HIROSHIMA UNIVERSITY

# PROSPECTUS | 2019-2020

# UNIVERSITY OF WORLD-WIDE REPUTE AND SPLENDOR FOR YEARS INTO THE FUTURE

In 2019, Hiroshima University celebrated the 70th anniversary of its birth amid the ashes of the atomic-bombed city. Marking this milestone, the University has commenced a full-range graduate school reform, starting with the establishment of the Graduate School of Integrated Sciences for Life and the Graduate School of Biomedical and Health Sciences. Hiroshima University continues its progress toward the goal of becoming a comprehensive research university ranked among the top 100 universities worldwide.

TOP GLOBAL UNIVERSITY JAPAN
TOP Type

RU
HIROSHIMA UNIVERSITY

**Mitsuo Ochi**
President
Hiroshima University

## Hiroshima University Guiding Principles

We embrace the University's founding principle of "a single unified university, free and pursuing peace," striving to fulfill our missions as a national university under five guiding principles.


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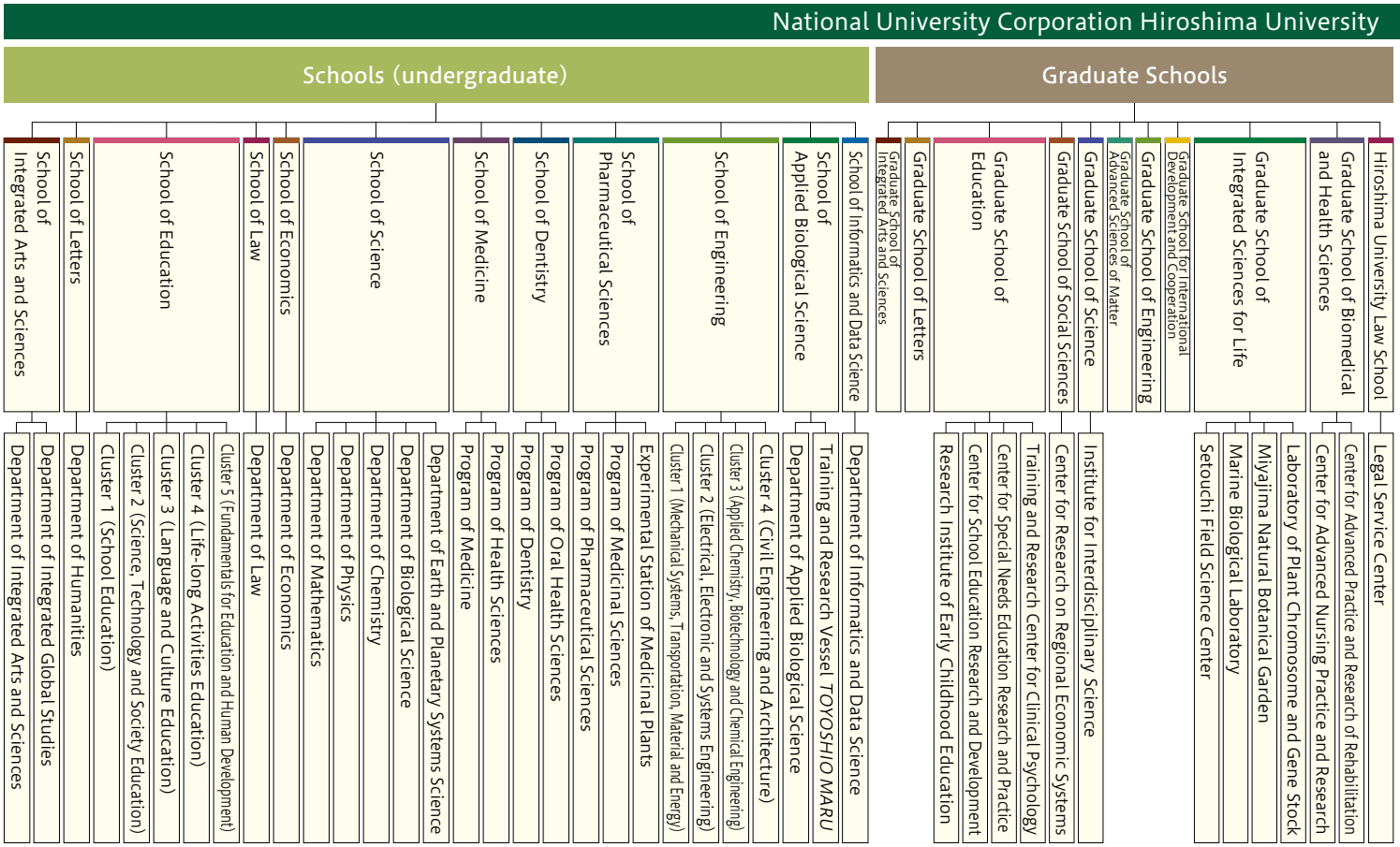
# AN OVERVIEW OF HIROSHIMA UNIVERSITY

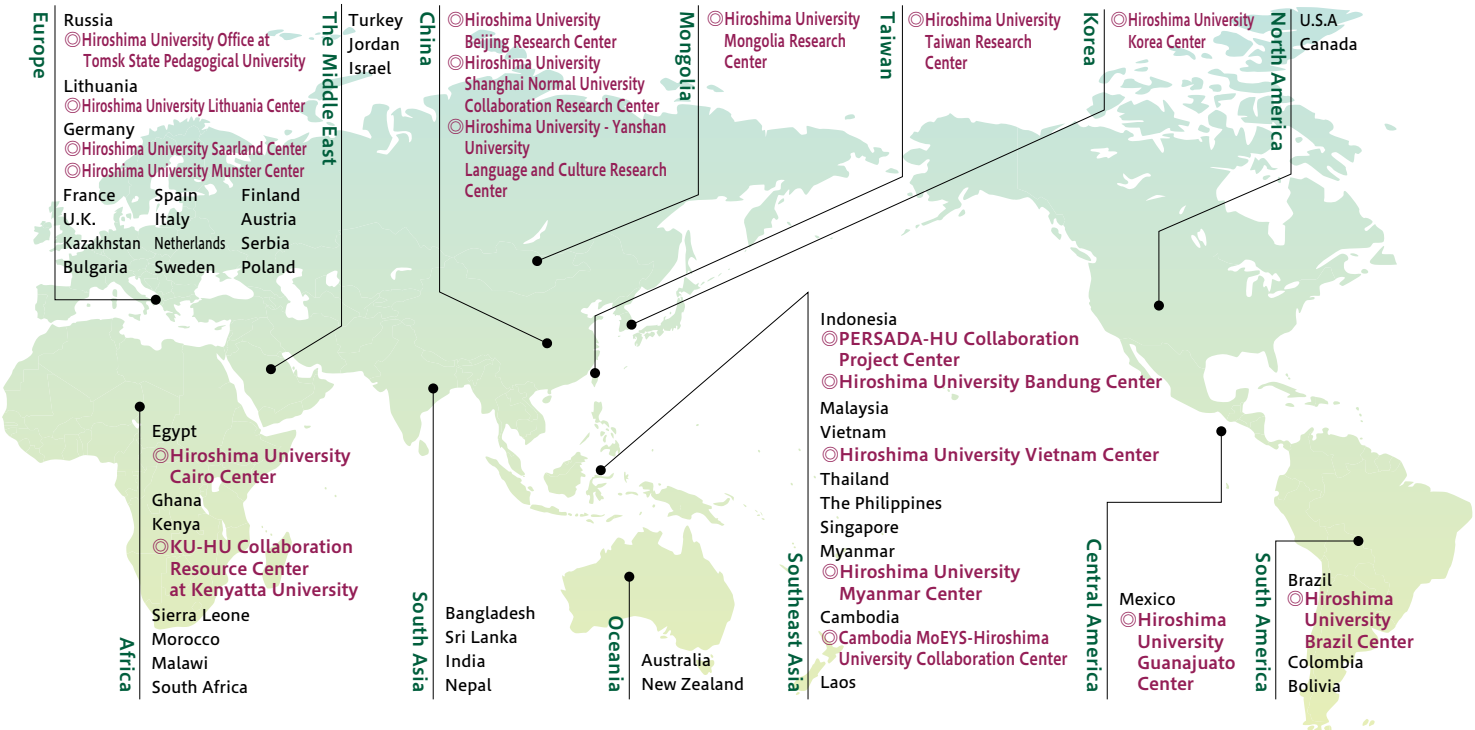
## Organization for Education and Research (as of April 1, 2019)




## Overseas Network and Bases (as of May 10, 2019)

Hiroshima University has international exchange agreements at university-level in 52 countries/regions, as well as at faculty-level in 52 countries/regions. The overseas bases are in 15 countries/regions: China, Taiwan, Russia, Egypt, Kenya, Brazil, Vietnam, Indonesia, Korea, Myanmar, Mexico, Cambodia, Lithuania, Germany and Mongolia.

*The university-level international exchange agreements have been concluded in the countries/regions listed on the map.



Embodying its founding principle of “a single unified university, free and pursuing peace,” Hiroshima University is one of the largest comprehensive research universities in Japan. Today, HU is making steady progress as a global university, taking on worldwide challenges and strengthening its global educational network by signing international exchange agreements with universities around the world and opening overseas bases at strategic locations.

- Advanced Course
  - Special Course of Special Needs Education
- Attached Research Institute
  - Research Institute for Radiation Biology and Medicine
    - Division of Radiation Information Registry
- Hospital
  - Hiroshima University Hospital
    - Hiroshima University Dental Clinic
- Libraries
  - Central Library
  - East Library
  - West Library
  - Kasumi Library
  - Higashi-Senda Library
- Headquarters for Education
- National Joint Usage Facilities
  - Hiroshima Synchrotron Radiation Center
- Joint Usage Facilities for National Universities in the Chugoku/Shikoku Area
  - Saijo Seminar House
- Joint Education and Research Facilities on Campus
  - Research Institute for Nanodevice and Bio Systems
  - Research Institute for Higher Education
  - Information Media Center
  - Natural Science Center for Basic Research and Development
  - Morito Institute of Global Higher Education
  - Center for Collaborative Research & Community Cooperation
  - Center for the Study of International Cooperation in Education
  - Health Service Center
  - The Center for Peace
  - Environmental Research and Management Center
  - Hiroshima University Museum
  - Beijing Research Center
  - Hiroshima Astrophysical Science Center
  - Institute for Foreign Language Research and Education
  - Hiroshima University Archives
  - Institute for Sport Sciences
  - HiSIM Research Center
  - The Center for Contemporary India Studies at Hiroshima University
  - Research Center for Diversity and Inclusion
  - Amphibian Research Center
  - Translational Research Center
  - Resilience Research Center
  - Brain, Mind and KANSEI Sciences Research Center
  - Genome Editing Innovation Center
  - Digital Monozukuri (Manufacturing) Education and Research Center
- Joint Usage Facility on Campus
  - Harassment Consultation Office
- Schools (primary and secondary)

### Research Institute for Nanodevice and Bio Systems

Serving as a network-type collaborative research base for biomedical engineering certified by the Ministry of Education, Culture, Sports, Science and Technology of Japan, it is working to develop portable cancer diagnosis devices and other medical electronic devices.

### Hiroshima Astrophysical Science Center

Conducts advanced high-energy astrophysical research, mainly through observations in collaboration with research teams of various countries around the world, using the Kanata Telescope, a 1.5-meter optical-infrared telescope, one of the largest in Japan.

Inter-university agreement signed with St Petersburg University, Russia (April 2019)

Hiroshima University Munster Center opened (May 2019)

## International Exchange Agreements

| | | |
|---|---|---|
| Inter-university | 52 countries and regions | 314 organizations | 347 agreements |
| Inter-faculty | 52 countries and regions | 354 organizations | 391 agreements |

## University Offices Outside Hiroshima Prefecture

The Tokyo Office supports teachers and staffs at Hiroshima University in their activities in Tokyo area and students in their job-hunting activities. The Osaka and Fukuoka Offices provide consultation services on college admission.

### ●Tokyo Office

No. 409, Campus Innovation Center
3-3-6 Shibaura, Minato-ku, Tokyo

### ●Office of Admissions, Osaka Office

No. 503, Osaka University Nakanoshima Center 4-3-53 Nakanoshima, Kita-ku, Osaka City, Osaka

### ●Office of Admissions, Fukuoka Office

No. 123, Urban Net Hakata Bldg., 4/F
2-5-1 Hakata-eki Higashi, Fukuoka City, Fukuoka

## Schools (primary and secondary)

The basic principle and role of the affiliated schools of Hiroshima University is to support the sound growth of people both within and outside of those schools. Its predecessors include Hiroshima Higher Normal School and Hiroshima Normal School. They provide pupils and students with opportunities to learn a little about university education, aiming to help children develop into adults who can fulfill diverse roles. Those schools also serve as places for teaching practice where university students can become high-quality teachers.

### ●Hiroshima City

Hiroshima University Elementary School

Hiroshima University Junior High School
Hiroshima University Senior High School

Hiroshima University Elementary School, Shinonome

Hiroshima University Junior High School, Shinonome

### ●Higashi Hiroshima City

Hiroshima University Kindergarten

### ●Mihara City

Hiroshima University Kindergarten, Mihara

Hiroshima University Elementary School, Mihara

### ●Fukuyama City

Hiroshima University Junior High School, Fukuyama
Hiroshima University Senior High School, Fukuyama

Hiroshima University Junior High School, Mihara

FEATURE: SPECIAL TALK

# Wake up, Y

**In May 2019, Dr. Kenichiro Mogi, a neuroscientist, visited the Higashi-Senda Campus around the World." Dr. Mogi gave a passionate 90-minute talk before an audience of Mitsuo Ochi about the present and future of scientific research in Japan, expectations for**

Neuroscientist

## Dr. Kenichiro Mogi

PROFILE

Born in 1962 in Tokyo, Dr. Mogi obtained a bachelor's degree from the Faculty of Science at the University of Tokyo, followed by another bachelor's degree from the Faculty of Law before obtaining his Ph.D. in Physics from the Graduate School of Physics of the same university. He has been a researcher within the International Frontier Research System at RIKEN and at the Physiological Laboratory of Cambridge University, and a senior researcher at Sony Computer Science Laboratories, Inc. He received the Fourth Hideo Kobayashi Award for his book *No to kaso (The Brain and Imagination)* in 2005 and the 12th Takeo Kuwabara Academic Award for *Ima Kokokara Subete no Basho e (From Here to Everywhere)* in 2009.

## My childhood dream was to be an entomologist

**Ochi**: Dr. Mogi, you were born in Tokyo and grew up in Kasukabe City, Saitama Prefecture. What were you like as a child?

**Mogi:** During the six years of elementary school, I was absorbed in my collection of butterflies. My childhood dream was to be an entomologist. But after reading a biography of Einstein in the fifth grade, I began to think, "Huh, this is more fun." I read Blue Backs [popular paperback series on natural science] titles one after another, about the theory of relativity, quantum mechanics, and so on and so forth.

**Ochi**: I see you were quite fascinated.

**Mogi:** Very much. From that time on, I became quite determined to study physics later. I went from a public junior high school on to the senior high school attached to Tokyo Gakugei University. There, I thought of nothing but entering the Department of Physics of the Faculty of Science [at the University of Tokyo]. I was totally focused on the idea of studying physics in the future.

**Ochi**: I was also a bit of a theoretical physics amateur in my secondary school days, along with my four fellow members of the Science Club. I think there were many theoretical physics amateurs in those days. Anyway, you went to and graduated from the Department of Physics of the Faculty of Science at the University of Tokyo. But after that, you entered the Faculty of Law. Why was that?

