The first educational and research center in Japan combined with medical, dental, pharmaceutical and health sciences. Pursuing advanced research and educating the biomedical and health professionals of tomorrow.

Hiroshima University
Graduate School of
Biomedical &
Health Sciences
Message from Dean

Dean, Graduate School of
Biomedical & Health Sciences
Hiroshima University

Wataru Yasui, M.D., Ph.D.

Graduate School of Biomedical & Health Sciences is distinguished as a first graduate school with a fusion of medicine, dentistry, pharmacy and health science established in Japan. It also collaborates closely with the University Hospital and the Research Institute for Radiation Biology and Medicine at Kasumi Campus. By taking great advantages of the characteristics and functions, the graduate school aims: to promote educational research activities in novel or combined fields surpassing frameworks of conventional academic areas, to invigorate laboratory works responding to advanced and complex scholastic pursuits, to enhance / enforce the inter-professional education through integration of different intellectual disciplines. In flexible educational / research structures, the graduate programs train highly specialized personnel who can play a leading role in advanced treatment teams with a wide range of medical knowledge and practical skills. Furthermore, making use of the “Center for Medical Specialist Graduate Education & Research”, our graduate school provides practical educations such as biomedical research course works and an English rhetoric & writing course that enable students to gain rigid achievements in their research, internationalizations and social contributions.

Upon the launch of Hiroshima Innovation Center for Biomedical Engineering and Advanced Medicine at Kasumi Campus, we have developed various projects such as the medical-engineering cooperation, and the advanced cell technology-regenerative medicine in collaboration with other universities, enterprises and supporting institutions. By collaborating with three universities in Hiroshima area, we have concentrated on raising the personnel capable of taking a leadership in advanced treatment teams at regions with remarkable progresses in clinical biomedical technologies and informatics. Since the “Phoenix Leader Education Program (Hiroshima Initiative) for Renaissance from Radiation Disaster” was adopted by MEXT (Ministry of Education, Culture, Sports, Science and Technology) Japan in 2011, our graduate school and the Research Institute for Radiation Biology and Medicine taking a leading role have strived to raise interdisciplinary and comprehensive global leaders on the basis of the experiences and achievements at Hiroshima University for supporting the recovery from damages of the Atomic Bombing.

In addition to the practical education and the human resource development explained above, our graduate school encourages students to implement various distinctive studies in priority areas and integrated research works by taking advantages of benefits of the university education. We believe such initiatives are the very best methods to contribute to the future human society, strengthening community health cares: advanced medical technologies through developments of highly skilled professionals and medical science researches.

In 2014, Hiroshima University has been selected by MEXT for the “Top Global University Project”, as one of Japanese top 13 universities of 789, providing a world-class research and education. With the “Top Global University Project”, we aim to be a world-class comprehensive research university ranked among the world’s top 100 universities, continually producing global human resources and creating new forms of knowledge in the next 10 years. Our graduate school will lead this reform and internationalization.

In order to lead this reform, based on Hiroshima University’s founding principle: “a single unified university, free and pursuing peace” and five guiding principles, we, the Graduate School of Biomedical & Health Sciences forms an “Asian and worldwide center of education, research and practice in medicine, dentistry, pharmaceutical sciences and health sciences”, and nurtures “global professionals in these fields who pursue a pease” by promoting multidisciplinary education / research, interdisciplinary research and the development of advanced medical cares.

I would like everyone interested in mechanisms of human body / mind and their clinical applications to join us at Kasumi Campus, Hiroshima University. Let’s work together on the advanced research pursuing further development of medicine, dentistry, pharmaceutical sciences, health sciences and health / welfare!
Introduction of the Graduate School

Founding Spirits

Social needs caused by the rapid process of low birthrate and aging population are to overcome diseases such as cancer, cognitive impairment and circulatory illness which aged people are more likely to suffer from. It is important to take measures to innovate advanced medicine based on the development of life and medical sciences, and to maintain/promote human health from a new perspective.

In current medical diagnosis, treatment team to conduct medical care for patients in collaboration of staff with special fields is widely enforced. Accordingly, it has become an urgent necessity to foster highly specialized personnel (medical/dental doctors, dental hygienists, dental technicians, pharmacists, nurses, public health nurses, birthing assistants, physiotherapists and occupational therapists) capable of promoting highly-qualified diagnosis in a treatment team.

Kasumi Campus, Hiroshima University as one of the prominent medical campuses in Japan, is equipped with facilities to provide sustained education from undergraduate to graduate programs. Highly specialized personnel trained in those fields are required to deepen relations with other fields for the basis of treatment team as well as to develop education/research in conjunction with areas in health and medical sciences.

As a new institution making the best of human resources and functions at Kasumi Campus, Graduate Schools of Biomedical Sciences and Health Sciences were integrated into Graduate School of Biomedical & Health Sciences with 4 specific fields in medical and health sciences.

