



HIROSHIMA UNIVERSITY

2024



Row out into a sea of chaos;
go beyond the horizon of creativity



PROSPECTUS

2023 - 2024

ROW OUT INTO A SEA OF CHAOS; GO BEYOND THE HORIZON OF CREATIVITY

Hiroshima University opened its doors as a peace-pursuing university in 1949, four years after the atomic bomb was dropped, amidst the remaining scars of the nuclear devastation. Since then, through world-leading cutting-edge research and advanced human resource development, we have matured into one of Japan's leading comprehensive research universities with 12 schools, four graduate schools, and one research institute, making contributions to the development of society.

Aside from honing our research and educational prowess, we are also making our presence known on the international stage. We have been newly selected in AY 2022 as a center for the World Premier International Research Center Initiative (WPI) by the Ministry of Education, Culture, Sports, Science and Technology (MEXT) and participated in May 2023 in the "U.S.-Japan University Partnership for Workforce Advancement and Research & Development in Semiconductors (UPWARDS) for the Future," a collaborative project with Micron Technology, Inc. and 11 universities from Japan and the U.S.

We have recently established five priority initiatives as "President 5 Initiatives for Peace Sciences: Towards a university that creates peace" in order to realize our ideal vision for our university. Utilizing our university's strength of "Convergence of Knowledge" and moving towards our goal of becoming a world-class education and research center, we will be focusing on the five issues of semiconductor ecosystem formation; public health security through pharmaceutical development, regenerative medicine, etc.; radiation disaster management; establishing an ocean and maritime Asian center of excellence; and food security.

In 2024, Hiroshima University will celebrate its 75th anniversary and the 150th anniversary of the founding of its oldest predecessor, Hakushima School. We aim to embody our catchphrase, "Row out into a sea of chaos; go beyond the horizon of creativity," while staying unwaveringly true to one of our ideals, "The Pursuit of Peace," in cultivating cultured global citizens who seek peace and challenge themselves. We will continue to strive toward our goal of becoming a "University of Worldwide Repute and Splendor for Years into the Future."

OCHI Mitsuo

President
Hiroshima University

Hiroshima University participates in Japan-U.S. semiconductor partnership

Hiroshima University (HU) has joined the Japan-U.S. semiconductor collaboration “UPWARDS for the Future,” based on a partnership with Micron Technology, Inc., aiming to strengthen semiconductor research and development and create a training center for human resources, including female engineers. The 11 participating universities, including HU, were selected for their advanced curricula as well as their achievements in realizing diversity, equality, and inclusion.



©photo by the White House

U.S. President Joe Biden, who was in Hiroshima for the G7 Hiroshima Summit, was also present at the press conference that followed the MOU (Memorandum of Understanding) signing ceremony held on May 21, 2023 in Hiroshima City.



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.

Hiroshima University 75+75th anniversary commemorative project

In 2024, Hiroshima University will celebrate the 75th anniversary of its establishment and the 150th anniversary of the founding of its oldest predecessor school. In addition to the catchphrase “Row out into a sea of chaos; go beyond the horizon of creativity” and the creation of a new logo, we are also holding various commemorative events, including public seminars and lectures.



Information on the events/commemorative projects:

<https://150th.hiroshima-u.ac.jp/event/>
(Page in Japanese)



Relocation of the School of Law to Higashi-Senda Campus completed

In April 2023, the School of Law's Day Course and the graduate-level programs were relocated to the Higashi-Senda Campus (Naka Ward, Hiroshima City), becoming a new base for the humanities and social sciences with a focus on legal training. Furthermore, we aim to make the campus function as a base for regional collaboration, including recurrent education/lifelong learning, disaster prevention and mitigation, and exchange between domestic/international students and companies/governments.



School Building L exterior



Community Collaboration Floor SENDA LAB (School Building L 5F)

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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.

Organization for Education and Research (As of April 1, 2023)

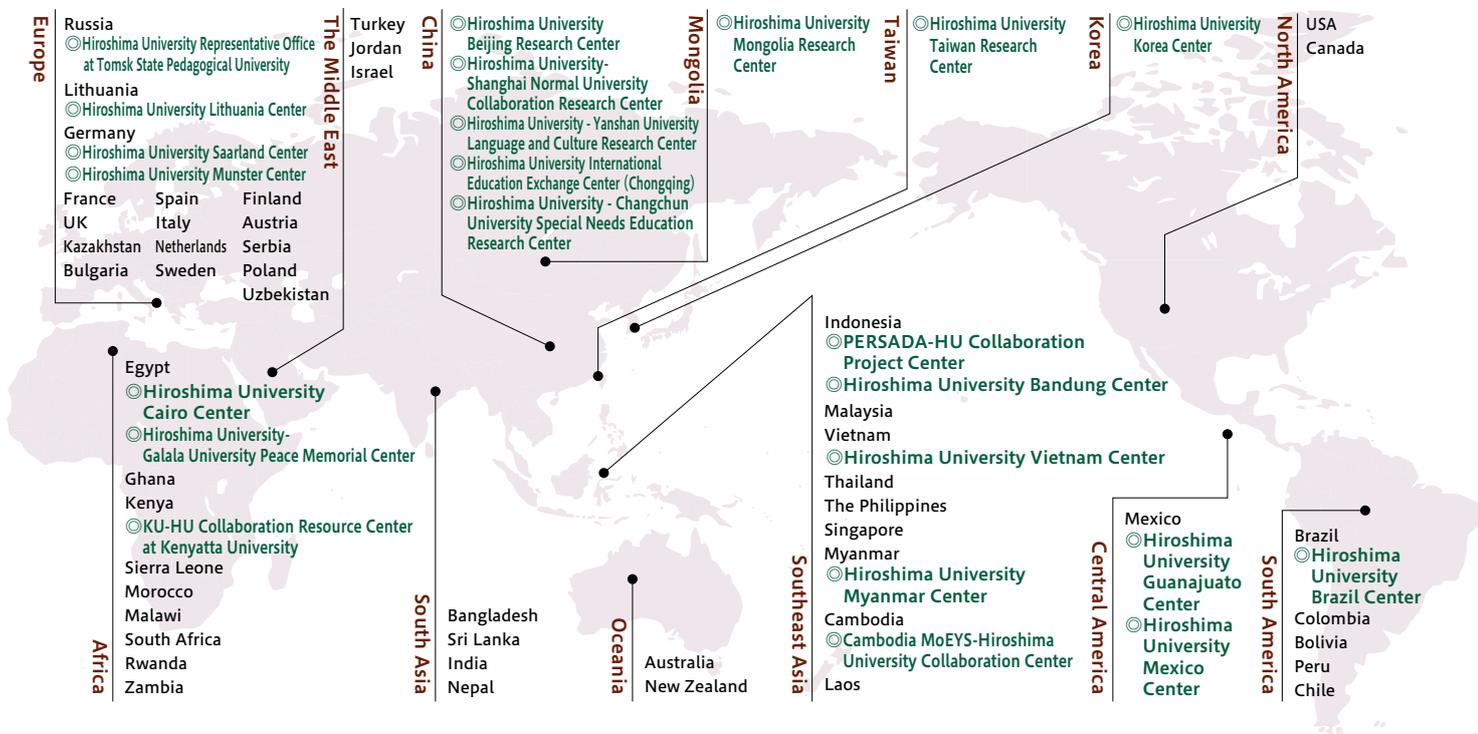
National University Corporation Hiroshima University

Schools (undergraduate)		Libraries	
School of Integrated Arts and Sciences	Department of Integrated Arts and Sciences	Central Library	
	Department of Integrated Global Studies	East Library	
School of Letters	Department of Humanities	West Library	
School of Education	Cluster 1 (School Education)	Kasumi Library	
	Cluster 2 (Science, Technology and Society Education)	Higashi-Senda Library	
	Cluster 3 (Language and Culture Education)		
	Cluster 4 (Life-long Activities Education)		
	Cluster 5 (Fundamentals for Education and Human Development)		
School of Law	Department of Law	Headquarters for Education	
School of Economics	Department of Economics	Research Institute for International Advanced Studies	
	Center for Research on Regional Economic Systems	International Institute for Sustainability with Knotted Chiral Meta Matter	
School of Science	Department of Mathematics	National Joint Usage Facilities	
	Department of Physics	Hiroshima Synchrotron Radiation Center	
	Department of Chemistry	Joint Usage Facilities for National Universities in the Chugoku/Shikoku Area	
	Department of Biological Science	Saijo Seminar House	
	Department of Earth and Planetary Systems Science	Joint Education and Research Facilities on Campus	
	Center for Developing Pioneers in Science	Research Institute for Nanodevices	
School of Medicine	Program of Medicine	Research Institute for Higher Education	
	Program of Health Sciences	Information Media Center	
School of Dentistry	Program of Dentistry	Natural Science Center for Basic Research and Development	
	Program of Oral Health Sciences	Morito Institute of Global Higher Education	
School of Pharmaceutical Sciences	Program of Pharmaceutical Sciences	Health Service Center	
	Program of Medicinal Sciences	The Center for Peace	
	Experimental Station of Medicinal Plants	Environmental Research and Management Center	
School of Engineering	Cluster 1 (Mechanical Systems, Transportation, Material and Energy)	Hiroshima University Museum	
	Cluster 2 (Electrical, Electronic and Systems Engineering)	Beijing Research Center	
	Cluster 3 (Applied Chemistry, Biotechnology and Chemical Engineering)	Hiroshima Astrophysical Science Center	
	Cluster 4 (Civil Engineering and Architecture)	Institute for Foreign Language Research and Education	
School of Applied Biological Science	Department of Applied Biological Science	Hiroshima University Archives	
	Livestock Research Center	Institute of Sport	
	Training and Research Vessel <i>TOYOSHIO MARU</i>	HiSIM Research Center	
School of Informatics and Data Science	Department of Informatics and Data Science	Amphibian Research Center	
Graduate Schools		Translational Research Center	
Graduate School of Humanities and Social Sciences	Division of Humanities and Social Sciences	Resilience Research Center	
	Division of Educational Sciences	Center for Brain, Mind and KANSEI Sciences Research	
	Division of Professional Development for Teachers and School Leaders	Hiroshima University Genome Editing Innovation Center	
	Division of Law School	Hiroshima University Digital Monozukuri (Manufacturing) Education and Research Center	
Graduate School of Advanced Science and Engineering	Division of Advanced Science and Engineering	Education and Research Center for Artificial Intelligence and Data Innovation	
	Joint International Master's Programme in Sustainable Development (Hiroshima University – University of Graz)	The IDEC Institute	
Graduate School of Integrated Sciences for Life	Division of Integrated Sciences for Life	Academic-Environment Social Governance Science and Technology Research Center	
Graduate School of Biomedical and Health Sciences	Division of Biomedical Sciences	Town & Gown Institute of Innovation for the Future	
	Division of Integrated Health Sciences	Hiroshima University PSI GMP Center	
Graduate School of Innovation and Practice for Smart Society		The Institute for Diversity & Inclusion	
Advanced Course		Seto Inland Sea Carbon-neutral Research Center	
Special Course of Special Support Education		Joint Usage Facility on Campus	
Attached Research Institute		Harassment Consultation Office	
Research Institute for Radiation Biology and Medicine	Division of Radiation Information Registry	Attached Schools	
Hospital			