**Mogi:** I became a little unsure when a female friend of mine, a student of law at another university, said to me, "Studying physics, will it really amount to anything?" So I entered the Faculty of Law and studied law, but this experience made me realize that I really wanted to pursue science after all. So I graduated from the Faculty of Law, formally at least, and I returned to science in graduate school.

# oung Japanese!

**(Naka-ku, Hiroshima City) within the framework of HU's lecture series "Liberal Arts Education for Spreading Your Wings some 300 newly enrolled HU students and senior high school students. Following the event, Dr. Mogi talked with President youth, and other subjects.**

President of Hiroshima University

## Mitsuo Ochi

**PROFILE**

Born in 1952 in Ehime Prefecture, Dr. Ochi graduated from the Faculty of Medicine, Hiroshima University in 1977. As an orthopedic surgeon, he began the world's first three-dimensional self-cultured cartilage transplant in 1996, for which he received the President's Prize of the Science Council of Japan from the Prime Minister's Office in 2004. From 2007 to 2011, he served as the Director of Hiroshima University Hospital. In 2015, he was appointed President of Hiroshima University and was awarded the Order of Culture, Medal with Purple Ribbon. For 30 years, Dr. Ochi has been supporting the baseball players of Hiroshima Toyo Carp as the team's physician.

By that time, in the field of physics, the separation between theory and experiment had already begun. Today, it's almost impossible to experimentally verify superstring theory. My starting point was butterflies, which means I'm intrinsically interested in living things. So, as a graduate student in physics, I joined a laboratory of biological physics. After I obtained my doctorate, I began my research on the brain at RIKEN, under Dr. Masao Ito, a world authority on the cerebellum.

**Ochi**: That's what you have been doing ever since.

**Mogi:** I started thinking about doing research on consciousness, which I consider as my life's work, about two years after I joined RIKEN. I think that taking up brain science under Dr. Ito was a major turning point for me.

As you know, it is crucial for researchers to maintain a balance. Since I began looking after students at the Tokyo Institute of Technology, I have come to do research on unexpectedly contentious themes of neuroscience and write it up in my papers. But since my interest has shifted to consciousness, I now look at the brain from a perspective that is atypical in neuroscience in the generally accepted sense of the term.

## Statistics cannot elucidate consciousness

**Ochi**: You went to the Research Institute of Physiology at Cambridge University. What prompted you to go there?

**Mogi:** As a research scientist, my principal interest is consciousness. At Cambridge, I researched under Prof. Horace Barlow, who is the great-grandson of Charles Darwin. He is a great scientist, who can be called the godfather of Bayesian inference, which is connected to today's cognitive science, neuroscience, and even artificial intelligence. I respect and adore Prof. Barlow as a person,

The above are photographs of Dr. Kenichiro Mogi talking at HU in May 2019 within the framework of the lecture series "Liberal Arts Education for Spreading Your Wings around the World." The audience included 90 students newly enrolled in HU's Schools of Law and of Economics (Evening Program) and about 200 students from HU-affiliated senior high schools. Showing video images, Dr. Mogi introduced some example applications of advanced technologies, such as home delivery by drone and artificial intelligence (AI)-assisted automobiles. He said, "In the world, people are creating something new every day by repeating trial and error and failing many times. I want you to go out there and see what's going on with your own eyes, instead of just relying on the media." Referring to the concept of "moon shot" (a grand project that is extremely difficult to execute but has enormous impact if realized), Dr. Mogi encouraged the audience: "I believe in the latent power of young Japanese. It's nothing to do with your gender or educational background. I want you to have a big goal and pursue your interest all the way, tackling various challenges."

but I take the position that consciousness cannot be elucidated by studying cognitive processes probabilistically by Bayesian inference. At Cambridge, all researchers around me were taking an approach that I could not agree with. So I could say that my time at Cambridge was useful in that I got to know my "enemies," although this is a little paradoxical.

**Ochi**: You were literally surrounded by your enemies. I gather your approach to research on consciousness has not changed has it?

**Mogi:** It's rather difficult to treat the question of consciousness scientifically. But as my life's work, I am convinced that it must be studied from an approach that is not statistical. I have been doing things little by little in that direction. *No to kuoria (The Brain and Qualia)*, which I wrote in 1997, is an important book for me in that sense. So I am trying to translate it into English right now. In terms of priority, perhaps it's enough to get my Japanese text simply put into English, by Google Translate or something, and upload it on the Internet in a PDF file. But in that way, the quality of translation wouldn't be sufficiently good. So I'm translating it myself. On the theme of consciousness, I have written papers with later updates. But I am thinking that perhaps it's better to write a book since what I have to say is a little complex.

## Liberal arts supporting science

Mogi: Is it true that at Hiroshima University you attach a lot of importance to liberal arts?

**Ochi**: Yes, exactly. At HU, we have a long history and tradition of liberal arts education. Even to the MEXT, which promotes university reform focusing on pragmatic education and research, we said emphatically that HU is a university founded on liberal arts.

**Mogi:** That's wonderful. Many think that theoretical physics is the domain farthest separated from liberal arts. But do you know that Dr. Hideki Yukawa, the first Japanese to receive the Nobel Prize in Physics, had a thorough Japanese-style liberal arts education from his childhood, reciting Chinese classics on a daily basis. I believe that his theory of mesons couldn't be unrelated to his practice of reciting Chinese classics. It means that he was well-versed in Eastern philosophy, in which one believes in the ephemeral nature of matter. Dr. Yukawa was the first to introduce this kind of idea in his theory of mesons. Don't you think that this is very important?

**Ochi**: I believe that what really matters in the end is the arts and that the ability to appreciate arts and the effort we make to understand the arts are applicable to science as well. I suppose you are very knowledgeable about the arts. Isn't that right?

**Mogi:** Without qualia, which is my research theme, you can't appreciate the arts. Qualia is crucial for understanding human beings. Steve Jobs, the founder of Apple, said something to the effect that Apple had always been a crossover of technology and liberal arts, meaning that Apple's products have added value because they are fusions of technology and liberal arts. I hope that something like this will come out of Hiroshima University.

**Ochi**: I do too. At HU, we have a graduate student who has founded a company that develops learning applications about cybersecurity and a programming school for primary and secondary school students. His businesses have developed nationwide, and he has won various awards. I am hoping that he will lead new innovation at HU.

**Mogi:** It would be even better if such activities could directly reach the rest of the world, instead of remaining within Japan. That would be great.

## Japanese hung up on university names and titles

**Ochi**: In addition to publishing books for the general public, you also make very frequent TV appearances. You must be extremely busy. How do you manage your time?

**Mogi:** I have several ongoing projects at hand that I must handle no matter what, such as writing a book about consciousness and reading my students' papers. I work on these projects once I finish my appointments with other people. It's a little difficult to explain. I focus on these projects intensively as soon as I have some free time after I finish assignments that I don't necessarily want to do willingly but are important to do, and I do handle them in all sincerity once I accept them, such as TV and radio appearances and speaking engagements. Once I finish them, I get back to my ongoing projects. It's a little complicat-


*No to kuoria (The Brain and Qualia)*, published by Nikkei Science, Inc., marks Dr. Mogi's starting point as a neuroscientist, posing the question why the spiritual universe of the heart develops in the physical universe of the brain.

ed lifestyle. Basically, I have no leisure time. I always have things to do that can last for the next five years or so. To put it simply, if I don't have any appointments for one year, I already have things to do during that year. I suppose the president of a university can understand this.

**Ochi**: Yes. How many hours do you sleep?

**Mogi:** Six hours, at least. As you might know, without sleeping, your brain's memory circuits cannot be sorted out and put back in order.

**Ochi**: Tell me about one of your turning points.

**Mogi:** When I was 22, I went to the United States to attend the Japan-America Student Conference. While speaking with American students, I made two discoveries. Firstly, I was struck by the excellent quality of liberal arts possessed by students from prestigious American universities called Ivy League universities. I found them and Japanese students totally incomparable.

The other discovery was that American students didn't automatically think that a Harvard student was superior to a student from the Ohio State University. They measured people individually, based on what they were capable of doing, what their aspirations were, and so on, regardless of what universities they were attending or what their titles were. I was deeply impressed with this attitude of fairness. On the other hand, the Japanese students were saying, "I'm from the University of Tokyo," "I go to Waseda," "I'm a Keio student," and so on. I said to myself, "Are they stupid or what?" It was a very powerful experience. I definitely preferred the American way.

**Ochi**: What are your failures, and what lessons have you learned from them?

**Mogi:** During a summer school of a neuroscience society, right before all those prominent scientists, I declared that the question of consciousness would never be resolved through the current approach of neuroscience. I then kept talking for about an hour. I got an earful after that. At that time, I was writing *The Brain and Quolia* and feeling smart. Of course, there are still scientists with whom I maintain good relationships, but I have distanced myself from the society. Now I only attend American academic societies' functions.

## Jumping into the ocean of contingency

**Ochi**: What do you think is needed of universities today?

**Mogi:** I think it boils down to creating added value in a worldwide context. The Japanese way of doing things is not completely bad. Japan has preserved a climate where attention to detail results in fine, diverse values, as demonstrated in the area of manufacturing. As it is said, "to each his own," there is so much diversity even among Japanese. I think that if a Japanese university can skillfully link its function of producing global intellectual added value with the mobilization of local cultural tradition, a uniquely Japanese university model unparalleled to none in western countries could be realized.

**Ochi**: I think that would be ideal. Could you share your motto with us?

**Mogi:** I often say to my students, "Jump into the ocean of contingency." Contingency is a concept of neuroscience that refers to something in the future that cannot be predicted. I tell my students that if you jump into the ocean of contingency, instead of opting for a swimming pool where the lanes are already marked, you can actually swim unexpectedly well. Instead of just saying this to my students, I also try to live it myself.

**Ochi**: What book would you recommend to university students?

**Mogi:** I recommend books by the 19th-century German philosopher Nietzsche because I think he is most suited to this era. He predicted that the era of tragedy would end and the era of comedy would come. I think that there has been nobody who thought about regarding the chaotic world positively as deeply as Nietzsche did. He deeply reflected on how to live one's life the best way one can without God or any other absolute authority. I read Nietzsche when I was in senior high school and was greatly influenced by him.

Dr. Mogi travels around Japan and abroad for speaking engagements, scientific meetings, and research activities. The above photo captures him traveling by Shinkansen.

**Ochi**: What is your message to students and young people?

**Mogi:** I think that Japan has slowed down quite a bit. I don't think that what we can see today corresponds to the latent power of the Japanese. Napoleon said, "Let China sleep; when she wakes she will shake the world." Today, China has woken up, and Japan has gone to sleep. Even Japanese high school students are too quiet. I think that they should go wild and burst. I want to tell them: "Wake up, young Japanese."

**Ochi**: I agree with you. People who arrived on these islands, crossing the sea despite the dangers, came together and formed the prototype of what is Japan today. Considering this, I think that Japanese people's abilities are still largely unexploited at the DNA level. Thank you very much for your time today.

After his lecture, Dr. Mogi was presented with a certificate of the title "Specially Invited Professor" by President Ochi.

CLOSE HU UP!

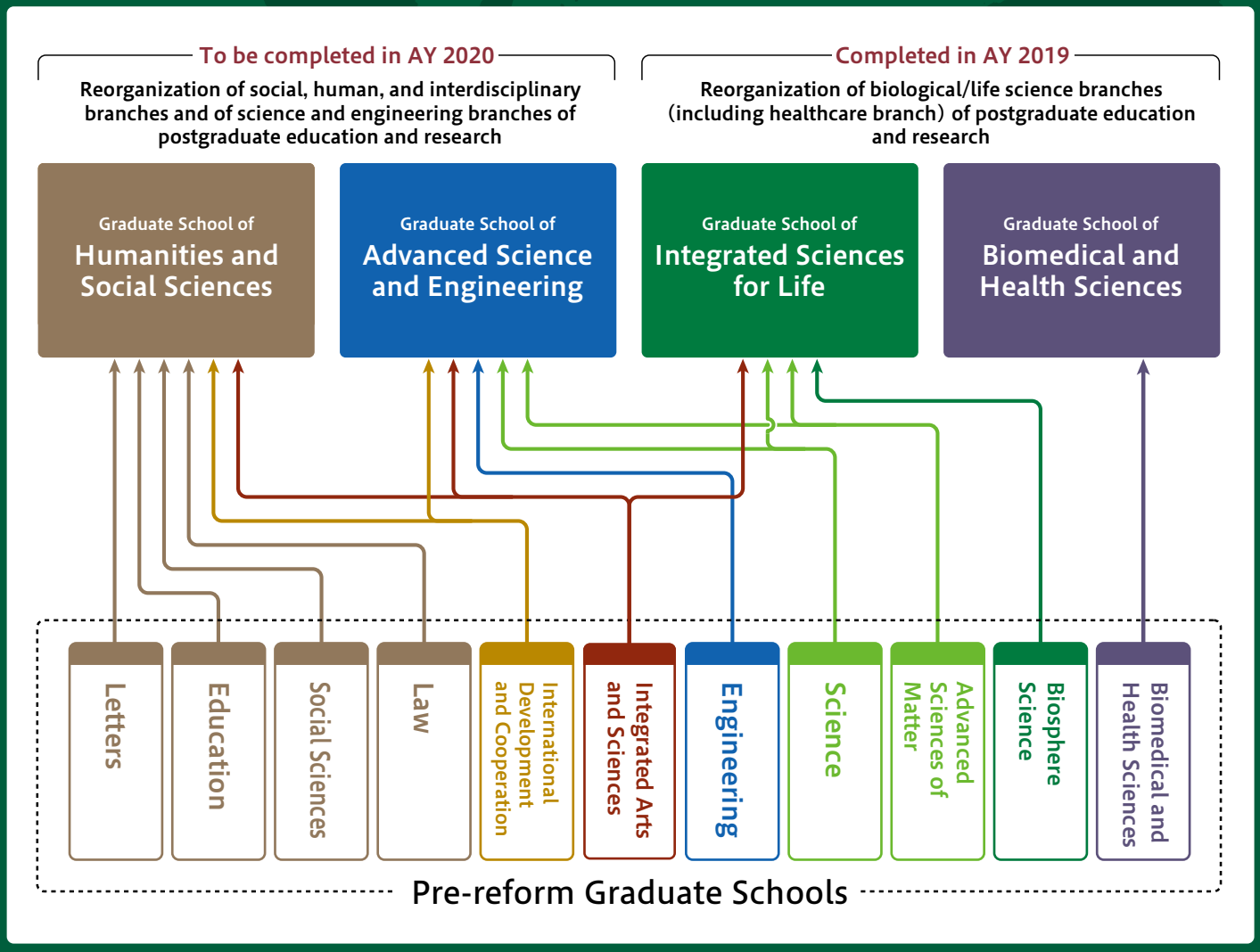
# Becoming a world-class comprehensive research university

A snapshot of ever-progressing Hiroshima University

## Reorganization of postgraduate courses for interdisciplinary and integrated research

### Hiroshima University's reform of postgraduate education and research to transform itself into a global center of education and research that pursues "Sciences for Sustainable Development"

In April 2017, by adopting and publishing the new long-term vision "SPLENDOR (Sustainable Peace Leader Enhancement by Nurturing Development of Research) PLAN 2017," Hiroshima University pledged to the global society to promote activities to develop a new peace science, *Science for Sustainable Development*, "by embracing to an unprecedented level all the existing research fields related to the sustainability of human beings, society, culture, food, environment and nature, and by challenging and working on building peace," so as to fully play its role as a university of world-wide repute and splendor for years into the future. Hiroshima University has thus commenced its graduate school reform to allow the Graduate Schools to effectively pursue their missions: the formation of a global center of education and research that practices Science for Sustainable Development, the creation of new knowledge and value to contribute to the realization of a diversified, free, and peaceful global society, and the training of human resources who will lead future innovation.