Principal purposes of the establishment are as follows:

- To train scientists who can take active roles in new or combined areas extended from the conventional education
- To activate research activities coping with scientific improvement and complexity
- To build more flexible educational/research systems such as development of major scientific projects aiming for creating new knowledge which used to be impossible with conventional two graduate schools; biomedical sciences and health sciences.
Introduction of the Graduate School

Hiroshima University
Kasumi Campus
Outline: Organization of Graduate School of Biomedical & Health Sciences

**Biomedical Sciences Major**  
Doctoral Course (abbreviated from now on as DC)  
(Admission capacity 97)  
- Program of Medicine (60)  
- Program of Dental Sciences (27)  
- Program of Pharmaceutical Sciences (3)  
- Program of Radiation Biology and Medicine (7)  
Degree: Doc. of Philosophy in Medical Science, Doc. of Philosophy in Dental Science, Doc. of Philosophy in Pharmaceutical Science, Doc. of Philosophy

**Oral Health Sciences Major**  
Master’s Course (abbreviated from now on as MC)  
(Admission capacity 12)  
- Clinical Course  
- Research Course  
Degree: Master of Oral Health Science

**Medicinal Sciences Major (MC)**  
(Admission capacity 18)  
Degree: Master of Medicinal Science

**Health Sciences Major (MC)**  
(Admission capacity 34)  
Degree: Master of Science in Nursing, Master of Health Science

**Medical and Dental Sciences Major (MC)**  
- Medical and Dental Sciences Course  
- Medical Physics Course  
- Public Health Course  
(Admission capacity 12)  
Degree: Master of Medical Science, Master of Dental Science, Master of Science, Master of Public Health (MPH)

= indicates the maximum number of students to be admitted.

**Guiding Principles**

Putting on a great value on the guiding principles of Hiroshima University (Pursuit of peace, Creation of new forms of knowledge, Nurturing of well-rounded human beings, Collaboration with the local, regional and international community and Continuous self-development), our basic principles are as follows;

- To promote fundamental research in medicine, dentistry, pharmaceutical sciences, health sciences
- To explore new areas of knowledge through exercising synthetic, scientific and advanced research
- To foster educators, scientists and highly specialized personnel who possess extensive knowledge and advanced skills
- To contribute to the development of human health and welfare, medicine, dentistry, pharmaceutical sciences and health sciences at a global level

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Hiroshima University • Graduate School of Biomedical & Health Sciences
Biomedical Sciences Major (Doctoral Course)

**Program of Medicine**

This program is to cultivate the following personnel:

- Educators and scholars with comprehensive knowledge and highly-specialized clinical competency on medicine who can take academic and international leadership roles
- Advanced medical professionals who can develop and apply the forefront of medical technologies in response to the demands of the times

MESSAGE

Vice-Dean for Education, Head of Biomedical Sciences Major and Program of Medicine, Graduate School of Biomedical & Health Sciences

Hideki Ohdan, M.D., Ph.D.

Program of Medicine offers to train students that contribute to the regional and international communities through education of advanced medical technology and humanities. The program has over 30 research laboratories from basic science to clinical medicine with excellent research achievements including cell therapy for radiation emergency medicine, regenerative medicine of cartilage regeneration, liver disease research, neuroscience and cancer research.

By cooperating with other three programs Biomedical Sciences Major such as Dental Sciences, Pharmaceutical Sciences and Radiation Biology and Medicine, the program provides exceptional opportunities for students to pursue advanced programs of study and research leading to their Doctoral degrees.

Through the program, advanced research capabilities and wide range of knowledge will be acquired to play an active part in interdisciplinary and international medical activities. The graduates will be wearing the ability to meet the needs of the times and be responsible for the development and application of advanced medical technology.
Program of Dental Sciences

This program is to cultivate the following personnel:
- Those who can conduct more advanced basic dentistry led by clinical integration and development in dental medicine
- Those who can variously expand the applied clinical experiences from local community to international society after developing highly advanced dental treatment

MESSAGE

Associate Dean for Research & Planning, Head of Program of Dental Sciences, Biomedical Sciences Major, Graduate School of Biomedical & Health Sciences

Masahiro Irifune, D.D.S., Ph.D.

The more people know about public health, the more they direct their attention to oral health. Such a trend is accelerated these days in the super-aging society like Japan. Taking this into account, the Dental Science Program offers education and training to graduate students from all over the nation and foreign countries. We strongly encourage overseas students to join our unique and substantial program. "Bio-Dentistry" is the core idea that our education and research ought to be. The idea is aimed at understanding of oral physiology and pathology based on contemporary molecular and cellular biology, providing the basis of evidence-based dental medicine. Our research interests include a wide field of oral sciences, such as oral cancer, development and regeneration of oral and maxillofacial tissues, and oral infectious diseases. Furthermore, the relationship between oral care and general health is notable. Through the programs, we are making every endeavor to train students to become leaders in research and national policy issues on the international stage of dentistry.
Biomedical Sciences Major (Doctoral Course)

Program of Pharmaceutical Sciences

This program is to cultivate the following personnel:

- Those who can make a contribution to the development of clinical pharmacy and pharmacotherapy for Japan through pharmaceutical education and research with profound knowledge on pharmacy
- Those who can take international leaderships in the fields of clinical pharmaceutical sciences

MESSAGE

Vice Dean for Research, Head of Program of Pharmaceutical Sciences of Biomedical Sciences Major and Medicinal Sciences Major, Graduate School of Biomedical & Health Sciences

Shigeru Ohta, Ph.D.

Program of Pharmaceutical Sciences is a discipline with a focus on basic and applied sciences in the field of clinical pharmaceutical sciences. The program has eight research laboratories and consists of faculty members with expertise in the areas of analytical chemistry, physiological chemistry, cellular and molecular biology, xenobiotic metabolism and molecular toxicology, pharmacotherapy, clinical pharmacotherapy, pathophysiology and therapeutics, and hospital pharmacy.