Overseas Network and Bases (As of May 1, 2023)

Hiroshima University has international exchange agreements at the university level in 56 countries and regions, as well as at the faculty level in 55 countries and regions. It has overseas bases in 15 countries/regions: Brazil, Cambodia, China, Egypt, Germany, Indonesia, Kenya, Korea, Lithuania, Mexico, Mongolia, Myanmar, Russia, Taiwan and Vietnam.

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



International Exchange Agreements

Inter-university
 56 countries and regions
 354 organizations
 400 agreements

Inter-faculty
 55 countries and regions
 374 organizations
 412 agreements



Concluded an inter-university agreement with Purdue University (U.S.A.) (May, 2023)



Opening of the Hiroshima University Munster Center (May, 2019)

University Offices Outside Hiroshima Prefecture

The Tokyo Office supports Hiroshima University's teachers and staff in their activities in the Tokyo area and students in their job-hunting activities. The Osaka and Fukuoka Branches provide consultation services on college admission. In the fall of 2022, "Kiteminsai Lab" was opened for use as a coworking space and to sell industry-academia collaboration products.

Tokyo Office

2F Saiwai Building, 1-3-1 Uchisaiwai-cho, Chiyoda-ku, Tokyo



Office of Admissions, Osaka Branch

No. 139, Urban Office Kitahama, 3F, T·M·B Doshomachi Bldg., 2-1-10 Doshomachi, Chuo-ku, Osaka City, Osaka

Office of Admissions, Fukuoka Branch

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

Kiteminsai Lab

2F Hiroshima JP Building, 2-62 Matsubara-cho, Minami-ku, Hiroshima City



Attached Schools

The basic principle and role of the attached 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 kindergarten, elementary, middle school, and high school 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.

Midori Area (Hiroshima City)



Hiroshima University Elementary School



Hiroshima University High School

Shinonome Area (Hiroshima City)



Hiroshima University Elementary School, Shinonome



Hiroshima University Junior High School, Shinonome

Higashi Hiroshima Area (Higashi Hiroshima City)



Hiroshima University Kindergarten

Mihara Area (Mihara City)



Hiroshima University Kindergarten, Mihara



Hiroshima University Elementary School, Mihara



Hiroshima University Junior High School, Mihara

Fukuyama Area (Fukuyama City)



Hiroshima University High School, Fukuyama



LIBERAL ARTS EDUCATION IMPROVES JAPAN'S SCIENTIFIC AND TECHNOLOGICAL CAPABILITIES

President, Hiroshima University

OCHI Mitsuo, M.D., Ph.D.

Director, International Institute for
Advanced Studies
(Ex-President, Kyoto University)

MATSUMOTO Hiroshi, Ph.D.

Dr. Hiroshi Matsumoto, director of the International Institute for Advanced Studies (Keihanna Science City), is a leading doctor of engineering in space science and space radio engineering in Japan. Dr. Matsumoto, who has served as the 25th President of Kyoto University (2008-2014) and President of RIKEN (2015-2022), spoke with President Ochi. They had a heart-to-heart conversation about university education and the future of science and technology in Japan, with Dr. Matsumoto sharing his childhood memories and his efforts as president.

My mother was stricter about studies than daily living

Ochi: Dr. Matsumoto, you came to our university in 2018 when you were the president of RIKEN and helped us conclude agreements regarding research cooperation and human resource development, as well as establishing a joint research base. Currently, I hear that you are increasingly active as the director of the International Institute for Advanced Studies, whose basic philosophy is to “conduct research for the future and happiness of mankind.” I’m looking forward to hearing about so many things today. First of all, what kind of child were you when you were young?

Matsumoto: I was born in Zhangjiakou City, Hebei Province, China, but we moved to Yamatokoriyama City in Nara Prefecture, my current home city, when I was one year old, so I don’t remember much about what it was like there. We lived at my grandfather’s house at first, but from around the age of five, our family of five ended up living in a rented residence with only one 10 m² room due to certain circumstances. Life was tough, and my mother was very strict about studying. I got scolded for

scoring anything less than 100 on a test. If I showed a test score of 99, she would angrily say: “What happened to the one point? You must not have been paying attention in class!” My study method was overnight cramming. Before the test, I studied by reading out loud and memorizing the contents of my textbook and notes.

Ochi: She was very strict about your studies, I see. But I have to ask, you memorized not only what the teacher taught in the lessons but also all the notes and textbooks?

Matsumoto: I didn’t dislike studying, but I didn’t particularly like it either. It’s not something to brag about because I relied on my memory alone to do well on exams. It didn’t have much to do with my abilities. When I was in elementary school, there was a girl who always took the initiative to do the cleaning that other people didn’t want to do, and I remember thinking as a child that “she is an example of a truly wonderful person.” Later, I learned the word *intoku*, which translates to hidden virtues, and I believe that people like this girl who accumulate hidden virtues are the ones who truly support society.

Ochi: You went on to attend Nara Women’s Higher Normal High School. Please tell me a little about your memories there and how you aspired to attend Kyoto University.

Matsumoto: Nara Women’s Higher Normal High School had about 150 students per grade, and those who escalated up from the elementary school dressed themselves very fashionably. There were 27 girls out of 50 in my class. There was folk dancing during lunch break every day, and each grade would form a dance circle. I remember how all the boys were on their toes trying to pair with the girl that they liked. Since we were very tight on money, I gave up the idea of going to Tokyo due to living costs. I looked at Kyoto University and Osaka University, and chose Kyoto University because it was closer to Nara, where I lived. So I took the entrance exam for Kyoto University without knowing anything about the university or what can be studied there.



A family photo during his Kyoto University days (Dr. Matsumoto, back row right, taken around 1961)

“Luck” depends on close friends and teachers

Ochi: So the financial status greatly influenced your choices regarding university education during your time. Also, unlike today, when there is an abundance of various media, available information about universities must have been limited. What made you choose the Faculty of Engineering? Did you not consider, say, the Faculty of Medicine?

Matsumoto: Well, it costs money to become a doctor, and it is difficult to find employment for science or literature majors. The Faculty of Engineering was advantageous for finding employment at the time, so I chose it for economic reasons. It was around the time when electronic computers were getting a lot of attention, so I decided to take the electronics engineering exam without giving it much thought.

Ochi: You must have had other fields of study that you were interested in. But you chose the Faculty of Engineering to make your job search easier. What kind of campus life did you have at Kyoto University?

Matsumoto: I attended class regularly. It took me three hours round trip to commute between Nara and Kyoto, and I was working part-time in Nara, so being at the university

was my only free time. During my freshman and sophomore years, I was able to play baseball and other games with my friends, but from my junior year onwards, the number of specialized lectures for my major increased and it became more difficult.

Ochi: When I retired as a professor, my final lecture was titled “Fate is up in the air?” From what you said, when you had to make a decision, you did base it on economic considerations, but I also feel that you were relying on luck at the same time.

Matsumoto: Exactly. The thing is, when I had to make a decision, so little information was available to me for reference. So how did these little bits of information come to me? By luck. When you think about it, luck depends on people. If you study a lot, or if you have

well-educated parents, you are exposed to a myriad of information. But I didn’t like to study very much, my father came home late every evening, and my mother never graduated college. For someone like me, information could only come from friends and teachers. If so, who you meet and befriend is pure “luck.”

The blind choice led to space radio engineering

Ochi: So then, when you wanted to go to graduate school, on what information did you base your decision? Advice from your friends and teachers? You mentioned that you chose electronic engineering because you were interested in electronic computers, but in graduate school, you majored in research on space plasma.

Matsumoto: Yes. I made that choice because I was fascinated by electronic computers, but when I tried it, I realized that it wasn’t all that interesting. So, in graduate school, I went to ask about joining a laboratory on microwave engineering, but it was not possible because the professor in charge was transferring to another university. I was a bit lost, so I thought I’d just try one of the doors on either side of this laboratory. I blindly picked the door on the right, opened it, and there was Professor Kenichi Maeda (1909-1995). When I asked, “Would you take me as your graduate school student?” he said “Sure!” and this is how my research in radio engineering began.

Ochi: So this professor behind that door just happened to be Professor Kenichi Maeda, Japan’s leading radio engineer who was researching the ionosphere, the magnetosphere, the sun, plasma, and other fields deeply related to space. So that means you didn’t actively seek out this research.

But you accepted what fell in your lap. Radio engineering became your new research topic. Did you face any difficulties?

Matsumoto: I don't think I really did. I had about 20 rivals around the world in the same research field, but even as a newcomer, I was confident that I would come out on top. One day, a professor in the Faculty of Science took interest in the notebooks in which I was recording my research and said, "There is a Russian professor whose research is similar to yours." But I was too immersed in my own research to read other people's papers.



Various snapshots from his youth, when he was a dashing young student, to his prime years, when he was absorbed in research, to his mature years as president, when he took on the challenge of reform

What society wants is a wide range of knowledge

Ochi: So you had no anxieties or pressure in embarking on this new research theme. I



OCHI Mitsuo, M.D., Ph.D.