## AY 2018 MEXT WISE Program

# Hiroshima University's "Frontier Development Program for Genome Editing" is the only WISE Program in the Shikoku-Chugoku region.

In the WISE Program (Doctoral Program for World-leading Innovative and Smart Education) of MEXT (Ministry of Education, Culture, Sports, Science and Technology of Japan), a university launches, drawing on its strengths, a new doctoral degree program to carry out education and research at the world's highest level in the domain concerned in collaboration with domestic and international universities, research organizations, private businesses, and other partners, thereby producing excellent Ph.D. holders and establishing itself as an outstanding research center. In AY 2018, from among 54 applications submitted by 38 national, public, and private universities, 15 proposals by 13 universities were selected as WISE Programs. Hiroshima University's "Frontier Development Program for Genome Editing" was chosen and is the only WISE Program in the Shikoku-Chugoku region.

Genome editing represents technologies that should be actively explored for industrial use for its potential of solving some of humanity's fundamental problems, such as those concerning food, energy, and disease. Hiroshima University's genome editing program comprises two courses: Life Science Course for new industrial creation using genome-editing technologies; and Medical Course for research on diseases, drug discovery and development of new therapies. The program aims at developing genome editing researchers who will lead the world in this domain.

Prof. Takashi Yamamoto of the Graduate School of Integrated Science for Life is the coordinator of the Frontier Development Program for Genome Editing, for the development of future leaders in genome editing and new industrial creation.

## Applicants from a broad range of fields are welcomed, genome editing being an infrastructural technology of life science.

Science | Pharmacology | Dentistry | Medicine | Agriculture, Fisheries, and Animal Husbandry | Engineering

| Japanese undergraduates majoring in various branches of life science | International undergraduates majoring mainly in agriculture, fisheries, and animal husbandry | Mature students with professional experience in the food, pharmaceuticals, chemicals, cosmetics, and other sectors |
|---|---|---|
| **Students from universities across Japan** (including those participating in the OPERA Program) | **Students from abroad, mainly Asia** | **Students from companies participating in the OPERA Program and other related companies** |

### WISE Program (Doctoral Program for World-leading Innovation and Smart Education)

Organizations implementing the Program

- HIROSHIMA UNIVERSITY
- **Partner Organization**
  - The Japanese Society for Genome Editing
- **Partner Institutes**
  - Center for iPS Cell Research and Application, Kyoto University
  - Graduate School of Technology, Industrial and Social Sciences, Tokushima University
  - Department of Molecular and Cellular Biology, Harvard University
  - Technical Research Center, Mazda Motor Corporation

**The Frontier Development Program for Genome Editing**

| Life Science Course (integrated five-year course) | Medical Course (integrated four-year course) |
|---|---|

- **Basic to advanced knowledge and skills of genome editing**
  Specialized courses in genome editing
- **Process of social implementation of research findings**
  Joint research and internships in collaboration with corporate OPERA participants
- **Case studies for acquiring know-how required for entrepreneurship**
  Courses in career development, data literacy, etc.
- **Research ethics necessary for genome editing**
  Courses in genome editing research ethics

**OPERA**
Program on Open Innovation Platform with Enterprises, Research Institutes and Academia

The organization of the Program enables students to acquire the ability to develop and implement technologies in society in realistic settings of advanced research in terms of speed and other factors.

## Graduates can envisage a future career in genome editing research supporting new industrial creation.

Developers of genome editing-based industrial technologies

Researchers of genome editing-based therapies and drug discovery

Food and Chemical Companies

Pharmaceutical and Bio-venture Companies

Universities Research Centers, Venture Companies

Entrepreneurs of venture businesses related to genome editing

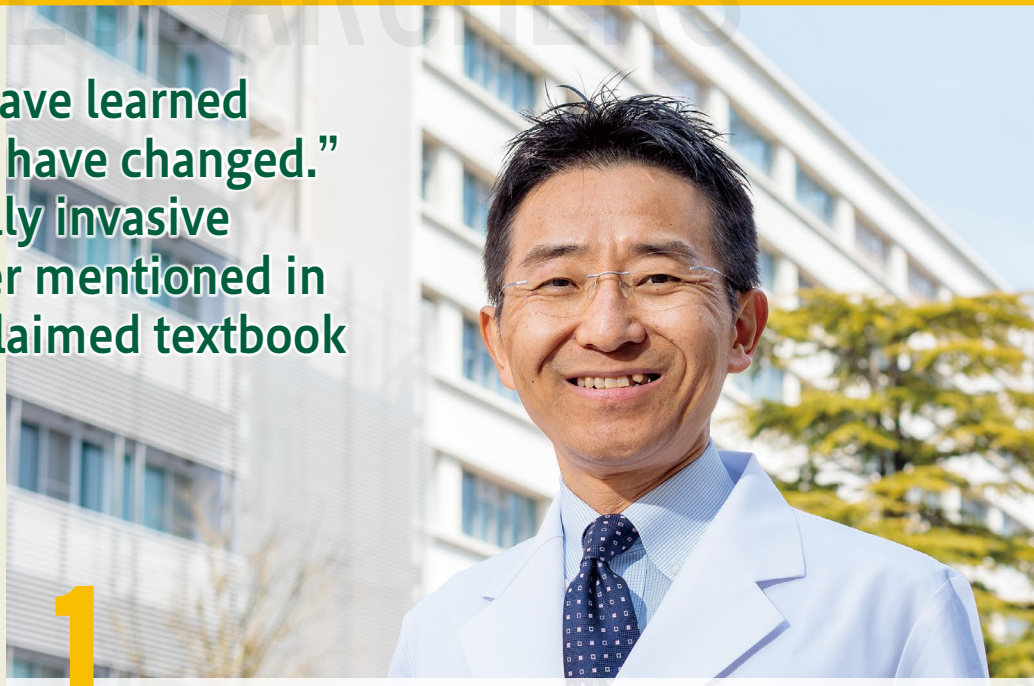
Developers of basic genome editing technologies

For further information https://genome.hiroshima-u.ac.jp/en/index.html

I have a dream

# State-of-the-Art Research Opens the

## "The only proof you have learned something is that you have changed." Developing a minimally invasive surgery for lung cancer mentioned in an internationally acclaimed textbook




1 Morihito Okada, M.D., Ph.D.

Professor, Research Institute for Radiation Biology and Medicine
Deputy Director, Hiroshima University Hospital


After graduating from Nagata Senior High School in Hyogo Prefecture in 1982 and from Nara Medical University in 1988, Dr. Okada entered the Department of Surgery II at Kobe University in the same year. He completed a doctoral course at Kobe University Graduate School of Medicine and earned PhD in 1995. In 1999, he went to study as a faculty member of the department of thoracic surgery at Columbia University Medical Center in the United States. Upon returning to Japan in 2002, he was appointed Head of the Department of Respiratory System Surgery at Hyogo Cancer Center. In 2007, Dr. Okada arrived at Hiroshima University as a professor of surgical oncology. He is a Director of the Japanese Association for Thoracic Surgery, the Japanese Association for Chest Surgery, and the Japan Lung Cancer Society, as well as an expert member of the Central Environment Council of the Ministry of the Environment. Dr. Okada has been featured in numerous TV programs (including NHK's "General Practitioner Doctor G" and TBS's "The World's Super Doctors") and magazine feature articles (including *Bungei Shunju and Shukan Asahi*).

Lung cancer is extremely hard to cure, with a high incident rate and mortality rate. I fight this tough opponent, holding a pair of Cooper scissors, 30-cm-long surgical scissors, in a "reverse" fashion, which allows me to manipulate them freely to attack the focus. To treat small cell lung cancer, whose patients have been rapidly increasing in number, I use the approach called "hybrid VATS," which I developed myself, to perform highly difficult segmentectomy, to preserve the patient's pulmonary capacity.

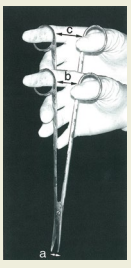
The term "VATS" stands for "video-assisted thoracic surgery." Compared to the conventional open surgery, it leaves smaller scars, and since muscles are not cut and ribs not removed, the patients experience less postoperative pain and reduced functional deterioration, returning to normal daily life more quickly. Incisions are made at two locations: a 1-cm hole through which a thoracoscope is inserted and a 4 to 5-cm hole through which surgical procedure is performed. VATS is used on 99% of patients with lung cancer.

Previously, in the surgical treatment of lung cancer, it was a standard practice to completely remove the lobe of the lung with tumor, regardless of its size. Today, in the case of small cell lung cancer, it is possible to perform cytoreductive surgery, removing only a limited segment, as a curative operation. This method is actively employed on patients with a lung cancer 2 cm or smaller, to preserve their pulmonary capacity and improve their postoperative quality of life. In other words, the hybrid procedure combining cytoreductive surgery with thoracoscopy is the ultimate patient-friendly procedure.

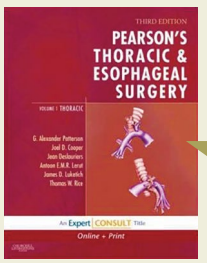
Among small-cell-lung-cancer patients undergoing radical cytoreductive surgery, the five-year survival rate is over 95%. In the spring of 2018, lung cancer surgery using the Da Vinci robot system became reimbursable by health insurance. Before health insurance coverage was authorized, Hiroshima University Hospital had the largest cumulative number of robot-assisted surgical procedures in Japan, and we intend to actively perform robotic lung surgery.

My surgical approach is internationally recognized and highly evaluated. *Pearson's Thoracic and Esophageal Surgery* is a well-established textbook/reference book of over 2,000 pages that is considered the "bible" for students and young practitioners of thoracic surgery the world over. At the beginning of the book, in the chapter on the history and development of thoracic surgery, my name is mentioned in connection with the development of minimally invasive surgical techniques for lung cancer. I am the only Japanese mentioned in this book.

I think my most important mission is to continue improving myself, while not forgetting gratitude to others, and developing future human resources capable of working not just in Japan but anywhere in the world. When the rough skin protecting the body surface prevents further growth, a snake sheds it while growing new skin in the process of molting. To obtain something new, you must open your hand and release what you are holding in it. I experienced the Great Hanshin-Awaji Earthquake when I was in graduate school and was studying in New York when the 9/11 terror attacks occurred. Perhaps because of this, I want to live my life, with no regrets at all times. Physicians are intellectual professionals charged with the duty of harnessing scientific progress into people's health and well-being. The object of our work is people. To fulfill our duty, it is essential to learn not just medicine but about all types of subjects relating to humanity. The only proof you have learned something is that you have changed. I hope to continue learning with the courage to change myself, and I hope that younger physicians with high potential will also approach their profession likewise.




Sharp dissection with 30-cm Cooper scissors held reversely is indispensable for the hybrid VATS; as with a large knife held by a cook, a delicately controlled yet strong force is transmitted to the edges by the effect of leverage.




centers speculated that a
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In *Pearson's Thoracic and Esophageal Surgery*, the most widely read reference book on thoracic surgery in the world, Dr. Okada is the only Japanese mentioned along with the new surgical technique he developed.

# Door to the Future



Upper images: Monthly "German on TV" textbooks, which Prof. Yoshimitsu wrote.
Lower: Textbook series used for over 20 years at many universities, including HU; the long-running edition is currently being revised.

## 2 Takako Yoshimitsu

Associate Professor
Institute for Foreign Language Research and Education

Prof. Yoshimitsu graduated from the Department of German, the Faculty of Foreign Languages, Osaka University of Foreign Studies and completed the master's course at the Graduate School of the same university. Her specialization is German language education. As an undergraduate, she studied at the University of Cologne for a year as a Rotary Club scholarship recipient. As a graduate student, she received a scholarship from the Goethe-Institut in Munich to attend its six-month German language teacher training course. Prof. Yoshimitsu arrived at Hiroshima University in 2005 after working in the education and public relations division at the Goethe-Institut Osaka. She served as the instructor and program supervisor of the NHK Educational TV's "German on TV" for four seasons.

My specialization is German language education. Language acquisition is influenced by various factors, which can be classified into external and internal factors. Educational materials, teachers, the number of lessons, the number of students per class, and classroom atmosphere are external factors. On the other hand, internal factors include the learner's age, mother tongue, motivation, and if it is a Japanese student who begins German in university, his or her experience of learning English in primary to secondary school, views on learning shaped by that experience (convictions about and attitude toward learning), and learning habits. My research consists of analyzing these factors through the practice of teaching classes and identifying what should be taught in class, and how.

When I tell people that I teach German, I often get similar responses: "I suffered so much studying German in college" and "I only remember *der, des, dem, den* [articles that precede masculine nouns] now." I understand how they feel because I myself had to spend an enormous amount of time and energy to learn German. At the same time, I feel that it is unfortunate that their thought stops there. Learning a foreign language is not just about learning to use it. It is also about learning about the culture and history of the country in which the language is spoken, all sorts of things relating to that society. In German, this is called *Landeskunde*. Learning this is essential for language acquisition. Moreover, when you study a foreign language, you naturally come to think more deeply about Japanese, as well as Japanese culture and society, of which you are usually not particularly conscious. That is to say, learning a new language is a repetition of steps by which you obtain new intellectual experience, collecting new pieces of knowledge and organically linking them with one another, forming longer and longer strands extending in all directions. A body of knowledge formed in this manner can be directly useful in the learner's specialized study or daily activities. More often than not, it proves useful in totally unexpected ways and much, much later. Even without practical utility, new knowledge can bring joy, enriching your life.

In many European countries, it is customary for students to study their native language plus two foreign languages, starting from secondary school. In Japan, we study English in elementary and secondary schools but usually wait until university to begin another foreign language. At Hiroshima University, in addition to German, students can study seven languages from the beginner's level: French, Chinese, Korean, Spanish, Russian, Arabic. Moreover, in the special trilingual training program, second-year students can continue to take German, French, Chinese, Korean, and Spanish. I want senior high school students thinking about entering Hiroshima University to experience the joy of studying foreign languages and expanding their knowledge, building a foundation for a richer life experience.

**"Learning a foreign language brings joy to and enriches one's life."**
**"Exploring factors for language acquisition through lessons."**

# Developing advanced human resources for genome editing to find solutions to humanity's problems


3 Takashi Yamamoto

Professor
Genome Editing Innovation Center
School of Science and Graduate School of Integrated Sciences for Life


Prof. Yamamoto graduated from the Department of Biology of the School of Science at Hiroshima University and went on to the Graduate School of Science, which he left before completing in order to work as an assistant at the Faculty of Science, Kumamoto University, from which he obtained his doctorate (Science). After serving as a lecturer and associate professor at HU's Graduate School of Science, he was appointed to his current post in 2004. Prof. Yamamoto specializes in genome biology, and his main research interest is the development and application of genome editing, which can be used in various living organisms. He is also Director of the Hiroshima University Genome Editing Innovation Center and President of the Japanese Society for Genome Editing. His publications include the book *Genomu henshu no kihon genri to oyo (The Basic Principles and Application of Genome Editing)* published by Shokabo.