With this program, we aspire to educate and cultivate personnel who will become leading pharmacists and educators with research mind in the field of clinical pharmacy, and who will undertake research in the fields of life sciences and clinical pharmaceutical sciences for the development of innovative pharmacotherapy.

By cooperating with other three programs (medicine, dental sciences, radiation biology and medicine) in Biomedical Sciences Major, Program of Pharmaceutical Sciences provides exceptional opportunities for graduate students to pursue advanced programs of study and research leading to their Doctoral degrees.
Program of Radiation Biology and Medicine

This program is to cultivate the following personnel:

- Those who can conduct advanced and systematic education-research extending from basic research to clinical radiology concerning the effect of radiation on human body
- Those who can widely develop the acquired knowledge and technology from local community to international society

MESSAGE

Associate Dean for Education & Research, Head of Program of Radiation Biology and Medicine, Biomedical Sciences Major, Graduate School of Biomedical & Health Sciences

Satoshi Tashiro, M.D., Ph.D

As the university founded in the first city to suffer atomic bombing, Hiroshima University has over 60-year experience in medical practice for the A-bomb survivors, and has contributed to the biological and medical studies concerning the effect of radiation on human body. Recently, Japan experienced the Fukushima Daiichi Nuclear Plant disaster. Low levels of radiation exposure by the disaster has become a public concern together with those by medical exposure. In these situations, young scientists and physicians are expected to conduct comprehensive research extending from basic radiation biology to clinical radiology. The Program of Radiation Biology and Medicine aims to nurture the next generation personnel in this field. Hiroshima University recently established “Phoenix Leader Education Program for Renaissance from Radiation Disaster”. By collaborating with this, the Program of Radiation Biology and Medicine will also cultivate the personnel who can widely develop the acquired knowledge and technology from local community to international society.
Oral Health Sciences Major

**Master’s Course: Clinical Course / Research Course**

The master’s course aims to nurture the following personnel:
- Advanced medical professionals in oral health
- Educators and researchers capable of taking a leading role for the establishment and promotion of oral health science
- Educators and researchers capable of taking a leading role for the establishment and promotion of oral engineering

**Doctoral Course**

This course aims to nurture the following personnel:
- Internationally active specialists capable of developing and leading education / research on oral health science
- Educators and researchers (university and company) capable of building academic health promotion strategies of oral and whole body focused on health maintenance / improvement of the people

**MESSAGE**

Vice-Dean for International Affairs, Head of Oral Health Sciences Major, Graduate School of Biomedical & Health Sciences

Hiroki Nikawa, D.D.S., Ph.D.

Oral Health Sciences Major is waiting for the students who can contribute to the improvement of oral and general health at all life stages by their studies.

Master’s and Doctoral Courses of Oral Health Sciences Major were established in 2009 and 2011 respectively, after School of Oral Health Sciences was established in 2005 to promote dental professionals for both dental hygienists and dental technicians. Our major aims to give higher education to the people who work in the field of health and contribute to healthy long-lived life and oral health. In the Major, there are six departments, Public Oral Health, Maxillofacial Functional Development, Oral Health Management, Anatomy and Functional Restorations, Medical System and Biomaterial Engineering, and Oral Biology & Engineering. Faculty consists of various kinds of professionals such as dentists, dental hygienists, dental technicians, nurses, yoga teachers (school nurses) and engineers. We have so far developed a variety of studies as follows; probiotics for oral cavity, antimicrobial agent, stem cells, bone regeneration, implant materials, 3D modeling and imaging including CAD/CAM, oral care, oral function, and education. We welcome the students who have a passion to perform the studies for the people at all life stages. Please come to join us!!!
Medicinal Sciences Major

Master’s Course
This course aims to cultivate the following personnel:
• Those who can play leading roles in a wide variety of fields as pharmaceutical scientists and life-sciences researchers
• Educators and researchers who can contribute to the diffusion of pharmaceutical innovations
• Those who can take leading parts in the international society on medicinal-sciences fields

Doctoral Course
This course aims to cultivate the following personnel:
• Those who can make a contribution to the development of pharmaceutical sciences and life sciences in Japan through education / research of medicinal sciences with extensive knowledge and deep insight on medicinal sciences
• Those who can promote applied research based on pharmaceutical sciences and life sciences from the international viewpoint

MESSAGE

Vice-Dean for Research, Head of Medicinal Sciences Major and Program of Pharmaceutical Sciences of Biomedical Sciences Major, Graduate School of Biomedical & Health Sciences

Shigeru Ohta, Ph.D.

Medicinal Sciences is a discipline with a traditional focus on basic sciences with the broad goals of drug discovery and optimization. The major has six research laboratories and consists of faculty members with expertise in the areas of synthetic organic chemistry, pharmacognosy, functional molecular science, molecular microbiology and biotechnology, pharmaceutics and therapeutics, and pharmacology. We are committed to the idea that research and teaching are inseparable because research is the foundation of teaching. A high priority is placed on individualized training and mentoring of students. In particular, the unique combination of our size, our multidisciplinary focus, and the integration of the other three fields, medical, dental, and health sciences provides exceptional opportunities for graduate students to pursue highly innovative programs of study and research leading to their Master’s and Doctoral degrees. A distinguishing characteristic of the program is its diverse faculty who offers students broad training for careers in the pharmaceutical industry, academia, and governmental positions.
Health Sciences Major