Born in Ehime Prefecture in 1952. Graduated from Hiroshima University School of Medicine in 1977. Professor at Shimane Medical University in 1995. Professor at Hiroshima University Graduate School in 2002. After serving in various positions, including the Director of the Hiroshima University Hospital, became President of Hiroshima University from 2015. Orthopedic surgeon specializing in knee joints and sports medicine. He developed a regenerative medicine method for cartilage, which became the first to be covered by national health insurance in Japan. Awarded the Medal with Purple Ribbon in 2015. Member of the Special Committee on Comprehensive STI policy of the MEXT Council for Science and Technology from 2019 to 2021, member of the Science Council of Japan from 2017 to 2022, and associate member of the Science Council of Japan from 2011 to 2017 and from 2022. Member of the MEXT Council for Science and Technology and the MEXT Central Council for Education from 2021 to 2023.

would now like to ask you about universities. I took on a major university reform starting in 2019, consolidating 11 graduate schools into four, and added a research institute that allows holistic learning across the four schools. We aim to develop human resources who can broaden their horizons by learning about different research areas, deepen their knowledge of their specialized fields, and envision 50 or 100 years into the future. What challenges did you face during your time as president?

Matsumoto: When I became president, I was at a gathering when someone said, "How about giving them the habit of broader thinking?" I'd heard from several people that graduate students lack common sense and a well-rounded education. To address this issue, as with the reforms promoted by President Ochi, we worked to standardize lectures, such as those for physics and chemistry that are taught in multiple departments. There was a lot of push back, but it was finally achieved after two years.

Ochi: Another big problem is the decline in the number of students going on to graduate schools. One of the causes is that having no income makes it extremely difficult to continue studying. Additionally, companies tend to prefer undergraduate students who have little but extensive knowledge in a variety of fields, rather than graduate students who have specialized knowledge in a specific field. This gives me anxiety about the future prospects of Japan's science and technology capabilities.

Matsumoto: That is a difficult issue. There are many "postdocs," or people who have graduated from graduate schools with a doc-

toral degree but are not employed in formal research or teaching positions, and seeing them tends to steer many talented young people away from graduate schools. The biggest problem is that society does not respect degrees enough. This seems to be particularly true in the industrial world. Currently, graduate students are not provided with a well-rounded education that allows them to develop refined intellect, attain deeper specialized knowledge, and become well-spoken, which are necessary to differentiate themselves from undergraduate students.



MATSUMOTO Hiroshi, Ph.D.

Born in 1942 in Zhangjiakou, Inner Mongolia Autonomous Region, China. After completing the master's program at the Kyoto University Graduate School of Engineering in 1967, he worked as a visiting researcher at NASA (NASA Ames Research Center) and at Stanford University, and in 1987 he became a professor at the Kyoto University Radio Atmospheric Science Center. A leading expert in space science and space radio engineering. In 2008, he became the 25th president of Kyoto University. President of RIKEN (National Research and Development Agency) in 2015, director of the International Institute for Advanced Studies in 2018. Kyoto University Professor, Emeritus. Awarded the Medal with Purple Ribbon in 2007, Booker Gold Medal of the International Union of Radio Sciences in 2008, Doctor of Engineering honoris causa from the University of Bristol in 2014, Chevalier de l'Ordre national de la Légion d'honneur of the French Republic in 2015, Honorary Officer of the Most Excellent Order of the British Empire in 2017, and Grand Cordon of the Order of the Sacred Treasure in 2021.

Corporate investment or university efforts?

Ochi: Perhaps one of the causes of declining scientific capabilities in Japan is that the number of graduate school students is small compared to other countries. The current state of science and technology in Japan is such that postdocs serially hop from one part-time instructor position to another. Employment at a company is one option, but shouldn't companies put more effort into investing in human resources who are capable of shaping the future of science and technology? I would like to see companies not only aim for the development of their own companies but also act based on the higher goal of contributing to the future of Japan's science and technology.

Matsumoto: University people tend to think this way, including myself, but society seems to feel otherwise. If a person who graduates from the graduate school is outstanding, his or her path will naturally progress in the direction that President Ochi envisions. However, strictly speaking, there is no obvious difference in excellence between holders of bachelor's, master's, and doctoral degrees. In graduate schools in Europe and the United States, students are taught to build and develop their own ideas through debates and other activities, but this is not the case in Japan. I feel that it might be better to start with producing students with the skills needed by society in order to raise the reputation of graduate schools among companies?

Ochi: Right. I believe that support from companies and education reform in graduate schools are both needed. It takes a considerable amount of time for companies to recognize and choose to support universities that have produced excellent graduate students. While we wait, the gap between Japan and Europe and the US will continue to widen. It would be nice if companies remembered that they are thriving today because they received support from various sources, including the government, and I hope that they will be willing to invest in the future of Japanese science.

Matsumoto: I agree with your opinion. Therefore, I thought it was necessary to teach graduate students “unwritten learning and common sense,” and in 2009 I launched the Hakubi Project, a project to support the development of next-generation researchers at Kyoto University. The aim is to cultivate human resources that become world-class researchers working at Kyoto University and that lead the next generation of academics. As program-specific faculty members on an annual salary system, we provide a salary and research funds for five years. To select outstanding human resources, we asked people from not only Kyoto University but also other universities and the industry sector to participate

in the selection process. (In 2022, 20 people were selected from 283 applicants. The new recruitment will begin in April 2023, with prospective selectees scheduled to be announced in early December.)

STEAM Education supplements relationship building

Ochi: STEM Education is an approach combining Science, Technology, Engineering, and Math, and the addition of ART makes it STEAM Education, which is attracting attention these days. Although it is necessary to specialize in a specific field, I think that in the future, moving freely between fields and having a variety of perspectives through STEAM Education, which adds elements of the arts and liberal arts to education, will become vital. How do you view STEAM Education?

Matsumoto: I feel that STEAM Education is important. Especially because I cannot do it myself. I like sculptures, and I think art has a connection with people's hearts in a broader sense. Personal growth requires connection with others, and it is very important at what stage one realizes that one cannot do anything in this world alone. Parents can sometimes provide good advice, but parents generally become less involved as children grow older. Universities teach specialized subjects, but they cannot teach how to build interpersonal relationships. Relationships cultivated during the university years are important for a student's growth, but one of the weaknesses of university education is that the time for such relationship-building is limited.

Ochi: I completely agree. I lived in a dormitory at a school in Matsuyama City from junior high school to high school. It was classmates, upperclassmen, and underclassmen all living together in a group in the dorm. I am still close to some of these people, such as Professor Takashi Shiraiishi, who is two years older than me and now a scholar in international

politics, and Mr. Junzo Yamamoto, who is two years younger than me and is a member of the House of Councilors. I suppose I was lucky to spend those six years learning about how to communicate with my classmates, my seniors and my juniors.

Matsumoto: Meeting such people is also “luck,” isn't it? Who you meet is sometimes within your control, but mostly by chance. If by chance you meet someone who is superior in many aspects, you will want to befriend such a person and learn many things from them. It is important to create many such opportunities for many students.

Cherish connections with people, set your ambitions, and pour your passion into it

Ochi: Yes, it is important to create many such opportunities. Currently, there are approximately 15,000 students enrolled in 12 faculties and four graduate schools at our university, of which 1,726, or just over 10%, are international students who grew up in different environments with foreign philosophies and cultures. Also, the Japan branch of the Arizona State University of the U.S. has opened within the Higashi-Hiroshima Campus in August 2022. We have been working to create an environment in which students can meet many people with the excellent qualities you mentioned, as well as encounter a wide variety of people and cultivate friendships.

Matsumoto: Increasing meeting opportunities and connecting with people are important. Assistant professors and associate professors who are immersed in their own research and have no intentions of helping others with their research, or who supervise students in their own lab but ignore other students, are problematic. When people enter society, they develop a desire to contribute to society. I respect people who have that desire. Connections with people are the most important assets in academics and work.

Ochi: No one can do anything alone. I also think that valuing connections with the people around you is extremely important. Lastly, would you please share a message for our students?

Matsumoto: This may not be too significant, but please decide on what you want to do and what your ambition is. Whether you want to become a researcher, join a company and contribute to society, or go into the world of arts and culture, ambition is important, and once you have decided, pour your passion into it. Academic abilities can be improved at universities, but studying is not the only thing required of you. It is important to think at an early stage about what you want to do once you are an adult.

Ochi: Envisioning the future at an early stage is indeed important. Thank you very much for your time today.





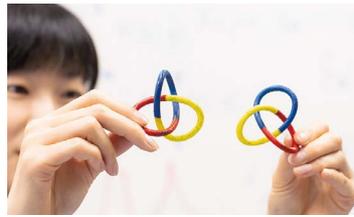
The fact that a research result is useful in some way is just the outcome; that need not be the purpose. Associate Professor Kotorii says, "I want students to know the joy of research that takes simple whys and curiosities and digs deep to discover truths."

Associate Professor,
School of Integrated Arts and Sciences
Graduate School of Advanced Science and Engineering

KOTORII Yuka

Field of specialization

Topology, knot theory



A model of a knot made with a 3D printer. The trefoil knot (top) is the most typical chiral knot. There are many types of torus knots (bottom), and all of them are chiral knots, except for the trivial ones.

Mathematics about string figures

Shoelaces, earphone cables, etc. get tangled, and when they do, do you ever think about "how" they are tangled? My research theme is knot theory, which deals mathematically with such "tangling of strings." This is part of a field in mathematics called topology. Topology deals with the shape of things. In particular, we study the properties that are maintained when things are continuously deformed. In my research, we correlate strings with mathematical expressions so as to be able to handle the elusive shape of strings within a mathematical framework. When temporarily translated into mathematical language, a variety of mathematical knowledge is at your disposal. By using this mathematical knowledge, we can, in the end, find out the shape of the string. However, even now, not all string figures are known, so there are still many things to consider.