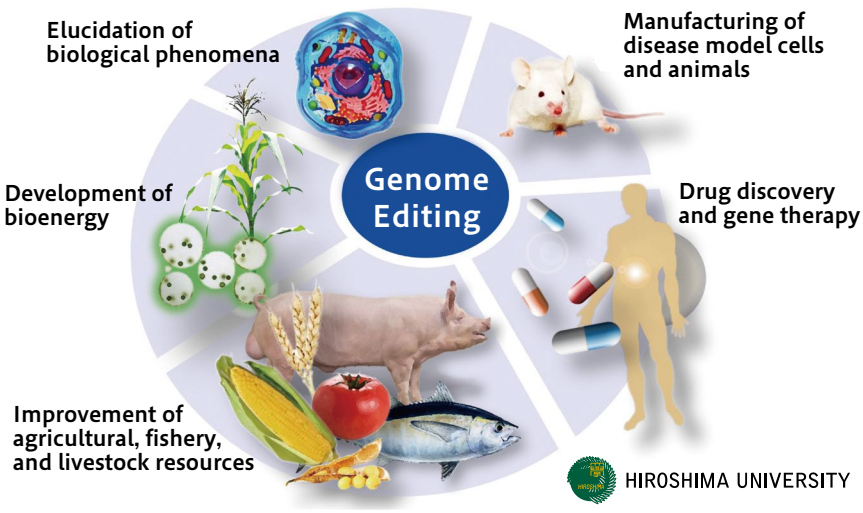
Genome editing is the emerging biotechnology that makes it possible to modify genetic information (genome) in living organisms exactly as desired. Genome editing involves the use of artificially generated enzymes (genome editing tools) to cut the DNA of a cell at a specified sequence. With humans, this means precisely targeting a spot along the approximately three billion basic sequences (of A, G, C, and T) in the human genome. To accurately modify genes, genome editing makes use of the intracellular repair mechanism that is immediately activated when the DNA is damaged. Capable of inducing various types of mutations in microorganisms, plants, and animals just like naturally occurring mutations, genome editing is expected to bring about technological innovations that can lead to the development of biofuels using microorganisms, the improvement of useful species, drug discovery, and the creation of new medical treatment methods.

At Hiroshima University, we began basic technological development for genome editing in 2008. We have produced many positive research results, including successful genome editing in microorganisms, insects, sea urchins, amphibians such as frogs and newts, and some mammals, using HU's originally developed genome editing tool (Platinum TALEN). Moreover, improvement of this technology has made it possible to regulate and visualize (by using imaging technology) the functions of genes in cells.

In 2016, Hiroshima University led the establishment of a genome editing consortium for academia-industry collaboration. It now serves as a platform for industrial technology development projects with the participation of many private businesses. For example, Mazda Motor Corporation and HU are pursing the development of a microalgae-based renewable energy to replace fossil fuels. In the field of healthcare, we are promoting the production of model iPS cells and model animals for research on hereditary diseases with researchers in and outside Japan. Because of the high potential of genome editing for therapeutic purposes, we are also working hard on technological development for cell manufacturing for regenerative medicine and cancer treatment.

In 2018, HU's "Frontier Development Program for Genome Editing" was selected as an excellent graduate school program of the Ministry of Education, Culture, Sports, Science and Technology of Japan, putting in motion our advanced human resource development. This program is designed to train researchers who will work toward new industrial creation and developers of industrial technologies, both types equipped with the basics and advanced knowledge for application of genome editing. I would like to invite all those interested in the development and industrial application of genome editing to consider pursing research with us at Hiroshima University to contribute to future society through technological innovation.

## Great Potential of Genome Editing




Much expectation rides on genome editing as a technology exploitable for a broad range of purposes from basic research to practical application (such as development of microalgae-based biofuel, improvement of useful species, drug discovery, and gene therapy).

# “Assembling units of information and formulating problems” Learning engineering: Designing new modes of learning for the AI era


4 Tsukasa Hirashima

Professor
School of Informatics and Data Science
Graduate School of Engineering

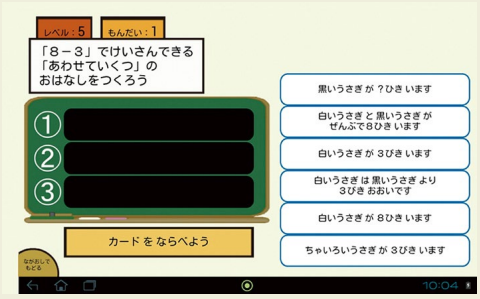

Prof. Hirashima obtained his doctorate in Engineering from the Department of Information Engineering of the Graduate School of Engineering Science at Osaka University. Before assuming his current post, he served as an assistant and lecturer attached to the Institute of Scientific and Industrial Research of Osaka University and as an associate professor at the Department of Intelligence and Information Engineering, Faculty of Information Engineering at Kyushu Institute of Technology. His main research theme is artificial intelligence, particularly knowledge engineering and its application for educational purposes. He is active in practical application in classroom settings, resulting in his being honored with the Gold Prize of the Japanese Society for Artificial Intelligence Field Innovation Award in 2017. He had served as President of the Asia-Pacific Society for Computers in Education (APSCE), as well as a board member of the Japanese Society for Artificial Intelligence, the Japan Society for Education Technology, and the Japanese Society for Information and Systems.

Artificial intelligence (AI) is in its third-wave boom at the moment. This is because the scope of its application has substantially expanded since it has become evident that AI produces far better results than humans principally in pattern recognition, thanks to advances in statistical AI technologies, as represented by deep learning. Because of this development, more and more people are wondering if AI will take away jobs from human workers in the future. This is a misleading idea. It is more accurate to say that AI will change the work that should be done by humans. In other words, we will leave what AI does better than us to AI, while focusing on what only humans can do.

What AI does better than us mainly comprises solving problems, whereas we can say that AI does not excel in formulating problems. So in the era of AI, humans must have the ability to do this. This leads us to a new challenge. Up to the present, we have taken tests to have our problem-solving ability evaluated. Also, the learning that we have done so far is often oriented toward those tests that measure our problem-solving ability. You might think that this challenge can be easily overcome by getting learners to learn how to make problems. This is not easier said than done. When a problem is fixed, its solution is usually found. This is why one teacher can handle many students at one time in problem-solving. If students were to learn how to make problems, it would mean each student making his or her problem, requiring instruction specific to each student. This necessitates the construction of a new learning mechanism.

This challenge becomes a research subject in the domain of information science with the following assumptions: “a problem is made up of information,” “formulating a problem involves assembling units of information,” and “solving a problem is handling information.” Learning engineering is a research area wherein new learning mechanisms are proposed and tools are developed to realize these mechanisms. These proposals and the development of tools are centered on information science but also require integrated and interdisciplinary research closely linked with education science and psychology, as well as the actual field of educational practice. Information science is sometimes defined as a meta-science that integrates various fields of science from the perspective of information, and learning engineering is a typical example of information science.

The 21st century is an age of information. People’s lives are determined by information, and not material objects. Information is not discovered or invented; it is designed. Information is designed through interdisciplinary integration of knowledge of various disciplines centering around information science. With the opening of the School of Informatics and Data Science in the academic year 2018, Hiroshima University is gradually establishing a system of training individuals who will take up information design in the age of information. I would like our students to “learn information to change society.”

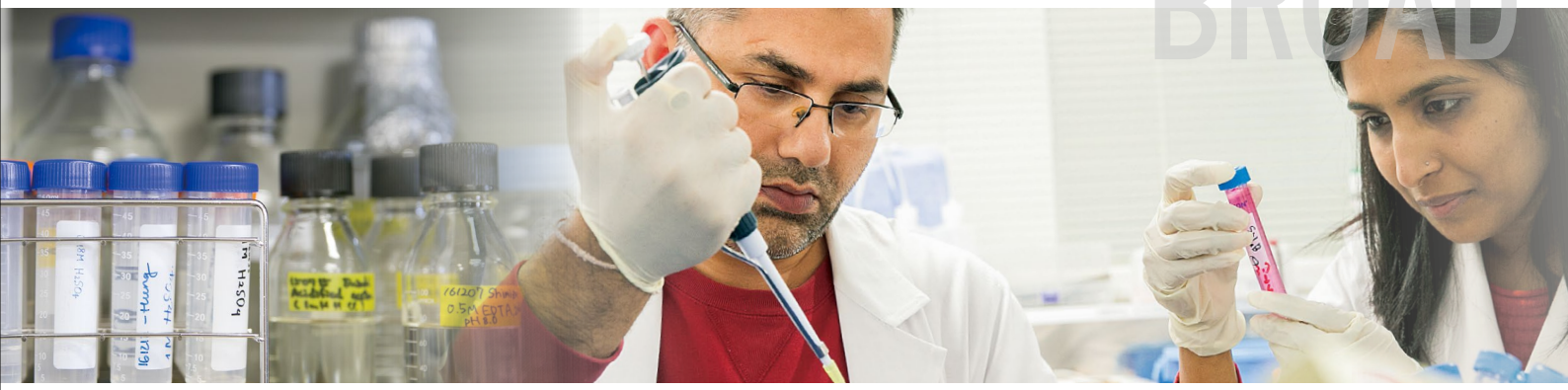



The problem-formulating software Monsakun is based on a model that defines narrative arithmetic problems as combinations of concepts of quantities. Versions of the software from kindergarten to junior high school students are used in actual classrooms.

A scene from a school lesson in which Monsakun is used: students can use Monsakun on tablets, and data can be relayed from the students’ tablets to the teacher’s tablet via a server.

Educational systems matching students' motivation

# Solid Education Provides a Wider BROAD



## UNDERGRADUATE EDUCATION

School of Integrated Arts and Sciences, School of Letters, School of Education, School of Law, School of Economics, School of Science, School of Medicine, School of Dentistry, School of Pharmaceutical Sciences, School of Engineering, School of Applied Biological Science, School of Informatics and Data Science, and Special Course of Special Support Education

Hiroshima University's undergraduate education is offered in diverse schools that ensure high-level education through HU's original goal-oriented educational system, HiPROSPECTS® (Hiroshima University Program of Specified Education and Study), designed to lead students to acquire a broad culture and specialized knowledge.

## Characteristics of the Bachelor's Degree Courses

### 1 HU's original goal-oriented educational system HiPROSPECTS®

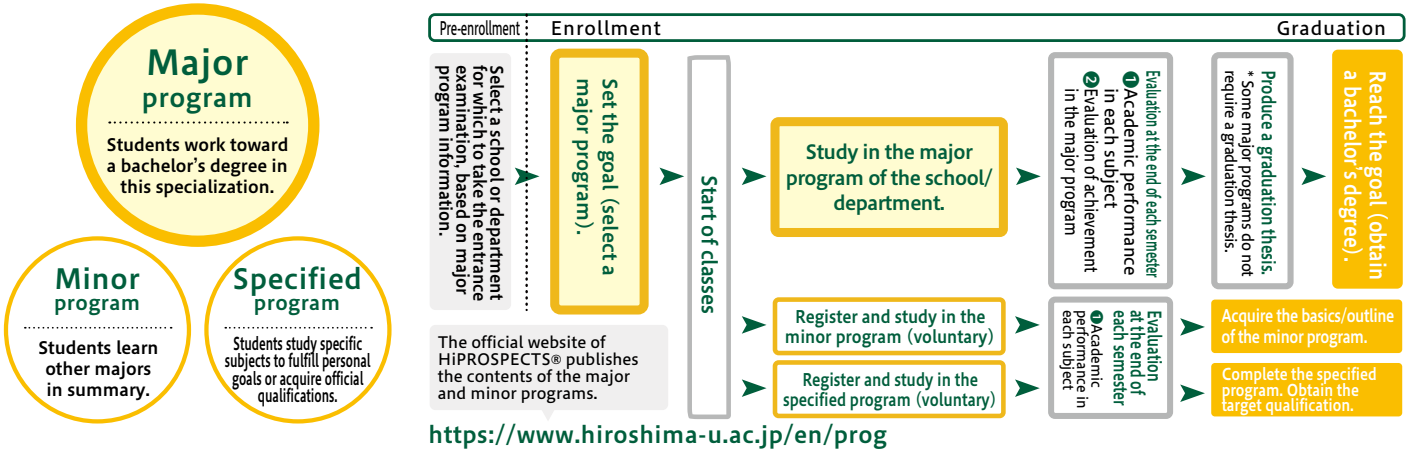
*HiPROSPECTS (Hiroshima University Program of Specified Education and Study) is a registered trademark of Hiroshima University.

#### A combination of three programs to match each student's academic interests and intellectual curiosity

In accordance with his/her academic interests, each student can select a desired program from a combination of three programs: "major program" of the school/department in which the student is enrolled; "minor program" in which the student can learn majors of other departments; and "specified program" designed for the student to develop higher abilities and acquire official qualifications.

#### Each program clarifies targets to reach

In each program, the target levels of knowledge and competency that each student is expected to reach by graduation are clearly indicated, and their degrees of achievement are periodically checked. This approach enables students to make progress steadily toward their final goal.




### 2 TOEIC®L&R IP Test

**Measuring English language proficiency by a socially and internationally recognized test**

Upon admission and just before graduation, all students take the TOEIC® L&R IP Test. Scores in this socially and internationally recognized test enable the students to check their own English language proficiency. The scores are also used to place students in classes based on their proficiency levels and improve Hiroshima University's English language education.

### 3 Basic Courses in University Education

**Compulsory courses for all students preparing to engage in intellectual activities at Hiroshima University**

Hiroshima University's liberal arts education is categorized into four major areas (Peace Science Courses, Basic Courses in University Education, Common Subjects, and Foundation Courses). The Basic Courses in University Education are compulsory for all students, in which they learn the basics of intellectual activities in college through seminars and the program Introduction to University Education.

# and Deeper Learning Experience

## POSTGRADUATE EDUCATION

Graduate School of Integrated Arts and Sciences, Graduate School of Letters, Graduate School of Education, Graduate School of Social Sciences, Graduate School of Science, Graduate School of Advanced Science of Matter, Graduate School of Engineering, Graduate School for International Development and Cooperation, Graduate School of Integrated Sciences for Life, Graduate School of Biomedical and Health Sciences, and Law School

Hiroshima University has 11 graduate schools that cover all academic disciplines and research areas in natural, human, and social sciences. The graduate schools strive to nurture in students academic creativity to discern and analyze issues and a global perspective to aspire for worldwide activities.

## Characteristics of the Postgraduate Courses

### 1 Education and Research Environment

**Faculty and facilities for the most advanced research in the world**

To be among the world's highest-level research universities, Hiroshima University promotes original and distinctive basic and cutting-edge research. Each graduate school comprises laboratories or units that cover a broad range of research areas in which students engage in most advanced research projects under the supervision of highly qualified academic faculty members. The graduate schools work closely with affiliated research institutions to realize highly specialized educational and research activities.

### 2 Common Graduate Courses

**Basic knowledge for active roles in today's society**

Common Graduate Courses are offered to equip students with the basic knowledge necessary to play active roles in society by learning about the recent developments of social systems. Furthermore, through these courses, the students are expected to cultivate their broad perspective, interest and awareness concerning social issues, thereby elaborating their reflection on how their academic discipline can concretely contribute to society as a science for sustainable development.

#### Sustainable Development Courses

Through these courses, students are expected to deepen their understanding of the global community's Sustainable Development Goals (SDGs) in order to develop the ability to create sciences for sustainable development and propose solutions to various problems in society.

#### Career Development and Data Literacy Courses

These courses lead students to understand recent advances in social systems, acquire the knowledge necessary now and in the future, and develop the ability to concretely tackle challenges facing today's society by using knowledge and technology as needed.

### 3 WISE Program (Doctoral Program for World-leading Innovation and Smart Education)

**Training Ph.D. holders who bring about innovation to benefit society**

This program aims at developing human resources who will lead new industrial creation. Taking advantage of Hiroshima University's high levels of specialization and advanced knowledge and industry-academia partnership for human resource development, this program aims at producing outstanding Ph.D. holders who lead the creation and application of new knowledge to create new value for future generations, tackle challenges facing society, and bring about innovation to society.