Master’s Course
This course aims to train the following personnel:
• Researchers with a wide breadth of knowledge and advanced research capabilities on health sciences
• Researchers with comprehensive skills which cultivate and establish methods to support human health problems from physical, psychological and social of viewpoints
• Educators capable of bringing out students’ creative and future-oriented skills while fostering their problem-solving abilities
• Personnel capable of conducting advanced, innovative research in healthcare, medical care and welfare based on profound knowledge on bioethics and medical ethics
• Personnel capable of providing and sharing information on advanced healthcare, medical care and welfare while acting in major roles in global fields

Doctoral Course
This course aims to train the following personnel:
• Educators and researchers in nursing capable of developing new theories and practical methods for nursing science
• Educators and researchers in physical therapy and occupational therapy possessing outstanding research skills with highly-specialized knowledge and capable of building a new paradigm
• Educators and researchers with high-level research competence and a global view capable of promoting new specialized research in healthcare, medical care and welfare

MESSAGE
Vice-Dean for Planning, Head of Health Sciences Major,
Graduate School of Biomedical & Health Sciences

Tsuyoshi Kataoka, MD., Ph. D.

Nursing and rehabilitation sciences that respond to the requirements of longevity society: A leading university in health science that has produced many university teaching staff
Hiroshima University is the first university in Japan to establish 4-year university courses in physical and occupational therapies. It has additionally pioneered nursing sciences in Western Japan. Since its foundation in 1992, Hiroshima University has been a leader in health sciences education and research in Japan. The area of research carried out in Health Sciences Major covers a wide range of topics. Our nursing science encompasses from pediatric nursing to gerontological nursing. It also covers community nursing at home and at school. School nursing is a specific area developed in Japan. We also have Advanced Practice Nursing courses (CNS, Clinical Nurse Specialist Course) in Adult Chronic Care Nursing and Cancer Nursing (Master’s course). Moreover our research expertise extends to health promotion and health informatics. Our research areas in rehabilitation science include sports rehabilitation, psychosocial rehabilitation and regenerative medicine, in addition to other areas concerning biomechanics, physical functions, behavior science and community-based science. Related problems are also studied in an interdisciplinary and systematic approach from anatomical and physiological viewpoints. You will be able to find your particular research interests in these wide areas of research. We are very enthusiastic and supportive of the international academic exchange through the International Network of Universities (INU). We have many graduate students who represent a large number of countries, many from overseas. Some of our graduate are currently working at universities of their home countries. Why don’t you study health sciences in Hiroshima, a city aspiring for international peace? we would be delighted to have you join us!
Medical and Dental Sciences Course
This course aims to train the following personnel:
- Those capable of contributing to basic and applied research on inter-disciplinary areas of medicine, dentistry at educational and research institutions
- Those engaged in R&D and medical fields at companies concerned with biotechnology, medical care and pharmacy

Medical Physics Course
This course aims to train the following personnel:
- Those capable of playing major parts as highly-specialized professionals in medical physics
- Educators and researchers pursuing the solid foundation and diffusion of medical physics
- Those capable of taking leading roles in the international society in medical-physics field

Public Health Course
This course aims to train the following personnel:
- Those capable of performing epidemiological research for solving health care problems
- Those capable of implementing medical care based on Evidence Based Medicine (EBM)
- Health care workers, public health administration staff and clinical researchers engaged in clinical trials

MESSAGE

Norio Sakai, M.D., Ph.D.

Associate Dean for International Affairs & Entrance Examinations,
Head of Medical and Dental Sciences Major, Graduate School of Biomedical & Health Sciences

In the Medical and Dental Science Major, we provide 2-year master courses in which graduate students are trained as professionals capable of contributing to biomedical science, medical physics and public health. The programs are designed primarily due to emergent and extensive demands from medical institutions and healthcare industries. We welcome students from a wide range of scientific fields such as engineering, natural science, and even social science as well, because a broad spectrum of issues has emerged recently in medicine and dentistry. This is well exemplified by the fact that, for instance, technological advances in genetic diagnosis require cutting-edge engineering research for future tailor-made, personalized medicine. Importantly the idea of personalized medical services further creates a new ethical issue that should be considered from the point of public healthcare and human rights. Similar complicated problems are also associated with other new medical technologies such as regenerative medicine, genomic drug discovery, and radiation therapy. We encourage young students to challenge for developing a new paradigm in medicine and dentistry.
Laboratories & Research Topics

Medical Sciences
- Professors supervising in the Program of Medicine, Biomedical Sciences Major
- Professors supervising in the Medical and Dental Sciences Major

Anatomy and Developmental Biology
Professor Hirohiko Aoyama
Research Topics
Somite, Vertebrates, Axial skeleton, Morphogenesis, Experimental morphology, Evolution

Neurobiology
Professor Hidenori Aizawa
Research Topics
Depression, Dopamine, Serotonin, Habenula, Model animals

Cardiovascular Physiology and Medicine
Professor Masao Yoshizumi
Research Topics
Arteriosclerosis, Cardiovascular development, Biomedical engineering, DNA damage

Neurophysiology
Professor Kouichi Hashimoto
Research Topics
Neuron, Synapse, Neuronal circuitry

Biochemistry
Professor Kazunori Imaizumi
Research Topics
Endoplasmic reticulum stress, Unfolded protein response, Stress response, Biochemistry, Cell biology, Molecular biology, Neurodegenerative disorder, Skeletal diseases