You may wonder what the point of such research is, but for me, it's very interesting to figure out something, even if it is not useful. However, it is actually known to be useful. String-like substances exist everywhere. For example, proteins, DNA, and polymer compounds can be thought of as strings. The basic theories that we mathematicians have studied about strings are being applied to elucidate the properties of matter. I am also currently working on interdisciplinary research with researchers from different fields. One of the reasons I became interested in interdisciplinary research was something I experienced when I was a graduate student studying abroad at a university in the UK for several months. This university was a place of regular and active interdisciplinary exchanges, such as mathematics and biology, and mathematics and art. I had spent my life studying only mathematics, but



During the on-site lectures at high schools, in addition to explanations of university learning and research, we also offer hands-on learning about topology and knots using VR.

Similarly, as with the School of Integrated Arts and Sciences, WPI* activities, which I am a part of, aim to provide education that cultivates academically multilingual students. Students are being instructed by domestic and international expert faculty members in a variety of fields, such as mathematics, physics, chemistry, biology, and earth and planetary science, and by having them engage in activities with many foreign students, we aim to cultivate human resources who can pioneer new research fields. Please look out for WPI's future educational research results.

*Hiroshima University's International Institute for Sustainability with Knotted Chiral Meta Matter (SKCM²) was the first in the Chugoku-Shikoku region to be selected by the first World Premier International Research Center Initiative (WPI). Associate Professor Kotorii is participating in SKCM² as a deputy director and a principal investigator.



A scene from the Miyajima outreach activity — a collaboration event using Japanese traditional decorative knot art *mizuhiki* and knots



Network-type Research Center

Network for Education and Research on Peace and Sustainability (NERPS)

The Network for Education and Research on Peace and Sustainability (NERPS) is a network hub widely open to the world and not exclusively linked to Hiroshima University. NERPS aspires to be an education and research center characterized as follows:

1. A research hub focusing on peace, the global environment, and the Sustainable Development Goals (SDGs) backed by research capabilities of international standards
2. A problem-solving-oriented education and research hub in which researchers in the humanities and social sciences can also participate
3. An education and research hub enabling collaboration by diverse actors, including individuals, NGOs, private businesses, governmental entities, and international organizations



Creating World Top-level



The logo symbolizes NERPS's priority focus on SDG 4 "Quality education" and SDG 16 "Peace, justice and strong institutions," while contributing to all of the 17 SDGs.





Candi Borobudur. "Candi" is an Indonesian word used to refer to a religious monument. It is one of the largest stone temples in the world. It was registered as a UNESCO World Heritage Site in 1990. It has been pointed out that when looking at the building from above, it has a structure similar to a "mandala," which represents the teachings and worldview of Tantric Buddhism.

Associate Professor,
 School of Letters
 Graduate School of Humanities and
 Social Sciences

ITOU Naoko

Field of specialization

Indonesian religious art history



Tantric Buddhism teaches that the goal is the attainment of Buddhahood in this very body, or becoming an enlightened being, in this life rather than after death. Associate Professor ITOU says: "My understanding of becoming a Buddha is supporting each other and cherishing and living life to the fullest. What attracts me so much to Tantric Buddhism is that it beckons us to live better."



Vairocana (the Diamond Realm):
 Museum Sonobudoyo collection.
 Unearthed in the central region of
 Java Island. 7.7cm in statue height,
 made of silver. Perhaps made
 around the 10th century

Exploring the transmission of Japanese Tantric Buddhism through Indonesian art

“Objects” that are cultural assets can sometimes vividly tell us about the times in which they were created. According to literature, before Islamization, Hinduism and later Buddhism were introduced from India around the 5th century to Indonesia, but the details are unknown, and as for Tantric Buddhism, it is hardly recognized at all. By researching the remaining Tantric Buddhist statues and ritual tools unearthed in Indonesia, I am trying to uncover the transmission of Tantric Buddhism by sea. Did you know that there are depictions of Indian monks found in the first tier (lowest tier) of the towers of Japanese Tantric Buddhism temples and on the hanging scrolls found in the inner sanctum of temples? Tantric Buddhism is known to have originated in India and traveled all the way across Central Asia to Chang’an. It was brought back to Japan by monks, including the members of *nitto hakke** (eight Buddhist monk pilgrims who visited the Tang Dynasty) such as Kukai and Saicho, and it is worshiped as Shingon

Buddhism and Tendai Buddhism to this day. The Indian monk depictions found in the first tier and on hanging scrolls are important figures who were involved in the introduction of Tantric Buddhism to Japan. In fact, some of these monks are thought to have traveled from India to Chang’an by sea. The place where ships can quickly arrive from ports in East India carried by the ocean currents. Yes, that is Indonesia. My research begins by investigating the traces of Tantric Buddhism in Indonesia and Europe, including museums, art galleries, archives, and statues and ritual tools stored in the depths of their storage rooms. There are 102 cast statues of Vairocana (the Diamond Realm), which is important in Japanese Tantric Buddhism, found mainly in the central region of Java, and also 20 examples of vajra pestles and 37 vajra bells, which are definitely Tantric Buddhist ritual tools, and many other Tantric Buddhist statues and ritual tools have been found, confirming the existence of Tantric Buddhism. In particular, the forms of tines on the ends of the vajra pestle and bell were classified into “closing prongs” and “opening prongs,” and the estimated production dates were estimated to be around the 8th to 10th century and the 10th to 15th century, respectively. Japanese vajra pestles and vajra bells are of the “closing prong” type and can therefore be estimated to have been made around the 8th to 10th centuries. The “opening

prong” type has been found in countries such as Cambodia and Thailand, which is suggestive of the spread of Tantric Buddhism from the 10th century onwards. On the other hand, there is Candi Borobudur, one of the world’s largest stone temples and registered as a UNESCO World Heritage Site, located in the central region of Java, Indonesia. Previous research has pointed out that this temple, including the surrounding temples, has strong Tantric Buddhism elements. It is thought to have been built around the 8th or 9th century, coinciding with the time when Tantric Buddhism was transmitted to and practiced in Japan. Based on examining such surviving examples, including buildings, as well as literary materials such as inscriptions, scriptures, and historical documents, it is likely that a similar form of Tantric Buddhism was practiced in both Japan and Indonesia around the 9th century. The first floor of a pagoda in a Japanese temple depicts a monk crossing the sea. Tantric Buddhism crossed the seas from India to Indonesia, then to China and finally to Japan. Exploring this transmission is an endlessly fascinating lifelong theme for me.

*Eight monks who traveled to the Tang Dynasty in the early Heian period and brought Tantric Buddhism to Japan. In addition to Kukai and Saicho, there were Jogyo, Engyo, Ennin, Eun, Enchin, and Shuei.



Vajra pestle “closing prong” type: National Museum of Indonesia collection. Unearthed in Central Java. 13.8 cm in width



Vajra pestle “opening prong” type: Rotterdam collection. Unearthed in East Java. 18.0 cm in width

(Background photo)

One of the reliefs in the corridor of Candi Borobudur, Gouma Jodo (subduing demons and achieving enlightenment) It depicts the Buddha (center) being attacked in various ways by demons in an attempt to hinder him from attaining enlightenment under the Bodhi tree.

Research Centers

Centers of Excellence

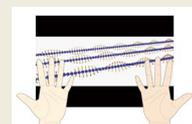
HU aims to create world-class research centers on a continuous basis by providing support for research groups conducting active research activities to drive their further development.

- Hiroshima Drug-Delivery Research Center Using Photoirradiation (Hi-P-DDS)
- The Research Core for Plant Science Innovation
- Hiroshima Institute of Plate ConvErgence Region Research
- Hiroshima Institute of Health Economics Research (HiHER)
- Advanced Core for Energetics (HU-ACE)
- Hiroshima Research Center for Healthy Aging (HiHA)
- The Research Center for Animal Science
- Chirality Research Center (CResCent)
- Core of Research for Energetic Universe (CORE-U)
- The Research Center for Drug Development and Biomarker Discovery
- HiSENS Research Center
- Research Center for the Mathematics on Chromatin Live Dynamics
- Research Center for Hepatology and Gastroenterology
- Center for Regenerative Therapy

*As of February 28, 2023

Chirality Research Center to elucidate the mystery of right- and left-handedness

Your right and left hands are very similar, yet they are not identical. This property is called chirality. Our research has revealed that chiral magnets made only from right-handed materials are completely different from normal magnets. It is becoming clear that problems with chiral magnets have commonalities with problems in molecule biology and high energy physics. The center is working to elucidate chirality-related problems from a basic science perspective.





Lecturer,
School of Education
Graduate School of Humanities
and Social Sciences

YAMASAKI Akane

Field of specialization

School psychology, education consultation/
student guidance, school counseling

Is Satsuki Kusakabe, a character from the movie *My Neighbor Totoro*, a young caregiver? In the Kusakabe family, the mother is hospitalized, and elementary school student Satsuki is solely responsible for the housework and taking care of her younger sister. Lecturer Yamasaki says: "Satsuki, who has the understanding of and support from her school teachers and neighbors, partially fits the definition of a young caregiver but cannot be called a young caregiver. The important point is that the environment is such that children do not suffer from heavy psychological stress from having to provide care."

To describe my research simply, it is "How does adult involvement (education) in schools and society promote children's psychological and social growth?"

The situation surrounding children today is fraught with various challenges, including school refusal, bullying, school violence, child poverty, child abuse, and young caregiving. Modern society is changing rapidly, and relationships between people are becoming more and more diluted, but in order for children to be psychologically stable and allowed to develop appropriate social skills, they need to maintain enriching relationships with the people around them. I am particularly interested in how teachers, school counselors, and other



Contributing to improving support for children through training for teachers and staff in educational and welfare settings.

staff should understand and interact with students in school settings and how children's interactions with each other and with the adults surrounding them affect children's psychology. My research began with a focus on the development of friendships, especially the background of friendships among adolescent girls, which are prone to leading to serious bullying and interpersonal problems. From there, I developed an interest in children's interpersonal relationships and social development, which continues to this day. The basis of interpersonal relationships lies in the appropriate development of attachments established during infancy, but unfortunately, due to the influence of various circumstances, some children are unable to experience attachment



Overseas visits to countries where advanced education consultation and student guidance are being implemented. Exchanges between researchers and practitioners are being facilitated.

relationships appropriately during the critical period of attachment formation. Also, some children are affected by the deteriorated relationship with their caregivers. Both of these situations lead to stressing the children, which is released in forms of problematic behaviors and situations. We have found through practices and research in schools and child welfare facilities in Japan and abroad that we can save children from such difficulties by not only understanding children's minds and engaging with them with an accepting disposition but also structuring educational activities to teach and utilize skills for connecting with others. These findings are being actively applied in educational administration and school settings both within and outside Hiroshima Prefecture. A study on young caregivers conducted in collaboration with Higashihiroshima City in AY 2022 found that situations in which children feel it is difficult for people around them to understand the troubles they are experiencing may be damaging their hopes for the future and their sense of identity. It has also become clear that adults working in education and welfare settings want to help children with their concerns but are at a loss as to how to do so. Based on these results, we are starting a joint effort with Higashihiroshima City to provide actual support in AY 2023. It is very rewarding for me to be able to explore how we can approach matters that are becoming a social issue like this. My aim is to nurture children through the power of connections and lead them to a bright future through education. I believe that education has the power to change society in any era, and I am convinced that nurturing children's ability to become better members of society is the greatest contribution to society that can be made. Also, it's not just educators and researchers who are involved in education. Local people are also a huge force in supporting education. We hope to continue expanding our university's research and collaboration with the local community.