#### Frontier Development Program for Genome Editing

**(adopted by MEXT in AY 2018)**

**Two inter-departmental courses to develop human resources capable of fully utilizing genome editing and linking it with industrial creation**

- **Life Science Course** (five-year program)
- **Medical Course** (four-year program)

### 4 Leading Graduate Education Programs

**Training next-generation leaders for global activities**

Hiroshima University has inaugurated the Leading Graduate Education Programs, new trans-graduate school doctoral programs that train future global leaders who create new forms of knowledge beyond the conventional boundaries of academic disciplines and research areas. On the basis of profound specialization cemented at Hiroshima University over the years, the programs offer courses that cultivate students' ability to create, discern, take action and solve problems, and common subjects that form the "Hiroshima University spirit." The students are trained to be leaders capable of taking on global challenges, approaching issues from an original perspective, with discernment based on broad and deep knowledge.

#### Phoenix Leader Education Program (Hiroshima Initiative) for Renaissance from Radiation Disaster

**(adopted by MEXT in AY 2011)**

**Three transversal courses to train experts in the field of radiation disaster recovery**

- **Radiation Disaster Medicine Course** (four-year program)
  Training future leaders who protect human lives from radiation disasters
- **Radioactivity Environmental Protection Course** (five-year program)
  Training future leaders who protect the environment from radioactivity
- **Radioactivity Social Recovery Course** (five-year program)
  Training future leaders who protect children and society from radioactivity

#### TAOYAKA Program for Creating a Flexible, Enduring, Peaceful Society

**(adopted by MEXT in AY 2013)**

**Three transversal courses to train future leaders who promote on-site reverse innovation**

- **Cultural Creation Course** (five-year program)
  Train to create culture adapted to social and environment change as well as technical innovation
- **Technical Creation Course** (five-year program)
  Train to create science and technology to match with the issues in culture and social environments in disadvantaged regions
- **Social Implementation Course** (five-year program)
  Train to achieve the balanced implementation into society of the diverse culture and new science and technology that have been created

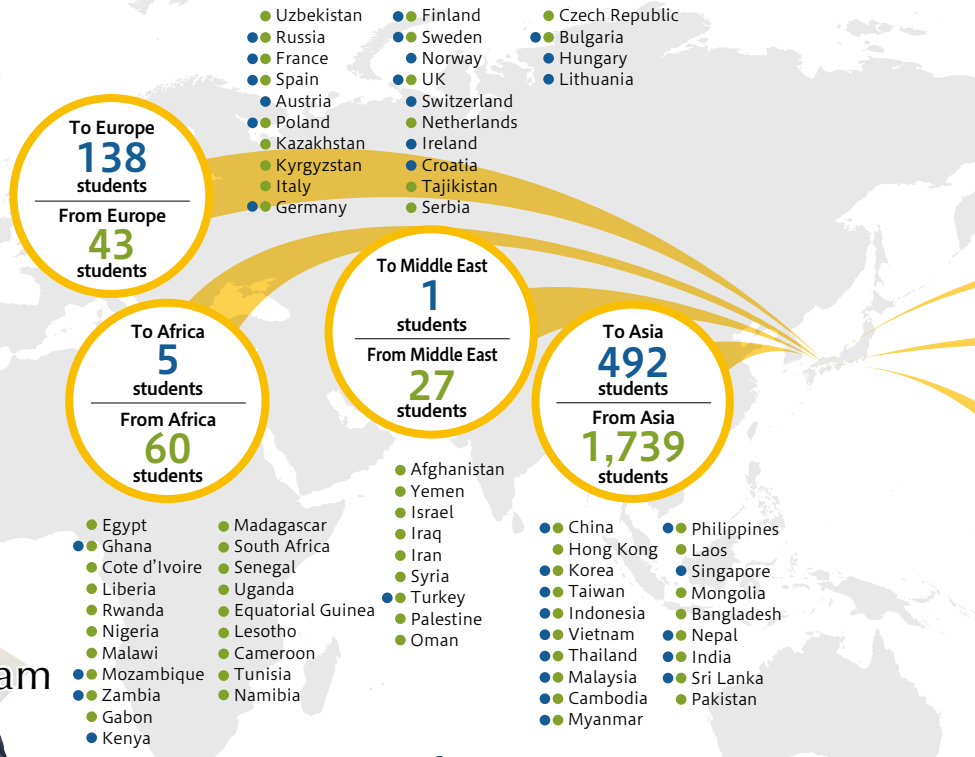
# INTERNATIONAL EXCHANGE

As an international educational and research center whose campus is the whole world, Hiroshima University has signed international exchange agreements with educational and research institutions all over the world. Hiroshima University attracts many students from all corners of the world and sends many Japanese students abroad.

## Active participation in international exchange following the START program

I participated in the START program because I wanted to see how far I can go with my English. I felt some anxiety because I had never been overseas before, but the pre-departure training helped me prepare thoroughly. My host family welcomed me warmly, and I fully enjoyed myself. Following this experience, I began actively taking part in international exchange events. I encourage everyone to try this meaningful experience.

**Fumika Kamagata**
Third-year student, School of Engineering, Cluster 1




## From Hiroshima University to the World

**A total of 946 students were sent to 40 countries and regions**
(AY 2018)

From first-year undergraduate students to postgraduate students

# Diverse Study-Abroad Programs

## Introductory Programs

In these programs, participants meet local students at partner overseas universities for discussions and other activities to experience local culture first-hand. The programs are designed to enable the participants to discover new cultures and entice them to consider a longer-period study-abroad program.

### ●START Program
Target First-year undergraduate students
Destination Vietnam, U.S.A., Indonesia, Australia, New Zealand, Taiwan, Thailand, etc.
Period Two weeks (during long holidays)

### ●START+ program
Target First- to third-year undergraduate students
Destination Australia, Lithuania, Spain, Cambodia
Period Two weeks (during long holidays)

### ●Taiwan Short Visit
Target Undergraduate and graduate students Destination Taiwan Period Ten days (during summer vacation)

**··· and more**

## Language and Culture Programs

In these programs, participants study at local language schools and other institutions in European and Asian countries, meeting local students and enriching their foreign language and cultural experiences.

### ●English Plus ALOHA Program
Target Undergraduate and graduate students
Destination Hawaii
Period Three weeks (during summer vacation)

### ●Summer French Language Training Program
Target Undergraduate (second and later years) and graduate students
Destination Switzerland Period Three weeks

### ●German Language Summer School at the University of Hamburg
Target Undergraduate students Destination Germany Period One month (during summer vacation)

### ●Short-term Summer Korean Language Training at Kyung Hee University
Target Undergraduate and graduate students
Destination Korea
Period Three weeks (during summer vacation)

### ●Special Training in Chinese Language and Culture
Target Undergraduate and graduate students
Destination China, Taiwan Period Two or three weeks

**··· and more**

## Student Exchange Program

Students can study abroad at associated universities under student exchange agreements while remaining enrolled at Hiroshima University.

### ●HUSA/USAC®/UMAP® Program (exchange program)
Target Undergraduate and graduate students Destination Partner universities
Period One semester or one academic year

### ●AIMS-HU Program (exchange program with partner universities in ASEAN)
Target Undergraduate and graduate students (Engineering, Biomedical)
Destination Thailand, Indonesia Period One point five to four months

### ●PEACE Student Exchange Program
Target Students enrolled in designated undergraduate and graduate schools
Destination Cambodia, Laos, Myanmar, Vietnam, Thailand
Period Ten days to one academic year (variable depending on undergraduate/postgraduate school)

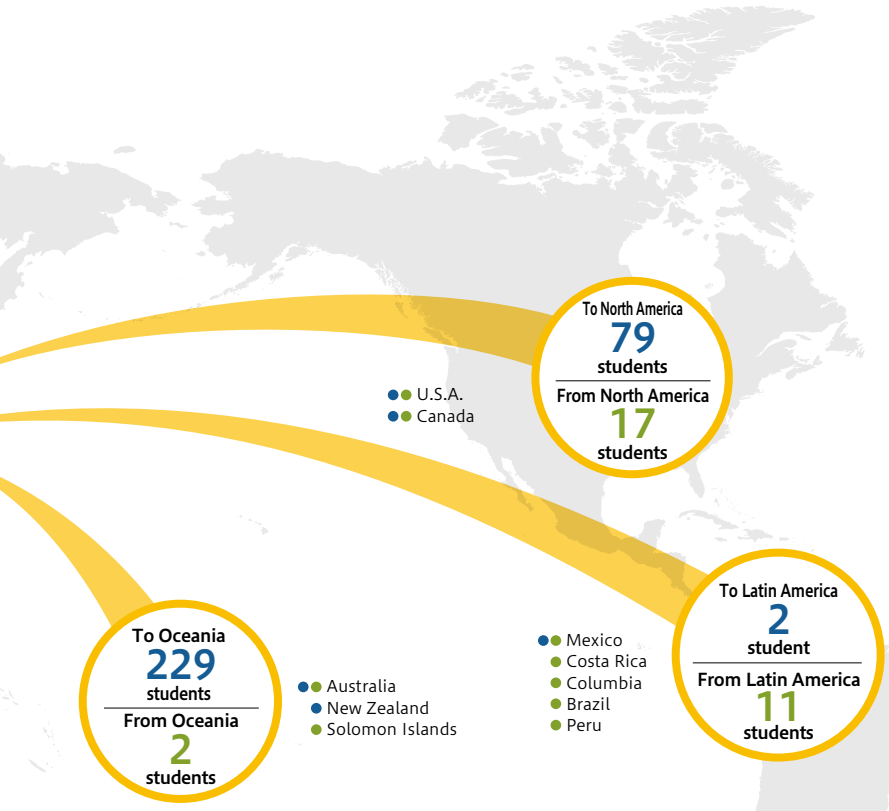
### ●International Linkage Degree Program (ILDP)
Target Undergraduate and graduate students Destination India Duration One week to six months

## Internship Programs

Programs aim at training globally operational future researchers and professionals.

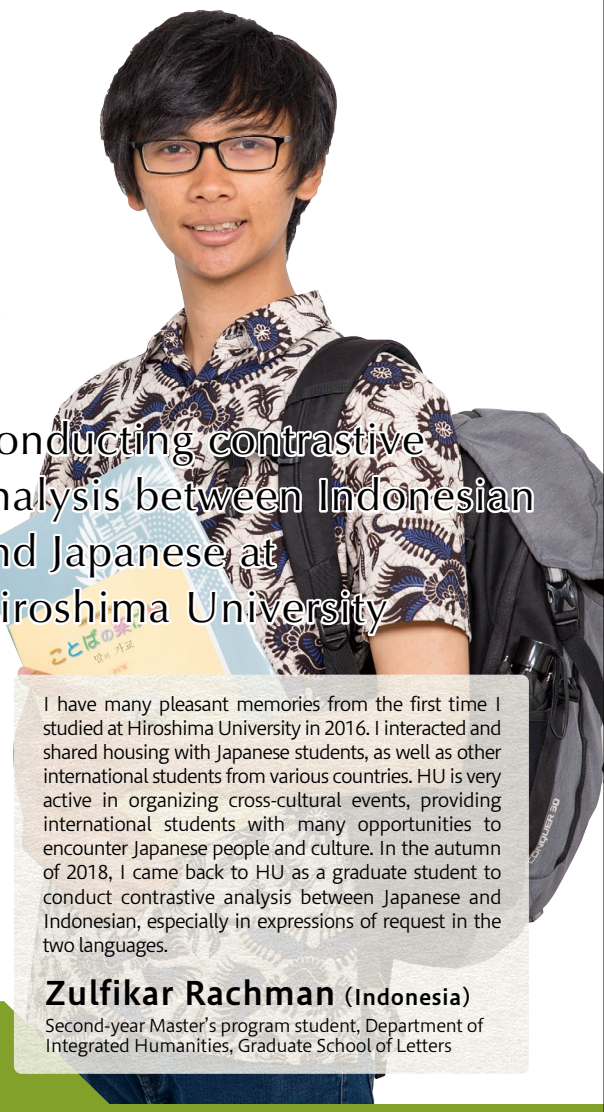
### ●G.ecbo Overseas Internship Program
Target Graduate students Destination Asia, Africa, etc. Period One to three months

### ●Corporate Internship Program in Vietnam
Target Undergraduate and graduate students Destination Vietnam Period Two weeks




# From the World to Hiroshima University

**A total of 1,899 students from 72 countries and regions are studying at HU**
(as of May 1, 2019)



## Conducting contrastive analysis between Indonesian and Japanese at Hiroshima University

I have many pleasant memories from the first time I studied at Hiroshima University in 2016. I interacted and shared housing with Japanese students, as well as other international students from various countries. HU is very active in organizing cross-cultural events, providing international students with many opportunities to encounter Japanese people and culture. In the autumn of 2018, I came back to HU as a graduate student to conduct contrastive analysis between Japanese and Indonesian, especially in expressions of request in the two languages.

**Zulfikar Rachman** (Indonesia)
Second-year Master's program student, Department of Integrated Humanities, Graduate School of Letters

Meeting and learning with international students at HU

# Diverse and Enriching International Exchange on Campus

## Supporters for New International Students

Senior students help newly arrived international students with apartment-settlement and subsequent procedures, as well as their daily college lives. Please apply to be a supporter if you want to support international students, have interest in cross-cultural communication or international exchange.

## NOIE (Network of International Exchange)

This group provides students interested in active international exchange with information relating to participation in related on- and off-campus programs.

## International Exchange Events

Various events are organized on campus to enable Japanese and international students to meet and interact in a relaxed and friendly atmosphere.

### ●Regional World Cooking

International students serve as instructors, cooking and sharing traditional dishes of their home countries with Japanese students. This is a great way to learn about food cultures in various parts of the world while having fun with other students (Once every semester).

### ●International Luncheon

Participants have lunch together, enjoying friendly conversation. Since there are no restrictions on languages to be used, any student can casually take part, regardless of linguistic competency (Higashi-Hiroshima Campus: Every Thursday in the Student Plaza 1F, Kasumi Campus: Every Second Tuesday and fourth Thursday Plaza MIDORI).

### ●International Night

International students introduce the culture and history of their home countries. This event is intended to deepen mutual understanding between Japanese and international students about each other's culture.

### ●*Naruhodo!* Cross-Cultural Discussion

Japanese and international students talk about various themes in small groups in English (held about once every month from 18:15 to 19:30 on the first floor of Student Plaza)

# ADMISSIONS

Each undergraduate and graduate school has its own admissions policy in accordance with its educational objectives and goals. At the undergraduate level, in addition to the general entrance examination, students are selected through various processes that look into candidates' individuality and motivation, including the Hiroshima University Splendor (Hikari Kagayaki) Entrance Examination, Admissions Office (AO) Entrance Examination, and Entrance Examination by Recommendation.

## Ideal Student Profile — Hiroshima University Admission Policy (for the bachelor's degree courses)

**Hiroshima University looks forward to welcoming students with the following qualities:**

1. Students with a well-rounded personality wishing to contribute to peace
2. Students highly motivated to pursue, create, and develop knowledge
3. Students wishing to acquire specialized knowledge and skills so as to contribute to the development of society
4. Students wishing to learn about diverse cultures and values so as to play an active role in the local and international communities

To accept individuals who demonstrate these qualities, each faculty or department evaluates and selects candidates in a multifaceted and comprehensive manner in accordance with its diploma and curricular policies. For this process, each faculty or department clearly indicates the competences required of candidates and how they are evaluated, in terms of knowledge and skills; the ability to think, make decisions, and express themselves; and attitude toward learning preferably marked with both independence and willingness to collaborate with others of diverse backgrounds.