Biomedical Chemistry
Professor Tomeihiro Asano
Research Topics
Metabolism, Inflammation, Insulin action, Diabetes mellitus

Molecular and Pharmacological Neuroscience
Professor Norio Sakai
Research Topics
Protein kinase C, Spinocerebellar atrophy, Parkinson disease, Elongation of neural processes, Survival of neurons, Ischemic brain disease, Microglia, Serotonin transporter

Molecular Pathology
Professor Wataru Yasui
Research Topics
Morpho-pathological genomics, Molecular diagnosis, Systemic analysis of genome, Transcriptome and epigenome, Gastrointestinal cancer, Urological cancer, Novel diagnostic and therapeutic target, Non-coding RNA, Cancer stem cell

Pathology
Professor Yukio Takeda
Research Topics
Human cancer, Pathology, Environmental carcinogenesis, Asbestosis, Mesothelioma, Lung cancer, Pathological diagnosis, Molecular target therapy

Epidemiology Infectious Disease Control and Prevention
Professor Junko Tanaka
Research Topics
Epidemiology, Disease control and prevention, Biostatistics, Viral Hepatitis, Cancer screening, Global epidemiology

Forensic Medicine
Professor Masatake Nagao
Research Topics
Clinical forensic medicine, Clinical toxicology, Forensic pathology

Molecular and Internal Medicine
Professor Noboru Hattori
Research Topics
Respiratory medicine, TP53-1, KL-6, sRNA inhalation therapy, COPD, Asthma, Cohort study for former workers of Ohkuno-ima poison gas factory Endocrinology and Diabetic medicine: The Hawaii-Los Angeles-Hiroshima study, Primary aldosteronism, Brown fat, Gut microbiota

Clinical Neuroscience and Therapeutics
Professor Hirofumi Maruyama
Research Topics
Cerebrovascular disease, Alzheimer disease, neurodegenerative disease, neurosonology, biomarker

Public Health and Health Policy
Professor Akira Eboshida
Research Topics
Health policy, Community health, Environmental health, Global health, Infectious diseases, Health promotion

Forensic Medicine
Professor Masatake Nagao
Research Topics
Clinical forensic medicine, Clinical toxicology, Forensic pathology

Neuroimmunology
Professor Masanobu Kanno
Research Topics
Tumoric T cell development, Epigenetics, Innate immunity, DAMPs, Allergy

Gastroenterology and Metabolism
Professor Kazuaki Chayama
Research Topics
Gastroenterological cancers, Inflammatory bowel disease, Helicobacter pylori infection, Hepatitis virus infection, Polymorphism of human genome, Biomarker for gastroenterological diseases

Pediatrics
Professor Masao Kobayashi
Research Topics
Primary immunodeficiency, Severe congenital neutropenia (SCN), Chronic mucocutaneous candidiasis disease (CMCD), Mendelian susceptibility to mycobacterial diseases (MSMD), STAT1, RORV1, Pediatric oncology, Neonatal hematology, Exome sequencing, Pediatric nervous system disorders, Developmental disorders

Surgery
Professor Taijiro Sueda
Research Topics
Atrial fibrillation, Spinal cord ischemia, Pancreato-biliary cancer, Perioperative chemotherapy, Circulating cell-free DNA, Inflammatory bowel disease, Neuroblastoma, Hepatoblastoma, Wilms’ tumor

Gastroenterological and Transplant Surgery
Professor Hideki Ohdan
Research Topics
Gastric cancer, Colorectal cancer, Hepatic cancer, Pancreatic cancer, Organ transplant, Cancer immunology, Transplant immunology, Chemotherapy, Minimally invasive surgery, Medical engineering, Hepatitis, Organ preservation

Neurosurgery
Professor Kaoru Kurisu
Research Topics
Central nervous system regeneration, Mesenchymal stem cells, Microgravity environment, Magnetoencephalography, Pediatric brain tumors, Tumors, micro-RNAs, Spinal cord disorders, Intraoperative neurophysiological monitoring

Orthopaedic Surgery
Professor Nobuo Adachi
Research Topics
Regenerative medicine, Cartilage repair, Ligament reconstruction, Sports injury
Dermatology

Prof. Michihiro Hide

Research Topics
Urticaria, Atopic dermatitis, Food allergy, Blood coagulation factors, Sweat antigen, Malassezia, Surface plasmon resonance, Skin microbiota

Urology

Prof. Akio Matsubara

Research Topics
Urogenital cancer, Regeneration of urogenital organs, Minimally invasive surgery

Ophthalmology and Visual Science

Prof. Yoshiaki Kiuchi

Research Topics
Scarring in filter bleb, Retinal ganglion cell death, PDT (photodynamic therapy), Tube shunt surgery, Neovascular glaucoma

Professor Research Topics
Yoshiaki Kiuchi

Research Topics
Scarring in filter bleb, Retinal ganglion cell death, PDT (photodynamic therapy), Tube shunt surgery, Neovascular glaucoma

General Medicine

Prof. Susumu Tazuma

Research Topics
Metabolic syndrome, Liver fibrosis, Cholestatic diseases, Probiotics, Dyslipidemias, NAFLD, Medical education, FUO

Medical Informatics and Systems Management

Prof. To be decided

Research Topics
To be decided

Endoscopy and Medicine

Prof. Shinji Tanaka

Research Topics
Endoscopy, Gastroenterology, Esophageal cancer, Gastric cancer, Colorectal cancer, Inflammatory bowel disease (IBD), Small intestine