Actively involved in providing direct and indirect support to children at school and child welfare facilities.

Providing support for children's bright future through education

Creating World Top-level Research Centers

Promising Research Initiatives

HU selects and provides priority support to promising research initiatives, which are researcher groups who have the potential to grow into independent world-class research centers (Centers of Excellence).

- International Network on Polyoxometalate Science
- Core of Research for Organelle Diseases
- Healthy Urban - Rural cycle in Setouchi to Asian catchments, toward SDGs (HURu-SATO)
- MBR Center

*As of February 28, 2023

Creation of a new academic research field for a healthy urban-rural cycle in Asia

The center for Healthy Urban - Rural cycle in Setouchi to Asian catchments, toward SDGs (HURu-SATO) aims to create a healthy cycle (including people and food) between urban areas and its surroundings in the urbanizing Asian regions. Satoyama/satoumi is an evolving symbiosis in which natural resources are revitalized and used sustainably through the active intervention of humans and is a highly unique environmental creation system in Japan. The efforts of this initiative aim to create a new academic research field that will contribute to solving problems in Asian countries, based on successful cases in the Setouchi catchment, and will also contribute to the SDGs.



Carbon dioxide emission reduction through bioprocess

— That's my motivation for my research —

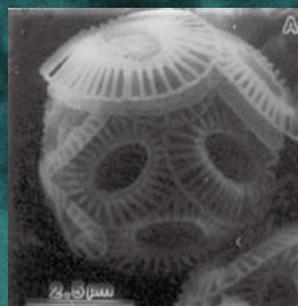


Professor,
 School of Engineering
 Graduate School of Integrated Sciences for Life

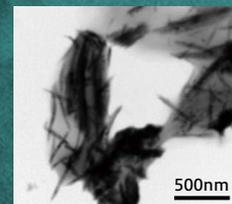
OKAMURA Yoshiko

Field of specialization

Biom mineralization, microbial genome



Calcareous alga (Coccolithophore) bearing coccoliths (calcite) instead of cell walls.



Recombinant *E. coli* harboring tellurite reducing activity formed tellurium crystals.

When I was assigned to the laboratory 30 years ago, the first thing my professor said to me was, “In the 100 years since the industrial revolution, the concentration of CO₂ in the atmosphere has increased by 70 ppm. At this rate, it will reach 400 ppm in less than 100 years!” (It was 350 ppm at that time). And I started a biomineralization study to see how much CO₂ could be reduced by photosynthesis and calcification using calcareous algae. Photosynthesis is carbon neutral (the CO₂ converted into organic matter is equal to the CO₂ produced by the use of organic matter), but calcification (the CO₂ precipitated as the calcium carbonate) is a carbon reduction.

I am currently researching bacteria that convert metal ions into compound crystals. My big dream is to find bacteria that can synthesize crystals with the same properties as semiconductor crystals and to replace the semiconductor manufacturing process with bioprocesses in the future, which may significantly reduce CO₂ emissions. Semiconductors are becoming increasingly important in a digitalized society, but reducing CO₂ emissions during the manufacturing process is also an important issue. Should we give up on dreams when they seem impossible? Since I became a researcher 30 years ago, CO₂ has increased by another 70 ppm. If no one does anything, not only will nothing change, it will also get worse and worse.

Faculty members of the Program of Biotechnology of the Hiroshima University Graduate School of Integrated Sciences for Life are developing technology to maximize the fermentation capabilities of microorganisms. We have succeeded in converting CO₂ into organic acids through fermentation and are currently conducting research to convert them into raw materials for chemical products (substances produced through chemical synthesis). Until now, biotechnology has been limited to substances that microorganisms can synthesize, but now that genomic DNA information has become big data, we have entered a new phase where we can use DX and AI technology to create biosynthetic pathways for the substances on demand and soon produce synthetic microorganisms. My other research involves discovering the useful biocompound genes from the genomes of unknown microorganisms and synthesizing new gene sequences based on the genome information. Since many unknown microorganisms are difficult to culture, only a small amount of DNA can be obtained, just enough to determine the genome sequence. Therefore, we need to develop new technologies to synthesize DNA from sequence information. My research style is backcasting, so I first define what I want to make and then synthesize new DNA sequences from large data sets. The idea of using CO₂ as a resource has been around for a long time, but it was just a dream

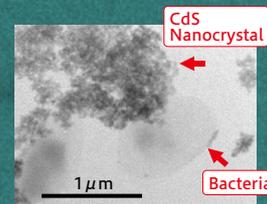
of some scientists. However, it is now possible to convert CO₂ into ethanol and to make polyester, which is commonly used in clothing, from ethanol. Making things from CO₂ without using petroleum will ultimately lead to carbon reduction. The world is on track to achieve this feat by 2050. I would like to continue my research with the next generation of researchers toward a future where products can be made from CO₂.



Bacterial samples were collected at seashore. Different bacteria will be isolated from same samples depending on the student doing the work. Professor Okamura says, “The fact that there are endless patterns and diversity makes bioresearch both difficult and interesting.”



(Background photo) Cadmium recovery by bacterium. It can form cadmium sulfide quantum dots.



Scholarship system for female graduate students in science and engineering fields

Hiroshima University Fellowship for Female Graduate Students in Science and Technology



Female doctoral students (D1 to D3) who are motivated to play an active role in science and technology fields are selected as STEM Female Research Fellows and receive stipends (equivalent to living expenses) and research funding. With the fellowship, we provide an environment where students can concentrate on their research. Furthermore, we also provide support to master's degree students who have the desire to advance to the doctoral program, and if students receiving support advance to the doctoral program at our university, they are guaranteed STEM Female Research Fellow positions.



Associate Professor,
School of Medicine
Graduate School of Biomedical and
Health Sciences

OHSHIMO Shinichiro

Field of specialization

Severe respiratory failure, mechanical ventilation, extracorporeal membrane oxygenation (ECMO)

Associate Professor Ohshimo was not originally a critical care physician, but specialized in respiratory medicine and has long investigated fibrotic lung diseases (i.e. a disease that involves inflammation and fibrosis of the tissue between the alveoli). Under the policy of his mentor that, "Respiratory physicians need to be able to treat all organs of the body," he was assigned to the Department of Emergency and Critical Care Medicine. Six months later, he encountered the H1N1 influenza pandemic and experienced the importance of extracorporeal membrane oxygenation (ECMO). He says, "If I had been assigned one more year later, I would not be who I am today. I feel that life has a mysterious fate."

Many of you must have had a difficult high school life due to the COVID-19 pandemic. Did you know that in 2009, when many of you were still very young, Japan had another pandemic crisis? It was the H1N1 influenza virus. Until then, influenza was considered a slightly stronger form of the common cold. However, with the H1N1 influenza, many patients developed severe respiratory failure that they could not keep breathing even with mechanical ventilators.

At that time, I had just started working in the Department of Emergency and Critical Care Medicine at Hiroshima University Hospital. The world was scared of this invisible and mysterious infectious disease. It was just like when the COVID-19 pandemic started. Meanwhile, reports came in from overseas that even critically ill patients could be saved by



ECMO membrane oxygenator. Venous blood is drained from the body, carbon dioxide, and oxygen are exchanged through thin hollow threads (0.2 to 0.3 mm in outer diameter) with many micropores on the surface and hollow inside, and blood is returned to the body. ECMO replaces the gas exchange function, allowing the inflamed lungs to rest and promoting recovery.



Membrane oxygenator in operation. Since severe respiratory failure requires ECMO for a long time, it is essential to have skilled staff such as physicians and clinical engineers who can quickly exchange artificial lungs and nurses who can appropriately manage blood clots and bleeding.



A respiratory sound monitoring system that numerically "visualizes" respiratory sounds, without relying on the skill or auditory sense of physicians and medical staff, was developed in collaboration with a domestic medical device manufacturer. Currently, the system is being developed for monitoring critically ill patients in intensive care units and operating rooms, and for telemedicine for home patients and hotel care patients.

using an ECMO machine.

However, in Japan at that time, many patients could not be saved, even with the use of ECMO. Why do you think that was? This was due to the special nature of treatment for patients using ECMO. In severe respiratory failure, where the treatment period was long, it was necessary to prepare for infections, complications, blood clots, etc. And whole-body care was essential to cope with the heavy stress on the heart, kidneys, brain, etc. In Japan back then, this was not well known yet. We required not only devices but also the development of human resources. Since then, I have trained in ECMO know-how in the United States, the United Kingdom, and Sweden, which were considered advanced countries regarding ECMO at the time. At Hiroshima University, we repeatedly held ECMO seminars for doctors, nurses, and clinical engineers across the country in cooperation with like-minded emergency intensive care physicians.

Then came the COVID-19 pandemic in 2019. Emergency intensive care physicians across the country, including us, demonstrated the ECMO management and treatment skills we have developed over the past 10 years. We also used our network beyond our hospitals to provide medical support in areas where medical care was about to collapse. As a result, the survival rate of patients with severe COVID-19 who received ECMO was 65%, one of the highest in the world. The number of ECMO cases at Hiroshima University Hospital is among the highest in Japan, with a survival rate of 93% last year. Doctors from all over the country are

now coming to our hospital to learn the skill.