## Entrance Examinations to Undergraduate Schools — Open to high school students, working adults, and senior citizens

### 1 General Entrance Examination

- **February-Term**
- **March-Term**

Candidates are evaluated mainly in relation to their academic abilities in subjects covered in higher secondary school that are necessary to receive university education. Written tests constitute the main part. The final pass/fail decision is made based on the results of the National Center Test for University Admissions and the university's specific academic examination.

### 2 Hiroshima University Splendor (Hikari Kagayaki) Entrance Examination

#### Admissions Office (AO) Entrance Examination

- **Comprehensive Evaluation**
  Type Ⅰ (without National Center Test)
  Type Ⅱ (with National Center Test)
  Type Ⅲ (with seminar attendance)
  Type Ⅲ will stop recruitment from 2021 admissions.

  Candidates are evaluated with focus on their scholastic interest, motivation, and basic academic abilities in a combination of several test methods, such as essay writing, written examination, interview, skill performance, and oral presentation. In this examination method, candidates can show their individuality and specific skills.

- **Specific Applicant Evaluation**
  For International Baccalaureate holders, returnees, and mature applicants, IGS entrance examination

  This method is designed to accept students with diverse learning backgrounds, including International Baccalaureate Diploma holders (including those expected to receive the diploma), Japanese returnees (educated abroad), working adults, and those capable of enrolling in English courses (IGS).

- **Phoenix Entrance Examination**
  (For senior citizens)

  Hiroshima University has an entrance examination for senior citizens, thereby responding to society's needs for lifelong learning.

#### Entrance Examination by Recommendation

- **Entrance Examination by Recommendation**

  Candidates are evaluated in a multifaceted and comprehensive manner. Their academic abilities in a broad range of subjects, their extracurricular activities in senior high school, and other achievements are assessed via their application documents and an interview.

- **Entrance Examination by Recommendation for the Department of Medicine, School of Medicine ("Hometown quota")**

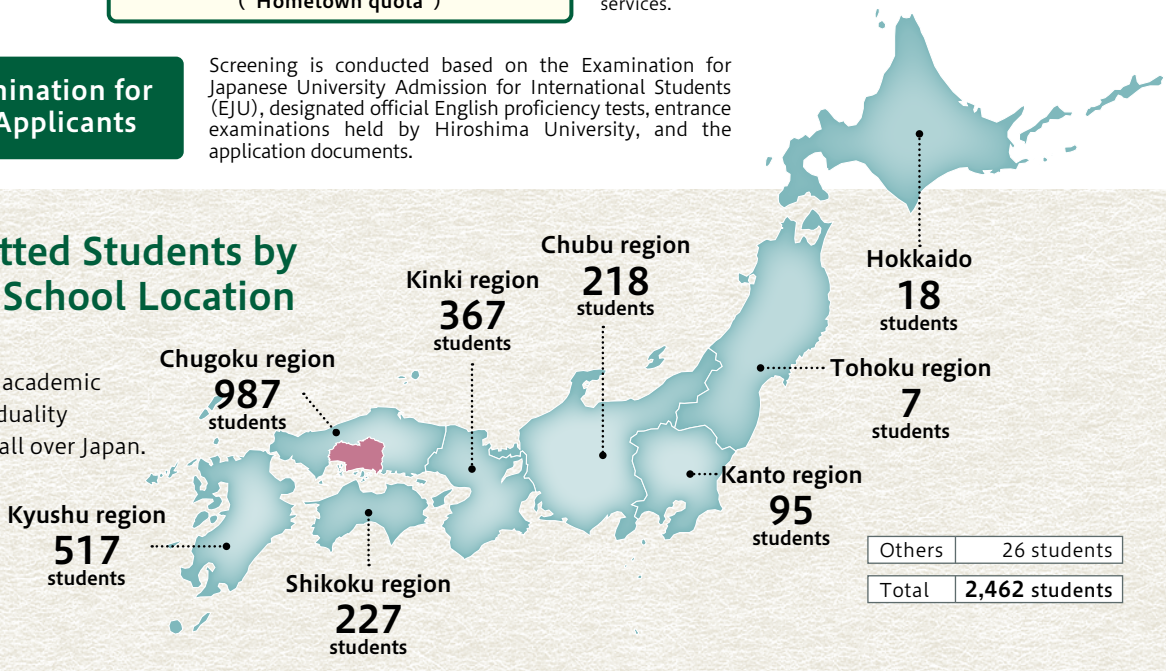
  A "Hometown quota" is set up for applicants from Hiroshima Prefecture for the purpose of developing future medical professionals who will engage in community health care services.

### 3 Entrance Examination for International Applicants

Screening is conducted based on the Examination for Japanese University Admission for International Students (EJU), designated official English proficiency tests, entrance examinations held by Hiroshima University, and the application documents.

## Newly Admitted Students by Senior High School Location (AY 2019)

Students with proven academic ability and rich individuality gather together from all over Japan.




| | |
|---|---|
| Others | 26 students |
| Total | 2,462 students |

# STUDENT SUPPORT

Hiroshima University has a well-developed system of support that meets students' needs relating to their pursuit of studies, daily life, career development, and financial situation. Various forms of assistance are available to enable each and every student to have a fruitful student life.

## Support for Career Development

**Hiroshima University offers various programs that constitute an integrated system of support for career development for undergraduate and postgraduate students and young researchers.**

### Career Design and Job Selection Support Available from the First Year

- Lectures in the Introduction to University Education, a compulsory course for first-year students
- Internships
- Career guidance (general education seminar)
- Career-oriented general education subjects
- Introduction of university-operated support services

### Job Search Support Programs for Second-from-Last Year Students

- Employment search guidance and seminar
- Job search support tour
- Distribution of handbooks on employment search
- Career development and job search counseling
- Support through the orientation and employment search system (via the student information portal MOMIJI)

### Human Resource Development Support Programs for Young Researchers

- Hiroshima University Special Postdoctoral Researchers Program
- Practical Program for career and skill development
- Career development counseling for doctorate holders and candidates
- Core IT system, HIRAKU-PF (Young Researchers' Portfolio)

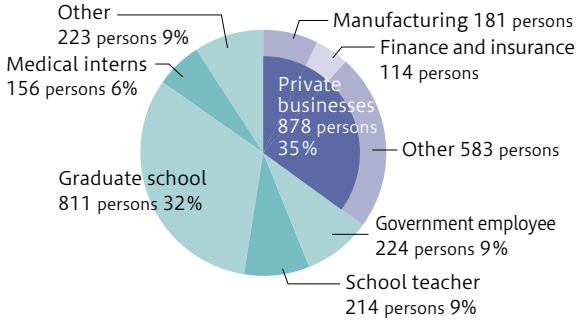
### Global Career Design Center

Staffed by academic faculty members and advisors who have worked in the divisions of personnel affairs, recruitment, education, and overseas operation of private businesses, the Center provides all students (domestic and international) and young researchers with comprehensive support for their career design and employment search in collaboration with HU's undergraduate and graduate schools.

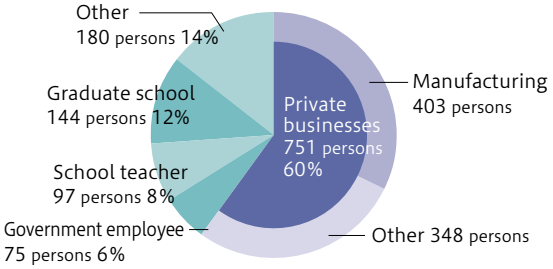
### Employment Status

(students graduating/completing in AY 2018)

#### Undergraduate School (2,506 graduates)




#### Graduate School (1,247 students completing)




#### Main Employers

〈Private sector〉 The Chogoku Electric Power Company, Incorporated; Mazda Motor Corporation; The Hiroshima Bank Ltd.; Micron Memory Japan, G.K.; Mynavi Corporation; Mitsubishi Electric Corporation; TOYOTA MOTOR CORPORATION; Fujitsu Limited; NIPPON TELEGRAPH AND TELEPHONE WEST CORPORATION; TOTO LTD.; NEC Corporation; Nippon Steel Corporation; Tokio Marine & Nichido Fire insurance Co., Ltd.; Japan Broadcasting Corporation; Benesse Corporation; Kao Corporation; All Nippon Airways Co., Ltd.; Sojitz Corporation; Otsuka Pharmaceutical Co., Ltd.; MEGMILK SNOW BRAND Co., Ltd.
〈Public sector〉 Hiroshima Prefecture, Hiroshima City, Chugoku Transport and Tourism Bureau, Hiroshima Regional Taxation Bureau, Chugoku Local Finance Bureau, Hiroshima Regional Labor Bureau, Ministry of Defense, Chugoku-Shikoku Agriculture Bureau
〈Teaching posts〉 Hiroshima Prefectural Board of Education, Oita Prefectural Board of Education, Ehime Prefectural Board of Education, Fukuoka Prefectural Board of Education, Shiga Prefectural Board of Education, etc.

## Support for Studies and Daily Life

### Tutor System

Each student is supervised by several academic faculty members serving as tutors and representing different departments and courses. The tutors provide support for the overall student life, including studies and daily problems from entrance to graduation.

### Peer Support Room

This counseling room for students is operated by students who have received instruction from professional counselors. Students can confide in their peers about their problems in their university lives. Student counselors guarantee confidentiality and listen to their counselees attentively and patiently. As the need arises, the Peer Support Room refers counselees to professional institutions on or off campus.

### Accessibility Center

The Center assists students with disabilities in their pursuit of studies, advises on accessibility, and conducts accessibility training programs. In AY 2006, Hiroshima University was the first in Japan to inaugurate an accessibility leader training program. By AY 2017, 1,181 accessibility leaders have been active at 14 universities, including HU, three corporations, and two government agencies in Japan.

### Health Service Center

Healthcare professionals provide physical and mental health counseling services, medical check-ups, medical care, and first aid.

## Financial Support

**Hiroshima University Phoenix Scholarship・Splendor Scholarship Program**

Hiroshima University's original scholarship to assist students demonstrating excellent academic results while experiencing difficulty in starting or continuing university education due to economic reasons.

There are also various other financial support systems to allow students to pursue their studies regardless of their economic situation:

- **Hiroshima University Excellent Student Scholarship**
- **Admission Fee Exemption/Deferment System**
- **Tuition Fee Exemption System**
- **Hiroshima University Alumni Association Student Support Project**
- **Hiroshima University Education and Research Support Foundation Student Support Project**

Benefitting society with its education and research achievements

# A University Open to Society, Pro

## Hiroshima University's Collaborative Research and Other Collaborative Endeavors with Corporate and Governmental Partners Have Resulted in Various Technologies and Products.

●Responding to wide-ranging society/industry needs as a research university

### Collaborative/Sponsored Research

Hiroshima University promotes collaborative researches between its researchers and corporate researchers. The university's researchers also carry out researches commissioned by private corporations and other external parties.

Number of collaborative/sponsored research projects accepted in AY 2018

**380** projects

* Including projects not generating research expenses

●Enhancing research capabilities through organizational collaboration

### Comprehensive Research Agreements

Hiroshima University promotes comprehensive research collaboration, responding to structured and continued R&D needs of private corporations and other external partners.

〈Companies and organizations that have recently signed an agreement with Hiroshima University〉
Japan Health Insurance Association Hiroshima Chapter; Chugoku Sangyo Co., Ltd.; Waseda University; RIKEN; Fukushima Prefecture; AOHATA Corporation; Hirayama Ikuo Silk Road Museum; Hiroshima City; Balcom Co., Ltd.; Hiroshima Prefecture

Number of agreements signed (as of April 1 2019)

**82** agreements

●Conducting a range of support projects

### Venture Business Startup Support

◆Training, provision of information, and funding support for business startup
◆Loan of incubation offices
◆Preferential use of Hiroshima University's intellectual properties
◆Hiroshima Entrepreneurship Program Seeds Course
… and more

The number of Hiroshima University start-ups (as of April 1 2019)

**61** companies (cumulative)

●Operating on-campus research bases jointly with corporate partners

### Collaborative Research Laboratory

Collaborative Research Laboratory aims to promote and enhance collaborative research activities by accepting funds and researchers from companies and other organizations, as well as providing researchers, facilities, and equipment.
◆Duration: Two to five years (renewable)
◆Operated under an agreement between a company and Hiroshima University
◆Staff: Professor of Collaborative Research Laboratory, Associate Professor of Collaborative Research Laboratory and other,* academic faculties at Hiroshima University (concurrent appointment), post-doctoral fellows, etc. (as needed)
* One or more members to be appointed from companies, universities and other institutes.

The number of Collaborative Research Laboratories (as of April 1 2019)

**19** laboratories

●Opening on-campus research centers jointly with corporate partners

### Center for Collaborative Research with External Organizations

Facilities are set up on HU campus for collaborative research with corporate partners and other external organizations. Inter-organizational collaboration fosters new value-sharing collaborative research and human resource development.
◆Duration: Five to ten years (renewable)
◆Staff: Director and staff, as the need arises

Number of Centers for Collaborative Research with External Organizations (as of April 1 2019)

**2** research centers

●Supporting industrial development with accumulated knowledge and information

### Technical Consultation, Company Visits, Hiroshima University Phoenix Cooperative Consortium

HU provides technical consultation services to corporate and other external partners working on technical issues and planning future development projects. HU Phoenix Cooperative Consortium provides reinforced support to the industrial community through training for young personnel, on-site lectures, and research assistance.

## Major Programs Conducted in Industry-Academia-Government

Digitalizing manufacturing to promote community-level innovation

### Digital Monozukuri (Manufacturing) Education and Research Center

To respond to the need for digitalizing manufacturing, an imminent challenge facing local communities, the center is engaged in a broad range of R&D and human resource development relating to model-based materials research, the creation of smart control and production processes, and so forth. The center also aims to construct a full-fledged academia-industry collaboration system to realize community-level innovation.

Elucidating KANSEI using neuroscience
A new academia-industry-government collaborative program

### Center of KANSEI Innovation

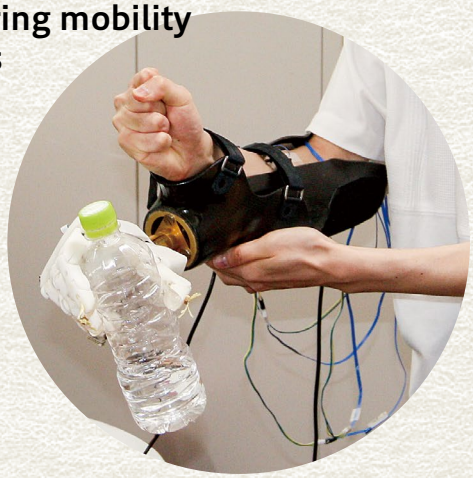
Working in collaboration with local private businesses, universities, and research institutions, the Center endeavors, by applying the latest findings of neuroscience, to develop Brain-Emotion Interfaces (BEIs) that connect people to people and people to things with KANSEI, toward the goal of realizing a spiritually rich society. The BEI technology is expected to visualize and quantify KANSEI such as excitement, liveliness, admiration, and the like, which have been considered nearly impossible to objectively evaluate. Such research findings will then be applied to the development of products and services that better respond to human and personal needs and sensibilities. The BEI technology will then revolutionize society in many diverse areas, including food, clothing, housing, mobility, education, and medicine.

# gressing Together with Society

## Advanced Technologies for Assisting Humans

### Prosthetics restoring mobility to disabled hands

The production of computer-operated prosthetics is underway. The computer instantaneously captures electric signals from the brain and translates them into hand movements. The use of a 3D printer reduces production time and cost.