Clinical Oncology

Prof. Kazuhiko Sugiyama

Research Topics
Phase 2 & 3 clinical trial, Ambulatory chemotherapeutics, Molecular target drug, Neuro-oncology, Brain tumor pathology

Life Science

Prof. Eiso Hiyama

Research Topics
Pediatric oncology, Oncology science, Telomere and telomerase, Regenerative medicine, Infectious disease

Life Science

Prof. Yusuke Sotomaru

Research Topics
Reproductive engineering technique, Experimental animal, Genetically-modified animal, Clone technology

Natural Science Center for Basic Research and Development

Eiso Hiyama

Research Topics
Pediatric oncology, Oncology science, Telomere and telomerase, Regenerative medicine, Infectious disease

Hiroaki Kimura

Research Topics
Clinical motion analysis, Analysis of rotatory instability of knee joint, Surgical rehabilitation of autologous cartilage transplantation, Exercise therapy for patients with amputation or heart failure, Surgical rehabilitation of amputation
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<td>Artificial Joints and Biomaterials</td>
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<td>Stem Cell Biology and Medicine</td>
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<tr>
<td>Dental Anesthesiology</td>
<td>Professor</td>
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Global Dental Medicine and Molecular Oncology

Professor Makiko Fujii

Research Topics
- Basic research about cancer
- Oral cancer
- Mesothelioma
- Intracellular signal transduction
- Heavy ion radiotherapy
- Molecular target therapy
- Social medicine
- Dual language education
- E-learning

Hospital

Dental Education (Advanced General Dentistry)

Professor Hirohiki Kawaguchi

Research Topics
- Dentistry clinical training course
- Dental education
- Health communication

Special Care Dentistry

Professor To be decided

Research Topics

Pharmaceutical & Medicinal Sciences

Professor
- Professors supervising in the Program of Pharmacological Sciences, Biomedical Sciences Major
- Professors supervising in DC of the Medicinal Sciences Major
(Note) MC students in the Medicinal Sciences Major can be supervised by all of the following professors.

Physiological Chemistry

Professor To be decided

Research Topics

Nucleic Acids Biochemistry

Professor Hiroyuki Kamiya

Research Topics
- Mutagenesis
- Carcinogenesis
- DNA damage
- DNA repair
- Gene therapy
- Transgene expression
- Genome correction
- Genome editing

Pharmacology

Professor Norimitsu Morioka

Research Topics
- Chronic pain
- Depression
- Neuropathic pain
- Neuropsychiatric disorders
- Microglia
- Astrocytes
- Central nervous system

Clinical Pharmacotherapy

Professor Norifumi Morikawa

Research Topics
- Proper use of medicines
- Cultivation of clinical pharmacists
- Micro TDM
- Pharmacokinetic-pharmacodynamic analysis
- Development of new chemotherapy

Pharmaceutics and Therapeutics

Professor Mikihisa Takano

Research Topics
- Drug metabolism and disposition
- Membrane transport
- Transporter
- Endocytosis receptor
- Drug toxicity
- Epithelial-mesenchymal transition

Microbiology

Professor Teruo Kuroda

Research Topics
- Multidrug resistance
- Antiseptic resistance
- Biosynthesis of antibiotics
- Microbial useful enzymes for the industrial application

Pharmacology

Professor Norimitsu Morioka

Research Topics
- Chronic pain
- Depression
- Neuropathic pain
- Neuropsychiatric disorders
- Microglia
- Astrocytes
- Central nervous system

Pharmacognosy

Professor Katsuyoshi Matsunami

Research Topics
- Natural products chemistry
- Pharmacognosy
- Medicinal herb
- Model organism

Pharmacognosy

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Research Topics
- Natural products chemistry
- Pharmacognosy
- Medicinal herb
- Model organism

Microbiology

Professor Teruo Kuroda

Research Topics
- Multidrug resistance
- Antiseptic resistance
- Biosynthesis of antibiotics
- Microbial useful enzymes for the industrial application

Stem Cell Biology and Medicine

Professor Masanori Sugiyama

Research Topics
- Plant-derived lactic acid bacteria
- Metabolic syndrome
- Probiotics
- Functional foods
- Clinical trial
- Meta genome analysis
- Intestinal bacterial Flora
- Neuro-degenerative diseases
- Digestive organ diseases
- Koji-kin
- Aspergillus oryzae

Functional Molecular Sciences

Professor Tohru Koike

Research Topics
- Focused proteomics
- Phos-tag
- Thio-tag
- Zinc complex
- Kinase profiling

Cellular Biology

Professor Satoshi Tashiro

Research Topics
- Ionizing radiation
- Chromosome abnormalities
- DNA repair
- Higher order nuclear architectures

Cellular and Molecular Biology

Professor Hidetoshi Tahara

Research Topics
- microRNA
- Telomere
- Extracellular Vesicles
- Exosome
- Nucleic Acid Therapeutics
- Aging
- Cancer

Synthetic Organic Chemistry

Professor Takuya Kumamoto

Research Topics
- Total synthesis
- Asymmetric synthesis
- Medicinal chemistry

Xenobiotic Metabolism and Molecular Toxicology

Professor Shigeru Ohta

Research Topics
- Environmental chemicals
- Neurotoxicity
- Parkinson’s disease
- Toxicological assessment
- Humanized liver mice
- Drug metabolism
- Pharmacokinetics
- Aldehyde oxidase