However, there are still lives that cannot be saved. At Hiroshima University, we are researching the mechanisms by which strong spontaneous breathing damages the lungs and its treatment using animal models. In addition, emergency intensive care physicians work not only in hospitals but also outside, such as in air ambulances and DMAT (Disaster Medical Assistance Team). Taking advantage of this characteristic, we are also focusing on transporting critically ill patients, aiming to further improve the survival rate.

Medical care is very important for people to happily and peacefully live. It is also important to take care of your own health by getting regular checkups and avoiding unhealthy habits. However, if you need medical treatment for illness or injury, Hiroshima University Hospital will always do its best to treat you, so you can live your life with peace of mind.



Emergency intensive care physicians are trained to work outside hospitals, such as in air ambulances. In patients treated by emergency intensive care physicians, there are often no treatment protocols (i.e. predetermined treatment procedures and plans). They must be able to examine the entire body and quickly determine and provide necessary treatment.

10 years together with ECMO

— To save lives that could not be saved —

Attached Research Institute

Research Institute for Radiation Biology and Medicine

The Institute conducts comprehensive research projects on the effects of radiation on the human body, ranging from cutting-edge basic research in genomics to advanced clinical deployment of regenerative medicine, etc. While being involved in research and development of medical treatments for A-bomb survivors for over half a century, the Institute is actively engaged, as a research hub in the field of radiation disaster medical science, in joint research projects with researchers and doctors across the country.

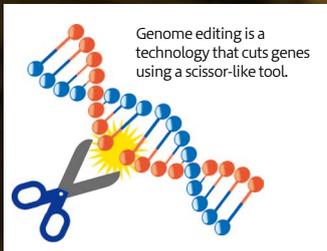


Distinctive research facilities

Joint Education and Research Facilities on Campus

- Research Institute for Nanodevices
- Research Institute for Higher Education
- Information Media Center
- Natural Science Center for Basic Research and Development
- Morito Institute of Global Higher 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 of Sport
- HiSIM* Research Center
- Amphibian Research Center

Creating a future that is kind to people and birds through digital breeding of poultry



We created chickens (black and brown chicks) that do not have the OVM gene, using two breeds of chickens. It was created in two different breeds in order to realize breeding as an original variety in the future.

Europe is moving toward banning the killing of male chicks in the egg industry from the perspective of animal welfare, and the development of technology to distinguish the sex at the egg stage is progressing at a rapid pace. Professor Horiuichi says, "Birds have a different structure of sex chromosomes than mammals, so we are still at the basic research stage, but in the future, we would like to establish technology for sex selection technology."



Professor,
 School of Applied Biological Science
 Graduate School of
 Integrated Sciences for Life

HORIUCHI Hiroyuki

Field of specialization

Applied animal life science,
 immunobiology

There may be few people who immediately know what poultry means when they hear that word. Birds that are raised for human use of their meat, eggs, feathers, etc. are poultry. Typical poultry includes chickens, quail, and ducks. Poultry in particular is an animal species with few religious restrictions, and therefore it is raised and its products are used all over the world. In our laboratory, we are conducting research focusing on the immune and reproductive functions of chickens and quail, which are the most familiar poultry. In particular, we are developing poultry research that leads to a world that is friendly to both people and birds, using research methods that combine genome editing technology, the latest biotechnology, and data science. Let me introduce some of our research.

Chicken eggs have become an essential part of our diet. On the other hand, chicken eggs are the number one allergenic food for Japanese people, and many people cannot eat foods that contain chicken eggs. Eggs are also used in the production of noodles, fish paste products like kamaboko (steamed fish paste), and vaccines, which are not so obvious, and some people may have allergic reactions to them. Therefore, we used genome editing technology developed at Hiroshima University to create chickens that do not produce ovomucoid (OVM), one of the

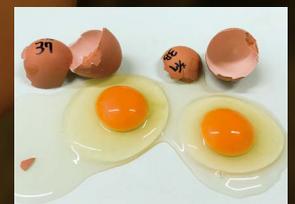
proteins (allergens) found in chicken eggs that causes allergies. The safety of these chicken eggs, a concern for consumers, has been proven using the latest data science.

This type of research spanning over many years has also led us to realize other points of importance. This is one of the aspects that makes research interesting. One is the idea of animal welfare. Companies that produce chicken eggs need females, but not males. Therefore, male chicks are currently being culled. As a countermeasure to this problem, we are working on the development of sex selection technology for chickens and technology for early determination of the sex of fertilized eggs. Here, too, we are accumulating basic research using genome editing technology and conducting interdisciplinary research that combines the engineering of detection technology and AI. Another important point is infectious disease control. In AY 2022, more than 17 million poultry birds were culled due to an outbreak of highly pathogenic avian influenza across the country. This has resulted in a shortage of eggs, leading to soaring prices. To find a solution to this problem, our laboratory is currently accumulating research results to combat highly pathogenic avian influenza through analysis of the chicken immune system.

We must cope with the rapidly changing global environment, including rising seawater temperatures, and we are stepping into an era in which food production requires breeding using new biotechnology such as genome editing, rather than conventional breeding. Consumers will also need to have the ability to understand the mechanisms and safety of technology and make judgments based on scientific knowledge. Hiroshima University provides opportunities for consumers to deepen their knowledge, so please take advantage of them.



The date of collection is written on the eggs, and they are heated in an incubator in the laboratory and hatched.



An egg with reduced allergens (right). On the left is a normal egg.

<Background photo>

A chick hatched in the laboratory. Chicken egg embryos are said to begin to develop a sense of pain seven days after they are laid. In addition to prohibiting culling after hatching, there is a need to develop technology for early sex determination so that selection at the egg stage is painless.

supporting world-class research

- Translational Research Center
- Resilience Research Center
- Center for Brain, Mind and KANSEI Sciences Research
- Hiroshima University Genome Editing Innovation Center
- Hiroshima University Digital Monozukuri (Manufacturing) Education and Research Center
- Education and Research Center for Artificial Intelligence and Data Innovation

- The IDEC Institute
- Academic-Environment Social Governance Science and Technology Research Center
- Town & Gown Institute of Innovation for the Future
- Hiroshima University PSI GMP Center
- The Institute for Diversity & Inclusion
- Seto Inland Sea Carbon-neutral Research Center

*HISIM (Hiroshima-University STARC IGFT Model) is a transistor model used in circuit design that has been developed by Hiroshima University in collaboration with the Semiconductor Technology Academic Research Center (STARC).

National Joint Usage Facility

Hiroshima Synchrotron Radiation Center

Synchrotron radiation is generated when an electron traveling at the speed of light is forced to change direction by a magnetic field. Synchrotron radiation is called "dream light" because it is not only powerful but also includes light of various wavelengths. The center promotes advanced materials science and emerging interdisciplinary fields using synchrotron radiation.



Educational systems

UNDERGRADUATE EDUCATION

Hiroshima University offers undergraduate education in diverse schools leading students to acquire a broad culture and specialized knowledge.

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

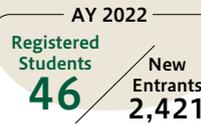
In each program, the target levels of knowledge and competency that each student is expected to reach by graduation are clearly indicated, and their degrees of achievement are periodically checked. This approach enables students to make progress steadily toward their final goal.

Major program

Students work toward a bachelor's degree in this specialization.

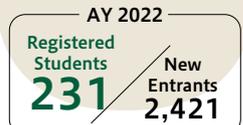
Minor program

Students learn other majors



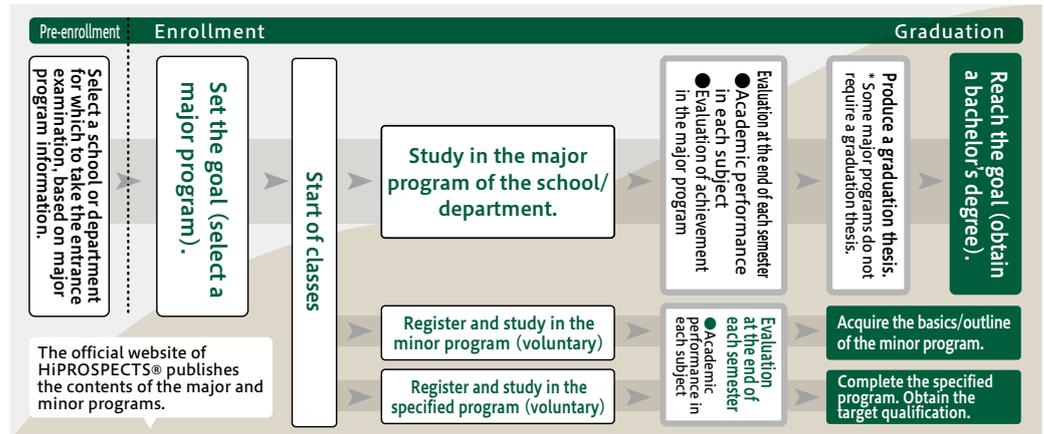
Specified program

Students study specific subjects to fulfill personal goals or acquire official qualifications.



Bachelor's Degree Programs

- 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
- Special Course of Special Support Education

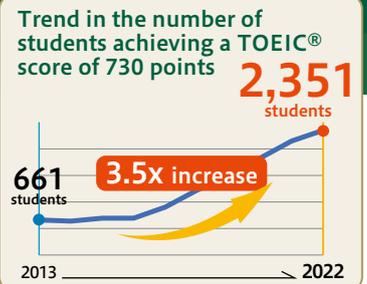


<https://www.hiroshima-u.ac.jp/prog> (Page in Japanese)

TOEIC® L&R IP TEST

Measuring English language proficiency by a socially and internationally recognized test

All HU students are required to take this internationally recognized test at least twice, upon admission and in or after their third year (exact timing depending on students' affiliation). The test scores enable the students to objectively evaluate their English language proficiency and also contribute to further improving HU's English language instruction.