Researcher
Professor
Toshio Tsuji
(Graduate School of Engineering)

Researcher
Associate Professor
Kazuhito Ujima
(Graduate School of Education)

### Practical proposals of highly accessible learning methods adapted to human characteristics

With a combined use of widely accessible devices and software, learning methods can be adapted to human characteristics, instead of human learners adapting themselves to learning methods. This is the practical solution that Prof. Ujima at the Center for Special Needs Education Research and Practice makes to elementary, secondary and tertiary students across Japan for introduction in their daily lives and school work.

## Products Born from Research Collaboration

### Chocolat Mill

Ishino Mitoku Co., Ltd.
Inoue Stone Mason Co., Ltd.

Chocolat Mill is a bean to bar chocolate-maker utilizing a granite mill to grind the beans. With this apparatus whose analogues are rare in the world, totally personalized manufacturing is possible, starting from the selection of cacao beans.

Researcher
Professor Emeritus Kiyotaka Sato
Professor Satoru Ueno
(Graduate School of Integrated Sciences for Life)

### Setokomachi (high-grade cake containing *hassaku* orange)

Nishikido Corporation

Research has confirmed that hassaku oranges are rich in Vitamin C and dietary fibers. This Japanese-style cake is made of hassaku orange jam wrapped in rice-based pastry.
It has a refined sweetness mixed well with slight bitterness.

Researcher
Professor Emeritus Toshifumi Hirata
Associate Professor Noriyuki Yanaka
(Graduate School of Integrated Sciences for Life)

### Benifuki Setouchi Lemon

Uenoya Hompo Co., Ltd.

Slices of lemon, popular fruits in the Setouchi area, and Benifuki, high-class tea leaves produced in Japan, are packed in a box. Hiroshima University designed the package and developed a branding strategy.

Researcher
Associate Professor Kentaro Yagi
(Graduate School of Education)

### Altan NA Hand Soap

Altan Co., Ltd.

This hand soap, containing persimmon tannin extract, keeps your hands clean. The smooth and creamy lather will thoroughly wash out the stains from your hands.


Researcher
Professor Tadashi Shimamoto
(Graduate School of Integrated Sciences for Life)
Professor Takemasa Sakaguchi
(Graduate School of Biomedical and Health Sciences)

### UHA Dentaclear

Mikakuto Co., Ltd.

UHA Dentaclear is a sweet tablet confectionery that helps you maintain good oral health in your daily life. It introduces a new oral care approach created together with a candy manufacturer.


Researcher
Professor
Hiroki Nikawa
(Graduate School of Biomedical and Health Sciences)

Hiroshima University's joint research has produced many other foods, industrial products, pharmaceutical drugs, and more.

## and Community Collaboration

### Collaboration in developing genome editing technology for unlimited possibilities

**Japan Science and Technology Agency (JST)**
**Program on Open Innovation Platform with Enterprises, Research Institute and Academia (OPERA)**
**Consortium for Industry-University Cooperation in Genome Editing Technology**

The Consortium works on genome editing technology, seamlessly linking basic and applied research. Genome editing technology is expected to lead to innovative value creation in such areas as bioindustry, animal and plant breeding, health, and life sciences.

### Leading new disaster reduction and risk control measures with a focus on synergistic torrential rainfall-induced disaster

**Resilience Research Center**

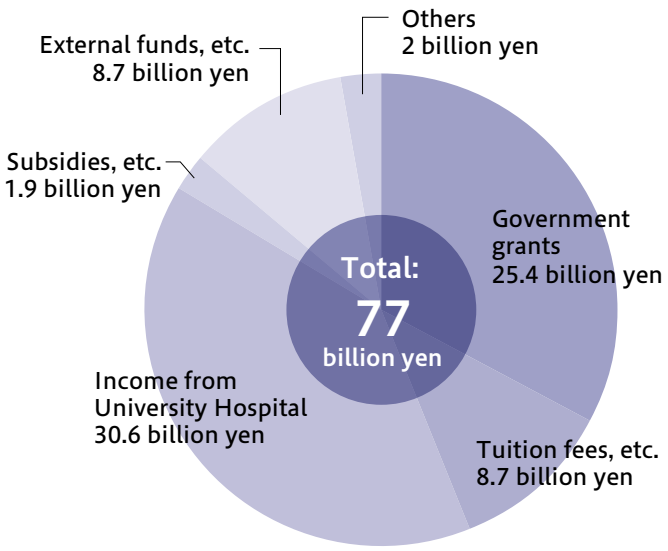
The 2018 Western Japan heavy rainfall disaster (successive heavy downpours in southwestern Japan in July 2018) caused heavy damage to the local social infrastructure, including housing, public facilities, water supply systems, roads, and railways, due to widespread mudslide, sediment flow, and inland floods, claiming over 200 lives. To prepare for heavy rainfall disasters that are intensifying due to climate change, the Resilience Research Center works to elucidate the mechanisms of disaster, support disaster-resilient community building through human resource development and collaboration with the national and local governments, private businesses, and local residents.

# FINANCE

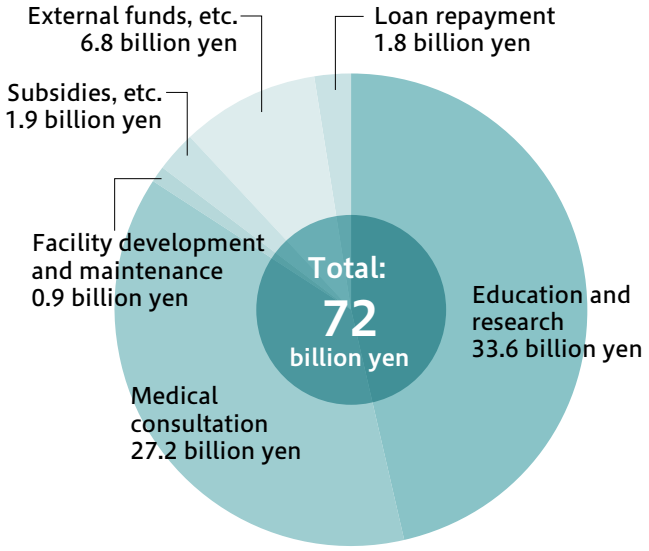
To further develop its education and research, Hiroshima University efficiently utilizes its financial resources, mainly comprising tuition fees and government grants. The university has also established funds for student support programs, among other purposes.

## Hiroshima University Income and Expenditure (AY 2018)

### 〈Income〉




### 〈Expenditure〉




Totals may not sum exactly due to rounding.

## Foundations and Funds

Hiroshima University operates a donation system to fund student support programs, assisting excellent students experiencing difficulty in continuing their studies due to economic reasons and supporting Japanese and international students studying abroad and in Japan. Corporate and individual donors can benefit from tax deductions in accordance with the sum of their donation. Donors offering above a specified amount are publicly honored or presented with a commemorative gift.

### The fund for uplifting Hiroshima University and energizing the local communities of Hiroshima has been launched (for the "75 + 75 year anniversary" of Hiroshima University).

Established 75 years after Hakushima School, the predecessor to Hiroshima University, the University will celebrate its 75th anniversary in 2024. On this occasion, the University has set up a fund for uplifting Hiroshima University and energizing the local communities of Hiroshima (for the 75 + 75 year anniversary of Hiroshima University). It will ask for donations to cover projects that create innovations in Hiroshima. By doing so, Hiroshima University will enhance support projects for social contribution, education and research environment improvement, and research activities, in addition to existing projects for student support and international exchange.

## The Hiroshima University Fund (established in AY 2007)

Projects to support students and researchers are carried out to develop "peace-pursuing, cultured individuals with an international mindset and a challenging spirit" to make Hiroshima a Top 100 university.

Objective 1

### Hiroshima University Phoenix Scholarship

Hiroshima University's original scholarship to offer 100,000 yen per month to students demonstrating excellent academic results while experiencing difficulty in starting or continuing university education due to economic reasons

●Number of beneficiaries (AY 2008-2019)
102 students

Objective 2

### START Program and START+ Program

Partial coverage of travel and accommodation expenses for participants in the START Program targeting first-year undergraduate students who have little overseas experience, and in the START+ Program designed for second- and third-year undergraduate students aimed for their independent learning

●Number of beneficiaries (AY 2010-2018)
1,655 students

Objective 3

### Support for graduate students' conference attendance

Support for graduate students attending international academic conferences held abroad, to increase their paper-reading opportunities overseas and promote their research

●Number of beneficiaries (AY2011-2018)
1,638 students

## Hiroshima University Fund with Sponsor's Title (established in AY 2015)

Hiroshima University supports international and Japanese students through projects named after donors or according to donors' wishes, to make the whole world HU's campus.

Objective 1

### Scholarship for international students

Hiroshima University has a pre-entry scholarship system in which recipients are selected prior to their arrival in Japan so as to ensure a large number of international students and globalize the campus.

Objective 2

### Scholarship for Japanese students studying abroad

Japanese students studying abroad can benefit from this scholarship established to train "peace-pursuing, cultured individuals with an international mindset and a challenging spirit" and aspire for international-scale activities.

# LECTURES

Hiroshima University hosts a range of lectures and fora featuring world-renowned researchers and leaders in their respective fields to intellectually stimulate and motivate the students.

## From Hiroshima University to the World
### – The Wisdom of World-Renowned Researchers –

**Hiroshima University invites Nobel Prize winners and other world-leading researchers to hold lecture and discussion sessions on a regular basis. This provides valuable opportunities for students who aim to become a scientist, allowing them to feel close to findings and studies that have astonished the entire world.**

**The 1st "The Wisdom from World-Renowned Researchers"** (March 7, 2016)

Sir John Gurdon

Professor, Wellcome Trust/Cancer Research UK Gurdon Institute, University of Cambridge, UK

The 2012 Nobel Prize in Physiology or Medicine

Dr. Shinya Yamanaka

Director, Center for iPS Cell Research and Application, Kyoto University, Japan

The 2012 Nobel Prize in Physiology or Medicine

**The 2nd "The Wisdom from World-Renowned Researchers"** (November 29, 2016)

Dr. Takaaki Kajita

Director, Institute for Cosmic Ray Research, University of Tokyo, Japan
Distinguished University Professor, University of Tokyo, Japan

The 2015 Nobel Prize in Physics

**The 3rd "The Wisdom from World-Renowned Researchers"** (April 5, 2017)

Sir Paul Nurse

Director, Francis Crick Institute, UK

The 2001 Nobel Prize in Physiology or Medicine

**The 4th "The Wisdom from World-Renowned Researchers"** (March 11, 2019)

Dr. Hiroshi Amano

Professor, Institute of Materials and Systems for Sustainability, Nagoya University, Japan

The 2014 Nobel Prize in Physics

**The 86th Hiroshima University Lecture Meeting** (March 27, 2018)

Dr. Muhammad Yunus

Founder of the Grameen Bank

The 2006 Nobel Peace Prize

**Commemorative Lecture Conference for the Establishment of the School of Informatics and Data Science and the Department of Integrated Global Studies in the School of Integrated Arts and Sciences** (May 16, 2018)

Dr. Yoshinori Ohsumi

Honorary Professor at Tokyo Institute of Technology's Institute of Innovative Research

The 2016 Nobel Prize in Physiology or Medicine

## Liberal Arts Education for Spreading Your Wings around the World
### – Learning from Leaders Playing International Roles –

**As part of liberal arts education, Hiroshima University invites leaders who play active roles in a variety of fields, such as sports, arts, science and business, to hold lecture meetings mainly for new undergraduate students. Their special lectures provide students with opportunities to learn the perspectives and histories of such leaders and to consider the goals of their campus lives and future dreams.**

**Lecturers in AY 2019**
(lectures held between April 17 and May 29)

Mr. Saburo Kawabuchi
Captain (advisor) of the Japan Football Association
First chairman of the J.League

Mr. Kenshi Hirokane
Manga artist

Ms. Michie Nakamaru
Opera singer
(winner of the Maria Callas Grand Prix)

Mr. Morley Robertson
International journalist

Dr. Yuji Ikegaya
Professor, Faculty of Pharmaceutical Sciences, University of Tokyo

Mr. Seijyun Ninomiya
Sports journalist

Dr. Kenichiro Mogi
Neuroscientist

Mr. Koji Ikeda
Chairman, Hiroshima Bank

Mr. Kenjiro Nomura
Baseball critic
Former manager of the Hiroshima Toyo Carp

Mr. Hirotake Yano
Chairman, Daiso Industries Co., Ltd.

(Listed in the order of the Japanese syllabary)

# CAMPUS GUIDE

Hiroshima University comprises three campuses: vast and green Higashi-Hiroshima Campus, and Kasumi Campus and Higashi-Senda Campus, both located in Hiroshima City, a locale whose name resonates with humanity's quest for international peace and cultural prosperity. On each of these campuses, students engage in study, research, and extracurricular activities, enjoying their student lives to the fullest, thanks to an environment enriched and supported by a variety of facilities and systems.

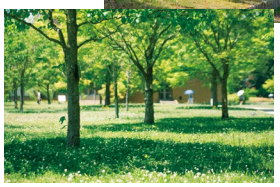
# ACADEMIC CALENDAR - HIROSHIMA UNIVERSITY

**Apr.**
- Spring Vacation
- Entrance Ceremony
- Orientation Guidance
- Start of the 1st Term Classes

**May**
- Phoenix Concert

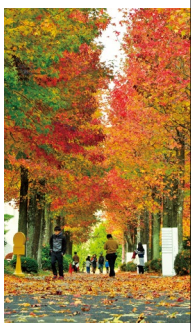
**Jun.**
- Start of the 2nd Term Classes
- Yukata Festival

**Jul.**



**Aug.**
- Summer Vacation
- Open Campus

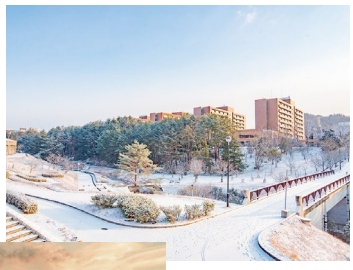
**Sep.**
- The Five Chugoku-Area Universities' Sports Competitions (summer)
- Autumn Term Commencement Ceremony



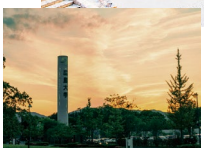
**Oct.**
- Autumn Term Entrance Ceremony
- Start of the 3rd Term Classes
- Phoenix Relay Marathon

**Nov.**
- Foundation Day (November 5)
- University Festival (Higashi-Hiroshima Campus)
- Kasumi Festival (Kasumi Campus)
- Home Coming Day
- The Five Chugoku-Area Universities' Sports Competitions (winter)
- Hiroshima University Splendor Entrance Examination (AO examination, admission on recommendation)

**Dec.**
- Start of the 4th Term Classes
- Winter Vacation



**Jan.**
- National Center Test for University Admissions



**Feb.**
- Year-End Vacation
- General Entrance Examination (February term)

**Mar.**
- Academic Degree Conferment Ceremony (graduation ceremony)
- General Entrance Examination (March term)

# EXTRACURRICULAR CLUBS AND CIRCLES

There are over 240 active groups, from clubs that have won national championships to circles that enjoy a wide variety of activities, at Hiroshima University. In AY 2018, our baseball team participated in the Japan National Collegiate Baseball Championship for the first time in 35 years, and 15 clubs were qualified to compete in nationwide events.