Radiation Biology and Medical Sciences

Professor
- Professors supervising in the Program of Radiation Biology and Medicine, Biomedical Sciences Major
- Professors supervising in the Medical and Dental Sciences Major

Collaborative Research Laboratory

Pharmaceutical Services

Professor
- Proper use of drugs
- Therapeutic drug monitoring
- Extravasation
- Food allergy
- Drug allergy
- Drug information
- Safety of medicine

Special Care Dentistry

Professor To be decided

Research Topics

Endoplasmic reticulum stress
- Autophagy
- Drug discovery
- Neurodegenerative disease
- Metabolic disease
- Alzheimer’s disease
- Diabetes
- Obesity

Kampo Medicine

Professor Norio Iizuka

Research Topics
- Kampo
- Kampo education
- Computer science

Shigeru Ohta

Environmental chemicals, Neurotoxicity, Parkinson’s disease, Toxicological assessment, Humanized liver mice, Drug metabolism and pharmacokinetics, Aldehyde oxidase

Hidetoshi Tahara

Cellular and Molecular Biology

Professor
- microRNA
- Telomere
- Extracellular Vesicles
- Exosome
- Nucleic Acid Therapeutics
- Aging
- Cancer

Synthetic Organic Chemistry

Professor
- Total synthesis
- Asymmetric synthesis
- Medicinal chemistry

Global Dental Medicine and Molecular Oncology

Professor
- Oral cancer
- Mesothelioma
- Intracellular signal transduction
- Heavy ion radiotherapy
- Molecular target therapy
- Social medicine
- Dual language education
- E-learning

Drug metabolism and disposition
- Membrane transport
- Transporter
- Endocytosis receptor
- Drug toxicity
- Epithelial-mesenchymal transition

Microbiology

Professor
- Multidrug resistance
- Antiseptic resistance
- Biosynthesis of antibiotics
- Microbial useful enzymes for the industrial application

Pharmacology

Professor
- Chronic pain
- Depression
- Neuropathic pain
- Neuropsychiatric disorders
- Microglia
- Astrocytes
- Central nervous system

Pharmacology

Professor
- Proper use of medicines
- Cultivation of clinical pharmacists
- Micro TDM
- Pharmacokinetic-pharmacodynamic analysis
- Development of new chemotherapy

Microbiology

Professor
- Multidrug resistance
- Antiseptic resistance
- Biosynthesis of antibiotics
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Endoplasmic reticulum stress
- Autophagy
- Drug discovery
- Neurodegenerative disease
- Metabolic disease
- Alzheimer’s disease
- Diabetes
- Obesity

Kampo Medicine

Professor
- Kampo
- Kampo education
- Computer science
<table>
<thead>
<tr>
<th>Research Topic</th>
<th>Professor</th>
<th>Research Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health Informatics</td>
<td>Masayuki Kakehashi</td>
<td>Health, Mathematical model, Infectious disease, Cancer screening, Stroke, Heart attack, Weather condition, Health statistics, Health care system</td>
</tr>
<tr>
<td>Stem Cell Biology</td>
<td>Nobuyuki Hirohashi</td>
<td>Molecular mechanisms of hypoxic response, Genomic analyses, Nuclear/radiation disaster medicine</td>
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<tr>
<td>Oral Health Management</td>
<td>Toshinobu Takemoto</td>
<td>Oral health science, Dental hygienists' education, Infection control</td>
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<tr>
<td>Experimental Oncology</td>
<td>Toshiya Inaba</td>
<td>Molecular leukemogenesis, Epigenetic dysregulation in tumor cells</td>
</tr>
<tr>
<td>Oral Health Sciences</td>
<td>Masaru Sugiyama</td>
<td>Oral health, Oral function, School health</td>
</tr>
<tr>
<td>Molecular Oncology</td>
<td>Hirosi Yasuda</td>
<td>Radiological protection, Dosimetry, Radiation measurement, Health risk assessment, Fukushima Daiichi accident, UNSCEAR</td>
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<tr>
<td>Molecular Radiobiology</td>
<td>Hideshi Kawakami</td>
<td>ALS, Neurological disease, Genetics, IPS cells, Next-generation sequencing</td>
</tr>
<tr>
<td>Surgical Oncology</td>
<td>Morihito Okada</td>
<td>Surgical oncology, Esophageal cancer, Lung cancer, Breast cancer, Mesothelioma, Surgery, Endoscopic surgery, Thoracoscopic surgery, Chemotherapy, Chemoradiotherapy, Immunotherapy, Oncogenes, Gene therapy, PET, Biomarker, Liquid biopsy</td>
</tr>
<tr>
<td>Genetics and Cell Biology</td>
<td>Shinya Matsuura</td>
<td>Medical genetics, Chromosome maintenance, Radiosensitivity, Primary cilia, Genome editing, Primary microcephaly</td>
</tr>
<tr>
<td>Human Genetics</td>
<td>Yukihito Higashi</td>
<td>Angiogenesis, Regenerative medicine, Endothelial function, Rho-associated kinase</td>
</tr>
<tr>
<td>Epidemiology</td>
<td>Hideshi Kawakami</td>
<td>ALS, Neurological disease, Genetics, IPS cells, Next-generation sequencing</td>
</tr>
<tr>
<td>Environmetrics and Biometrics</td>
<td>To be decided</td>
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</tr>
<tr>
<td>Maxillofacial Functional Development</td>
<td>Toshio Amano</td>
<td>Growth and development, Oral function, Disability, Oral care</td>
</tr>
<tr>
<td>Anatomy and Functional Restorations</td>
<td>Takahiro Satoda</td>
<td>Embryology, Functional Anatomy, Model, Zirconia, Dental materials</td>
</tr>
<tr>
<td>Medical System and Biomaterial Engineering</td>
<td>Takeshi Murayama</td>
<td>Computerized dentistry, Additive manufacturing, Manufacturing systems, Sports dentistry, Musical dentistry</td>
</tr>
<tr>
<td>Oral Biology &amp; Engineering</td>
<td>Hiroki Nikawa</td>
<td>Immobilizing antimicrobial and antiviral agents, Oral moisturizing agents, Probiotics for oral cavity, Implant materials, Texture analysis for food</td>
</tr>
<tr>
<td>Radiation Biophysics</td>
<td>To be decided</td>
<td></td>
</tr>
<tr>
<td>Oral Health Sciences</td>
<td>To be decided</td>
<td></td>
</tr>
<tr>
<td>Health Sciences</td>
<td>To be decided</td>
<td></td>
</tr>
</tbody>
</table>
Fundamental Nursing
Professor Sanoe Oriyama
Research Topics
Nursing labor management, Nursing education, Nursing technology, Nursing management, Nursing ethics, Health education, Disease control