Basic Courses in University Education

Developing the ability to engage in intellectual activities at the university

Out of liberal arts education's four major categories (Peace Science Courses, Basic Courses in University Education, Common Subjects, Foundation Courses), students learn how to study at university from the Basic Courses in University Education. In the Introductory Seminar for First-Year Students and the Introduction to University Education, which are compulsory for all students, students acquire the basics of intellectual activities at a university. In the Advanced Seminar, which was newly established as an elective subject from AY 2023, students develop the ability to discover and solve problems on their own.

matching students' motivation

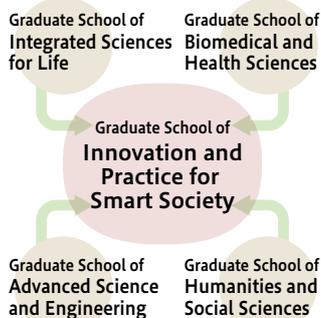
POSTGRADUATE EDUCATION

Deepening understanding in areas of specialization and cultivating multiple perspectives through interdisciplinary and integrated research.

Master's & Doctoral Programs

- Graduate School of Humanities and Social Sciences
- Graduate School of Advanced Science and Engineering
- Graduate School of Integrated Sciences for Life
- Graduate School of Biomedical and Health Sciences
- Graduate School of Innovation and Practice for Smart Society

We have established a research institute that allows students to study across fields of four graduate schools. Studying different research areas broadens one's perspective and leads to deeper research in one's area of specialization.



Graduate School of Innovation and Practice for Smart Society (Opened in April 2023)

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 will 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 the issues facing today's society by using the knowledge and skills needed to solve them.

WISE Program (Doctoral Program for World-leading Innovative & Smart Education)

Tuition Waiver Scholarship (50,000 yen/month)

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

● The Frontier Development Program for Genome Editing

(adopted for the MEXT WISE Program in AY 2018) [*61 students]

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)

* Number of registered students

Leading Graduate Education Program

Tuition Waiver Scholarship (50,000 yen/month)

Training next-generation leaders for global activities

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

(adopted for the MEXT Program for Leading Graduate Schools in AY 2011) [*13 students]

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

- Radiation Disaster Medicine Course (four-year program)
- Radioactivity Environmental Protection Course (five-year program)
- Radioactivity Social Recovery Course (five-year program)

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

(adopted for the MEXT Program for Leading Graduate Schools in AY 2013. Student recruitment has been suspended since AY 2023) [*15 students]

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

- Cultural Creation Course (five-year program)
- Technical Creation Course (five-year program)
- Social Implementation Course (five-year program)

* Number of registered students

Postgraduate Advancement Project

The following support systems are in place to support doctoral students who are interested in research and who will be important players in creating science, technology, and innovation in Japan in the future.

Graduate School Research Fellowship

Supporting **53** students per grade level

Support amount Stipends: **1.8 million yen** + research expenses of **300,000 yen/year**

Fellowship for Female Graduate Students in Science and Technology

Supporting a total of **8** students, **6** in the doctoral program and **2** in the master's program

● STEM Female Research Fellow

Support amount Stipends: **150,000 yen/month** + research expenses of **420,000 yen/year**

● STEM Female Junior Research Fellow

Support amount Stipends: **75,000 yen/month** + research expenses of **240,000 yen/year**

Program for Developing and Supporting the Next-Generation of Innovative Researchers

(Established with the support of the Japan Science and Technology Agency's Support for Pioneering Research Initiated by the Next Generation program)

Supporting **199** students in total for all grades

Support amount Living expenses + research expenses of approximately **2.2 million yen/year**

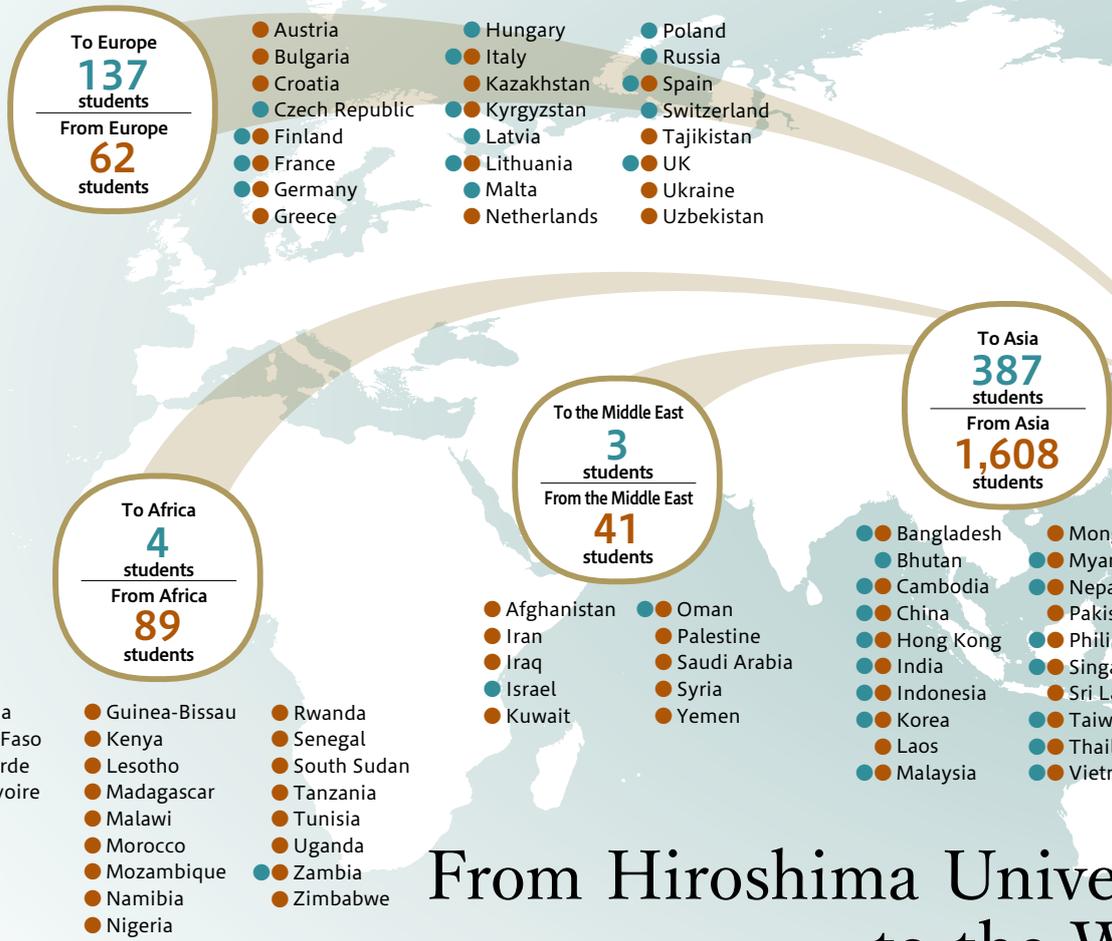
Support for Pioneering Research Initiated by the Next Generation program

List of selected universities and number of beneficiaries (excerpt)

1	The University of Tokyo	600 students	6	University of Tsukuba	351 students
2	Kyoto University	515 students	7	Kyushu University	349 students
3	Tohoku University	511 students	8	Nagoya University/Gifu University	320 students
4	Hokkaido University	467 students	9	Keio University	263 students
5	Osaka University	420 students	10	Hiroshima University	199 students

HU's number ranks 10th among the 40 universities selected.

The World Is Yo



From Hiroshima University to the World

A total of 845 students were sent to 44 countries and regions

*Results before the coronavirus pandemic



One year in Spain on the HUSA program

I studied abroad for one year at a university in Tarragona, Spain. At the university, I took classes with local students, went to bars with other international students, and made friends from various countries and regions. There were times when I couldn't get my point across properly, but each time I felt resolved to make it work on my own, and I became more proactive than when I was in Japan. I think it was the most intense year of my life.

Fourth-year student, Department of Literature, School of Letters
TSURUTA Rin



In Zambia with the Tobitai! (Leap for Tomorrow) Study Abroad Initiative scholarship

I took development studies at the University of Zambia, and I also worked on international exchange through sports studies. Specifically, my experience included interning at an organization under the Department of Sport Development, supporting a women's soccer team, and teaching Japanese. My time there was during the COVID-19 pandemic, but thanks to the generous support I received, I was able to continue my studies until the end. There are many opportunities to take on challenges at Hiroshima University, so please pursue what you want to do to your heart's content.

Fourth-year student, Department of Integrated Global Studies,
School of Integrated Arts and Sciences
NAKAMURA Yuto

ur Campus

At Hiroshima University, the whole world is your campus. As a hub of international education and research, HU has signed international exchange agreements with education and research institutions across the globe. Hiroshima University attracts many students from all corners of the world and sends many Japanese students abroad.

International exchange agreements

(As of May 1, 2023)

Between universities

400 agreements signed with 354 institutions in 56 countries/regions

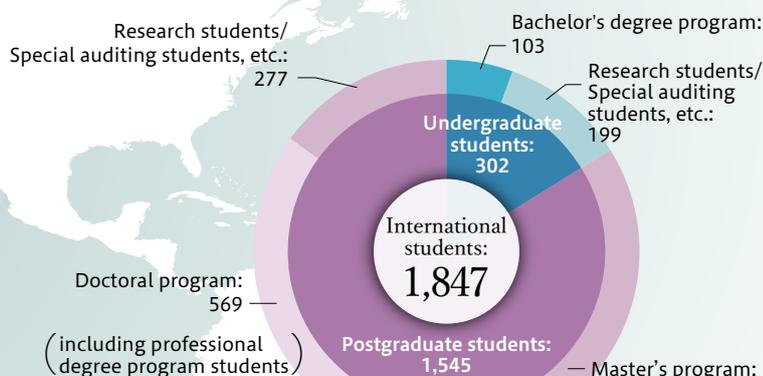
Between divisions

412 agreements signed with 374 institutions in 55 countries/regions

Overseas bases

(As of May 1, 2023)

23 bases in 15 countries/regions



From the World to Hiroshima University

A total of 1,847 students from 87 countries and regions are studying at HU (as of November 1, 2022)

From Chile to HU to study coastal engineering in Japan and Asia with the aim of researching tsunami evacuation



My research field is tsunami evacuation in coastal cities, and since I come from a country with many tsunamis, studying in Japan was a natural choice for me. It was not an easy decision to move 17,000 km away from my hometown, but I wanted to conduct tsunami research at Hiroshima University, which has the Coastal Hazards lab, and learn about advances in coastal engineering in Japan and Asia. Saijo is a very peaceful city. I think it's a great place to study, with a nice environment and a large campus. I truly enjoy studying abroad at Hiroshima University, and I will cherish this moment for the rest of my life.