**Major Club Achievements (AY 2018)**

**Judo Club**
Asian Judo Open Hong Kong 2018
Women's individual 78 kg: 3rd place

**Rowing Club**
All-Japan University Championship,
men's single skulls: 2nd place
All-Japan Lightweight Rowing Championship,
men's single skulls: 7th place

**Automobile Club**
All-Japan Students Dirt Trial Championship,
men's group: 2nd place
All-Japan Students Dirt Trial Championship,
men's individual: 6th place

**Women's Football Club**
National Sports Festival of Japan, Women's Football: 5th place

**Triathlon Club**
Amakusa Takarajima International Triathlon,
general women's race: 1st place (overall)
INU Triathlon World Cup,
women age 24 and under category: 2nd place

**Track and Field Club**
Japan Track and Field Championships,
combined events, women's heptathlon: 7th place
Japan Track and Field Inter-collegiate Championships,
women's heptathlon: 6th place
Japan Track and Field Inter-collegiate Championships,
men's 400m hurdles: 8th place

# FACILITIES AT HIROSHIMA UNIVERSITY

## Spanish Plaza
〈Higashi-Hiroshima Campus〉

This semicircular plaza located near the School of Integrated Arts and Sciences building was named after the Piazza di Spagna in Rome, Italy. This is the lively center of Higashi-Hiroshima Campus, where students gather and are always crisscrossing.

## Satake Memorial Hall
〈Higashi-Hiroshima Campus〉

Constructed to commemorate the 50th anniversary of Hiroshima University's establishment, Satake Memorial Hall has a beautiful exterior designed to resemble a grand piano. The hall is used for various purposes, including academic conferences, concerts, theatrical plays and other performing arts, and local community events.

## La Place
(Mermaid Café Hiroshima University Branch)
〈Higashi-Hiroshima Campus〉

This café-bakery's name, "la place," means "the plaza" in French. Its bright interior, open to natural sunlight through the ceiling and glass walls, has a somewhat Scandinavian atmosphere. Wireless LAN allows the use of PCs and other network devices inside.

## Student Plaza
〈Higashi-Hiroshima Campus〉

Various services are provided here, covering all aspects of student life from daily life to employment search. In the free space for students, Japanese and international students of various departments are often seen interacting there.

## Hiroshima University Museum
〈Higashi-Hiroshima Campus〉

Hiroshima University Museum is an Eco-museum. In the area, there is the main museum, five satellite museums, and the Discovery trail (a natural promenade across the vast Higashi-Hiroshima Campus) linking these museums. In addition to its permanent exhibition, the Museum organizes theme-based exhibitions and events.



Stuffed and skeletal specimens of species of birds and mammals that live on and around Higashi-Hiroshima Campus are also on display.

### Main Museum

This is the central facility of the Hiroshima University Museum, which introduces the university and exhibits rare artifacts and documents relating to the local environment and culture, such as fossils and stuffed specimens. The Main Museum comprises four zones: The University's History, Outer Space and Earth, Satoumi, and Satoyama. It also serves as the information center for the whole museum complex.

### Satellite Museums

Satellite Museums exhibit artifacts and documents relating to the specializations of the respective schools and centers concerned. The Satellite Museums are situated at five locations: the Archaeological Research Section, the School of Applied Biological Science, the School of Science, the School of Letters, and the Central Library.

Satellite Museum at the Archaeological Research Section

### Discovery Trail (Hakken-no-komichi)

Along this trail, you can enjoy Nature in changing seasons and observe a variety of animals and plants that live on Higashi-Hiroshima Campus, including some endangered species, and numerous ruins of pre-historic and later ages.

For further information Hiroshima University official website Research Institutes ▶ Libraries and Museums

## Starting from January 2020, the Hiroshima University campuses will become totally smoke-free.

To thoroughly implement measures for the prevention of second-hand smoking and to further promote anti-smoking education, all Hiroshima University campuses will become totally smoke-free, starting from January 2020. HU has announced this decision in its "Hiroshima University No-smoking Declaration," published in January 2019.

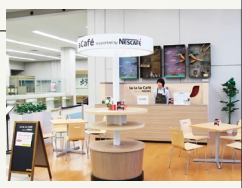

For further information Hiroshima University official website NEWS ▶ Jan 2019

## Libraries

Hiroshima University has five libraries which hold approximately 3.5 million volumes in total, one of the largest university collections in Japan. The Central library has an automatic retrieval system in which books can be accessed by computer operation. A collection of school textbooks, from the Edo period to the present, and many other valuable documents are also stored at the libraries.

### Facility Outline (as of 2019)

| Library/location | | Surface area | No. of seats for reading | No. of volumes | Main categories in the collection |
|---|---|---|---|---|---|
| Central Library | Higashi-Hiroshima Campus | 16,641㎡ | 992 seats | Approx. 2.28 million | Books and periodicals in the fields of education, other human and social sciences, and natural sciences |
| East Library | | 3,442㎡ | 277 seats | Approx. 0.31 million | Books and periodicals in the fields of engineering, biology, and other natural sciences |
| West Library | | 6,335㎡ | 412 seats | Approx. 0.62 million | General books, study guides and periodicals in all subjects |
| Kasumi Library | Kasumi Campus | 2,382㎡ | 348 seats | Approx. 0.20 million | Books and periodicals in the fields of medicine, dentistry, pharmacology, and public health |
| Higashi-Senda Library | Higashi-SendaCampus | 685㎡ | 81 seats | Approx. 0.06 million | Books and periodicals in law and economics |



In cooperation with Nestle Japan, a coffee shop (la la la Cafe) was opened on July 2, 2018.

### Databases and Services

The libraries have databases for newspaper and periodical article search and other purposes. At the libraries, audiovisual materials, including movies, music, and language learning software, are available. Library staff is ready to help visitors to locate materials and information necessary for their studies and research.

### Free Learning Spaces, BIBLA

The libraries are provided with free spaces for students' activities, such as group work, discussion, preparation for presentations, and independent study. Movable whiteboards available for free use and spacious tables perfect for spreading out books and documents are particularly appreciated by users. BIBLA in the Kasumi Library is open around the clock to students whose home campus is Kasumi.

### Writing Center

This is where students can turn for help when they experience difficulty with academic writing while preparing class projects, term papers, and the like. Graduate students who underwent specialized training in writing instruction serve as tutors and use dialogue, brainstorming, and other techniques to help writers to write better. Assistance in academic writing in English is also available.

For further information Hiroshima University official website Research Institutes ▶ Libraries and Museums

### Higashi-Senda Innovative Research Center 〈Higashi-Senda Campus〉

Here, liberal arts classes are held for students in medical and related schools based on Kasumi Campus in Hiroshima City. The Center is also designed to house inter-university and academia-industry joint educational and research projects.

### Institute of History of Medicine 〈Kasumi Campus〉

The present Hiroshima University Institute of History of Medicine was completed in 1999, retaining almost the same design as that of the former Institute of History of Medicine, which was used as an arms depot of the Hiroshima Army Weaponry Factory during the war. Some of the bricks and windows used for the former Institute of History of Medicine are reused for the current building. It is designated as an atomic-bombed building.

### Legal Service Center 〈Higashi-Senda Campus〉

The Center was established in 2005 for the Hiroshima University Law School (professional postgraduate school) to fulfill the role of social contribution. It offers free legal counseling concerning civil affairs once a week.

## Hiroshima University Hospital 〈Kasumi Campus〉

Based on the concepts of "practice of holistic medical care," "fostering of top-quality medical professionals," and "pursuit of new medical treatments," Hiroshima University Hospital operates as a hub medical center in the Chugoku/Shikoku area, offering advanced medical care and keeping abreast with rapid progress in medicine.

### Partnership with Local Professional Sports Teams

Hiroshima serves as a base for professional sports teams, including Hiroshima Toyo Carp and Sanfrecce Hiroshima F.C. In active cooperation with these teams, Hiroshima University contributes to improving their performance through measurement of the physical fitness of newly joined players, and daily healthcare guidance.

### Disaster Preparedness

In the case of a disaster, Disaster Medical Assistance Teams (DMAT) are mobilized to provide medical assistance in affected areas. At the time of the 2018 Japan floods, the JMAT (Japan Medical Association Team, in charge of infectious disease control), DPAT (Disaster Psychiatric Assistance Team), JRAT (Japan Rehabilitation Assistance Team), and emergency support nurses and oral care team were also dispatched. A total of 260 professionals, mainly comprising physicians and nurses, provided medical assistance in the affected areas.

For further information Hiroshima University official website Hospital

# HIROSHIMA UNIVERSITY IN FIGURES (as of May 1, 2019)

**Undergraduate students**
10,695 students

**Postgraduate students**
4,575 students

**Staff members**
3,476 members
1 for every 4.4 students

**Doctorates conferred in AY 2018**
330 students

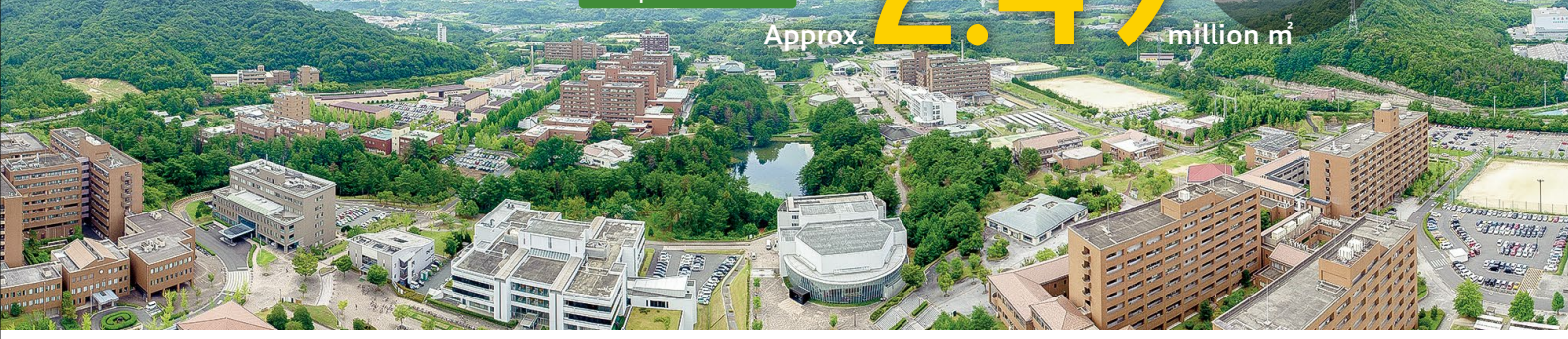
**Undergraduate graduates**
Cumulative 139,410 students

**Thomson Reuters Impact Factor rankings 2015 and 2016 (space science category)**
1st Among all universities in Japan

**Volumes in collections at the libraries**
Approx. 3.47 million volumes
Approx. 227 volumes per student

**Annual visitors to the libraries**
Approx. 1.13 million visitors
3,830 visitors per open day

**Total site area of Higashi-Hiroshima Campus**
Approx. 2.49 million m²
Equivalent to 49 Hiroshima Municipal Baseball Stadiums (Mazda Stadium)



# HISTORY

Hiroshima University has nine schools as its forerunners, which is the largest number in Japan. Firstly, seven schools were integrated, namely Hiroshima Higher Normal School (established in 1902), Hiroshima University of Literature and Science (established in 1929), Hiroshima Higher Technical School (formerly Hiroshima High Institute of Technology, established in 1920), Hiroshima High School (established in 1923), Hiroshima Women's Higher Normal School (formerly Hiroshima Girls' High School, established in 1887), Hiroshima Normal School (formerly Hakushima School, established in 1874), and Hiroshima Prefectural Training Institute for Teachers of Young Men's Schools (formerly Hiroshima Prefectural Training Institute for Teachers of Vocational Supplementary Schools, established in 1922). Secondly, Hiroshima Municipal Higher Technical School (established in 1945) was annexed, and Hiroshima University came into being under the new university system. In 1953, Hiroshima Medical College was reorganized under the new system (formerly Hiroshima Prefectural Medical School, established in 1945) and merged into Hiroshima University.

## 1874
- Establishment of the schools that were later reorganized and integrated into Hiroshima University

## 1945
- Atomic bombing in Hiroshima City

## 1949
- Establishment of Hiroshima University (with six undergraduate faculties, four annex schools, and one research center) as one of the national universities of Japan under the new educational system

## 1950
- Opening ceremony of Hiroshima University
- Declaration by the first President Tatsuo Morito:Hiroshima University will be "a single unified university, free and pursuing peace"

## 1953
- Integration of Hiroshima Prefectural Medical College into Hiroshima University
- Establishment of Hiroshima University Graduate Schools (three schools)

## 1956
- Adoption of the Hiroshima University crest

## 1957
- Adoption of the Hiroshima University song

## 1972
- Decision by the Council for the integration and relocation of Hiroshima University

## 1982
- Opening of Higashi-Hiroshima Campus

## 1995
- Completion of university integration and relocation

## 1999
- The 50th anniversary

## 2002
- Establishment of Hiroshima University's first overseas base in Beijing, China

## 2004
- Reorganization of Hiroshima University as a national university corporation

## 2006
- Introduction of the Hiroshima University Program of Specified Education and Study

## 2010
- Establishment of the Student Plaza

## 2016
- Opening of the Higashi-Senda Innovative Research Center

## 2018
- Establishment of the School of Informatics and Data Science

## 2019
- Establishment of two new Graduate Schools
- The 70th anniversary

# CAMPUS LOCATION & ACCESS


❶〈Hiroshima City (Midori District)〉
Elementary School
Junior High School
Senior High School

❷〈Higashi Hiroshima City〉
Kindergarten

❸〈Hiroshima City (Shinonome District)〉
Elementary School
Junior High School

❹〈Mihara City〉
Kindergarten
Elementary School
Junior High School

❺〈Fukuyama City〉
Junior High School
Senior High School


## Access to Higashi-Hiroshima Campus

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Narita Airport | By Air | 80~100min. Bus | Haneda Airport | 90min. Plane | Hiroshima Airport | 25min. Bus / 15min. Bus | Shiraichi Sta. | 10min. Local Train | Saijo Sta. | 20min. Bus | Higashi-Hiroshima Campus | |
| | By JR | 80min. Limited Exp. | Tokyo Sta. | 200~250min. Shinkansen | Fukuyama Sta. | 40min. Shinkansen | | | Higashi-Hiroshima Sta. | 15min. Bus* or Taxi | | |
| Kansai Airport | By JR | 60min. Limited Exp. | Shin-Osaka sta. | 70min. Shinkansen | Fukuyama Sta. | 40min. Shinkansen | | | Higashi-Hiroshima Sta. | 15min. Bus* or Taxi | | |

＊HU-bound bus service operated only on weekday mornings

## Access to Kasumi Campus

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Narita Airport | By Air | 80~100min. Bus | Haneda Airport | 90min. Plane | Hiroshima Airport | 45min. Bus / 15min. Bus | Shiraichi Sta. | 50min. Local Train | Hiroshima Sta. | 20min. Bus | Kasumi Campus | |
| | By JR | 80min. Limited Exp. | Tokyo Sta. | 250min Shinkansen | | | | | Hiroshima Sta. | 20min. Bus | | |
| Kansai Airport | By JR | 60min. Limited Exp. | Shin-Osaka sta. | 90min. Shinkansen | | | | | Hiroshima Sta. | 20min. Bus | | |

## Access to Higashi-Senda Campus

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Narita Airport | By Air | 80~100min. Bus | Haneda Airport | 90min. Plane | Hiroshima Airport | 45min. Bus / 15min. Bus | Shiraichi Sta. | 50min. Local Train | Hiroshima Sta. | 30min. Tram | Higashi-Senda Campus | |
| | By JR | 80min. Limited Exp. | Tokyo Sta. | 250min Shinkansen | | | | | Hiroshima Sta. | 30min. Tram | | |
| Kansai Airport | By JR | 60min. Limited Exp. | Shin-Osaka sta. | 90min. Shinkansen | | | | | Hiroshima Sta. | 30min. Tram | | |

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