Gerontological and Oncology Nursing
Professor Mika Miyashita
Research Topics
Cancer survivorship, Breast cancer, Cancer and cancer therapy-related cognitive impairment, End-of-life care, Caregivers of elderly persons with dementia, Social support

Midwifery and Maternal-Child Nursing
Professor Mitsuko Ohira
Research Topics
Becoming a parent, Prevention for maltreatment during perinatal period, Reproductive health nursing, Breastfeeding, Human milk expression, Neonates, NICU, Improving education for midwifery

Sports Rehabilitation
Professor Yuko Urabe
Research Topics
Sports injury prevention, Sports physical therapy, Knee injury prevention, Winter sports medicine, Health promotion for elderly people, Disaster medicine, Disabled sports

Chronic Care & Family Nursing
Professor Michiko Moriyama
Research Topics
Population Health Management, Palliative care, Integrated community health care system, Chronic care, Disease management, Family nursing, Health service delivery system

Anatomy and Histology
Professor To be decided
Research Topics

Biomechanics
Professor Koichi Shinkoda
Research Topics
Biomechanics, Motion analysis, Postural control, Motor control, Falls, Sleep and physical function

Physical Analysis and Therapeutic Sciences
Professor Hironobu Hamada
Research Topics
Chronic pulmonary disease, Elderly, Physical function, Physical activity, Cough peak flow, Pulmonary rehabilitation

Bio-Environmental Adaptation Sciences
Professor Hideaki Hanaoka
Research Topics

Home Health Care and Public Health Nursing
Professor Hisae Nakatani
Research Topics
Public health nursing, Home health care nursing, Long-term care insurance, Family nursing in community, Community health care systems

School and Public Health Nursing
Professor Hiromi Kawasaki
Research Topics
Home care, Health education, Data analysis, Children, Student, Resident, Regional collaboration, Resident’s activity

Integrative Physiology
Professor Kanji Matsukawa
Research Topics
Autonomic control of the cardiovascular function during exercise, Searching neural circuits responsible for cerebral command, Searching sympathetic vasodilator nerve to human muscle, Understanding of cortical and subcortical motor control, Relationship between exercise and cognitive function, Exercise and autonomic nerve activity, Evidenced-based rehabilitation using motor imagery

Human Behavior Science of Occupational Therapy
Professor Hideki Miyaguchi
Research Topics
Developmental coordination disorder, Rehabilitation for patients with parkinson's disease, Neuro dance, Risk communication, Rehabilitation for patients with higher brain disfunction

Sensorimotor Neuroscience
Professor Hikari Kimimoto
Research Topics
Clinical neurophysiology, Non-invasive brain stimulation, Evoked potentials, Motor control, Somatosensory, Precise hand movement, Occupational therapy, Cancer evaluation and assessment of rehabilitation, Comprehensive community care system, Community rehabilitation

Psychosocial Rehabilitation
Professor Hitoshi Okamura
Research Topics
Psychosocial, Cancer, Older adults, Dementia, Rehabilitation

Analysis and Control of Upper Extremity Function
Professor Toru Sunagawa
Research Topics
Upper extremity dysfunctions, Hand surgery, Rehabilitation of the hand, Brain functions related to upper extremity, Motion analysis

Gerontological and Community-Based Occupational Therapy
Professor Hideki Hanaoka
Research Topics
Elderly people, Quality of life, Reminiscence, Dementia, Prevention

Hiroshima University
Graduate School of Biomedical & Health Sciences
Access to Kasumi Campus

**From Hiroshima Station to Kasumi Campus**

Please take Hiroden Bus from Hiroshima Station to the University Hospital and get off at the last stop. It should take approximately 20 minutes.

Graduate School of Biomedical & Health Sciences website:
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Profiles of Faculty and Research Scholars:
http://seeds.office.hiroshima-u.ac.jp/search/

Admissions Guide:
https://www.hiroshima-u.ac.jp/en/nyugaku/sembatsu
https://www.hiroshima-u.ac.jp/en/international/admissions/admission_guide

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E-mail: kasumi-kokusai@office.hiroshima-u.ac.jp