 1. Elucidation of pathological mechanism of Alzheimer's disease using mouse models 2. Analysis of the effect of oxidative stress on brain homeostasis
	International Joint Research Division	Special Contract Professor	Wan Zurinah Binti Wan Ngah	<ol style="list-style-type: none"> 1. Research theme includes mechanisms in ageing and neurodegenerative diseases such as Alzheimer's Disease and modulation by antioxidants such as palm oil vitamin E tocotrienol. 2. Modulation of the gut microbiome and metabolome and correlation with cognitive function by tocotrienol in an APP/PS1 AD mouse model. 3. Tocotrienol isomers effects on differentiated APP Swedish/PS1 transfected SH-SY5Y cells 4. Systems integration of the transcriptome, proteome and metabolome of the hippocampus of AD APP/PS1 mice treated with tocotrienol (Collaboration with UKM)
	Advanced Medical Research and Development Division	Special Contract Associate Professor	YAMADA Atsushi	<ol style="list-style-type: none"> 1. Bending mechanisms for medical devices 2. Flexible medical devices 3. Flexible robot mechanisms 4. Image guided surgeries
Central Research Laboratory	-	Associate Professor	ASAHINA Kinji	<ol style="list-style-type: none"> 1. Elucidating the mechanism of the activation of hepatic stellate cells in liver fibrosis. 2. Interaction of peritoneal macrophages and mesothelial cells covering the internal organs in the peritoneal cavity. 3. Role of macrophages in pancreatic cancer.
Health Administration Center	-	Associate Professor	OGAWA Emiko	<ol style="list-style-type: none"> 1. Research on the pathogenesis of chronic obstructive pulmonary disease (COPD) 2. Clinical research using COPD cohort data
Information Technology and Management Center	-	Professor	ASHIHARA Takashi	<ol style="list-style-type: none"> 1. Development of new strategy of catheter ablation for refractory arrhythmias. 2. Studies on the mechanism of electrical defibrillation and the development of new defibrillator. 3. Application of human iPS cell-derived cardiomyocytes to the studies on cardiovascular diseases. 4. Studies on cardiovascular diseases by in silico, artificial intelligence, and biomedical engineering.
		Associate Professor	MOTOYAMA Kazutaka	<ol style="list-style-type: none"> 1. studies on star formation process 2. studies on evolution of interstellar medium 3. high performance computing
Education Center for Medicine and Nursing	-	Professor	ITO Toshiyuki	<ol style="list-style-type: none"> 1. Medical education
		Professor	MUKAISHO Kenichi	<ol style="list-style-type: none"> 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

Appendix 2

(As of September 2023)

Department / Centre	Division / Unit	Title	Name	Major Study Themes
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 of Diabetes mellitus and NCDs 2. Epidemiology of Cardiovascular disease and subclinical atherosclerosis 3. MWAS on 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 Regenerative Medicine Development	–	Special Professor	KOJIMA Hideto	1. Regenerative medicine through epigenetic reprogramming 2. Complete remission for diabetes mellitus 3. Cell-targeted therapy for stem cell disease
	–	Special Contract Professor	NAKAGAWA Takahiko	1. Research aiming at complete remission of diabetes 2. Research aiming at curing chronic kidney disease 3. Research aiming at understanding fructose and uric acid in metabolic disorders 4. Research aiming at complete remission of autoimmune diseases
Department of Biocommunication Development	–	Special Professor	KOJIMA Hideto	1. Biocommunication data base 2. Cell-targeting ZIP-CODE system 3. Phage therapy
Department of Advanced Medical Research and Development	–	Special 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	KAWAI Hiromichi	(Now writing)
IR Office	–	Associate Professor	MORINO Katsutaro	1. Mechanism of Metabolism and Nutrition 2. Mitochondrial biogenesis