Second-year master's student, Division of Advanced Science and Engineering, Graduate School of Advanced Science and Engineering

Flores Constanza (Chile)

From Cambodia to Hiroshima University again Hiroshima University offers a wonderful environment for researchers



I was enrolled in a master's program from 2011 to 2013, and this is my second time studying abroad here. I think Hiroshima University is an excellent higher education institution for researchers. Under the kind guidance of the professors, students will not only greatly improve their abilities through research and writing papers but also learn cooperative skills through communicating with students from diverse nationalities. Hiroshima University is located amidst beautiful nature, with impressive views of autumn leaves and cherry blossoms. I also learned about Japanese culture and lifestyle through study trips and homestays.

Second-year doctoral student, Division of Educational Sciences, Graduate School of Humanities and Social Sciences

Khut Sokha (Cambodia)

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.

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

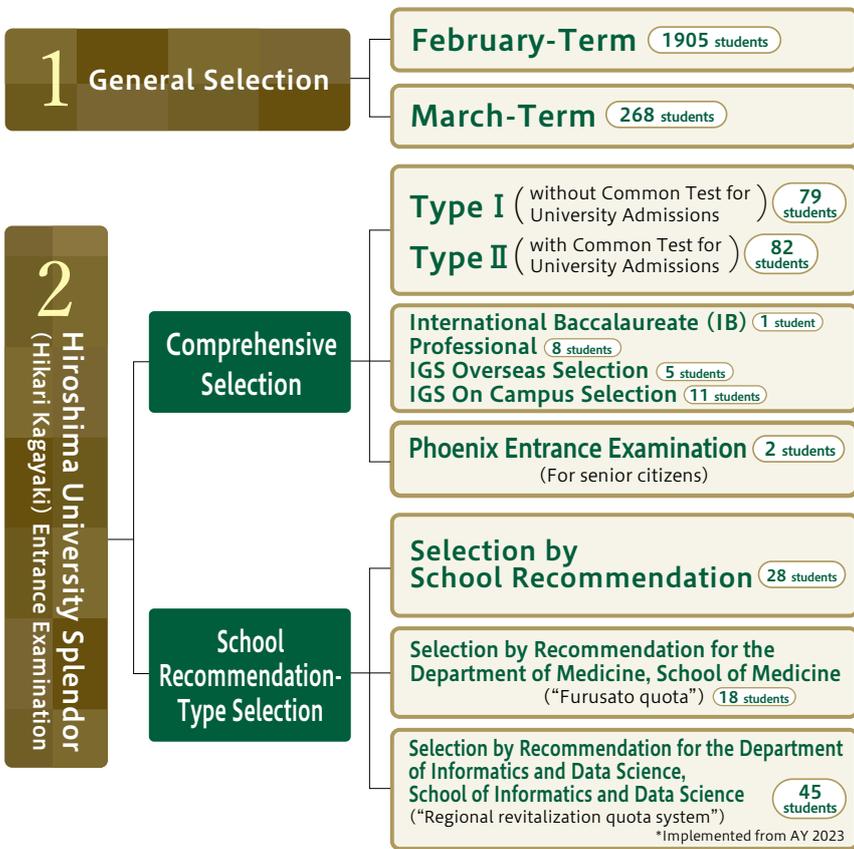
Hiroshima University looks forward to welcoming students with the following qualities:

- 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, professionals, and senior citizens

The figure on the right side of each entrance examination method shows the average number of students enrolled from AY 2021 to 2023.



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 Common Test for University Admissions and the university's specific academic examination.

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.

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

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

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.

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

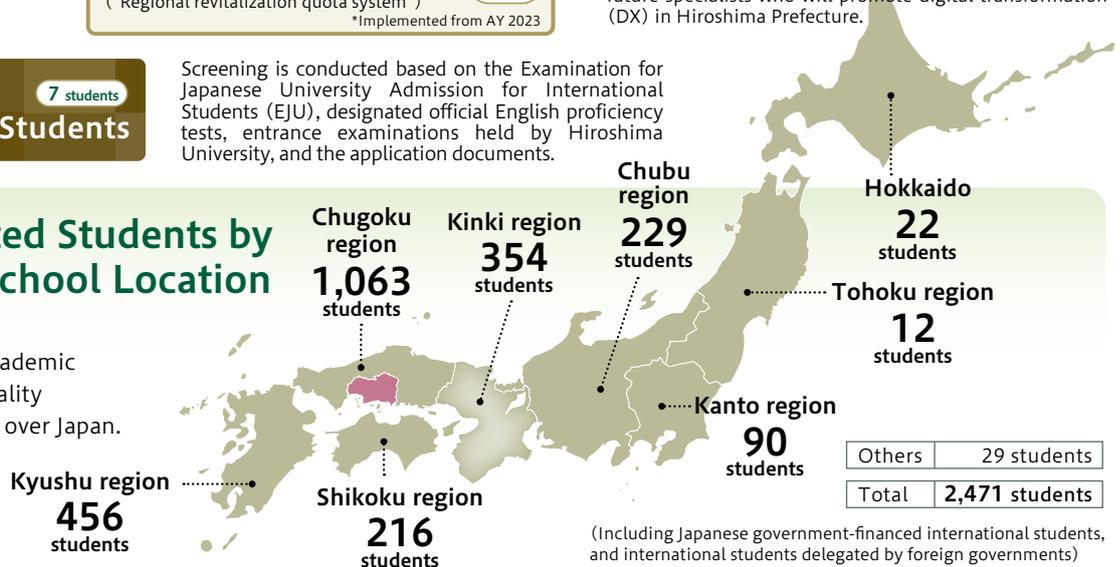
An advantageous local revitalization scholarship quota (Regional Development Quota) is set to train, in collaboration with the prefectural government of Hiroshima, future specialists who will promote digital transformation (DX) in Hiroshima Prefecture.

3 Selection for International Students (7 students)

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 2023)

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



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
- Career consultation and job placement consultation

Support Programs for Students Preparing for Job Searching

- Employment search guidance and seminar
- Distribution of the booklet "Job Searching Handbooks" for students
- Career development and job search counseling
- Providing information through the "Momiji" student information platform and website

Human Resource Development Support Programs for Young Researchers

- Practical program for career and skill development
- Career consultation and matching support for doctoral students
- 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.

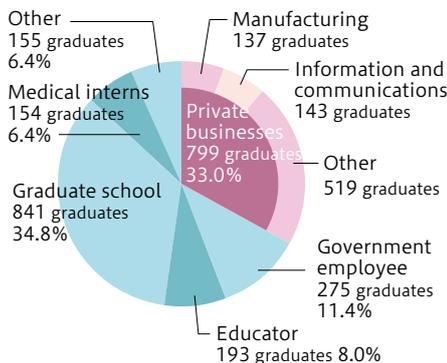


Employment Status

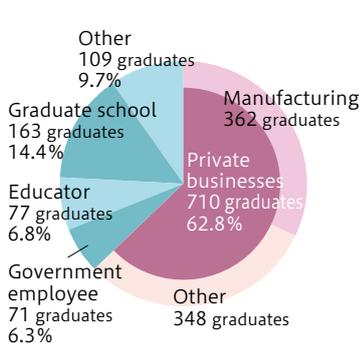
(Undergraduate School 1,267 job finders / Graduate School* 858 job finders in AY 2022)

* Students completing master's program

Undergraduate School



Graduate School



Main Employers

(Private sector) Mazda Motor Corporation; Micron Memory Japan; The Chugoku Electric Power Company, Inc.; Chugoku Electric Power Transmission & Distribution Company, Inc.; The Hiroshima Bank, Ltd.; NEC Corporation; Nippon Telegraph And Telephone West Corporation; Tsuruha Group Drug & Pharmacy West Japan Co., Ltd.; Kubota; Toyota Motor Corporation; TOTO; Panasonic; NEC Solution Innovators; Nippon Life Insurance; Sekisui Chemical; Fujitsu; Murata Manufacturing; KIOXIA Holdings Corporation; West Japan Railway Company; Honda Motor Company (Public sector) Hiroshima Prefecture; Hiroshima City; Shimane Prefecture; National Tax Agency Hiroshima Regional Taxation Bureau; Hiroshima Prefectural Police; Chugoku Local Finance Bureau; Ministry of Land, Infrastructure, Transport and Tourism; Ministry of Health, Labour and Welfare Hiroshima Labor Bureau (Academia) Hiroshima Prefectural Board of Education, Hiroshima City Board of Education, Ehime Prefectural Board of Education, Fukui Prefectural Education Agency, Kobe City Board of Education, Fukuoka Prefectural Board of Education

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 overall student life, including studies and daily problems from entrance to graduation.

Center for Academic Practice and Resources

The student staff (graduate students) of this "Learning Support Counter" assist other students with their education and learning-related questions, problems, and concerns. They also offer useful advice, including study skills for liberal arts education (English, Physics, Chemistry, and Mathematics). The staff also organize gatherings for new students.

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 problems in their university lives. Student counselors guarantee confidentiality and listen to their counselees attentively and patiently. If necessary, the Peer Support Room can refer 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 leader programs (ALP). In AY 2006, Hiroshima University was the first in Japan to inaugurate an accessibility leader training program. By AY 2022, the Accessibility Leadership Program (ALP) has produced 3,467 Accessibility Leaders at 24 universities, including HU, four companies, and two government agencies in Japan.

Health Service Center

The Center provides first-aid treatment and consultations by internists and nurses, consultations by psychiatrists, and counseling by clinical psychologists.

Financial Support

Hiroshima University's original programs

1. For students with academic excellence experiencing financial difficulty in starting or continuing university education

- Hiroshima University Phoenix Scholarship Program
- Hiroshima University Splendor Scholarship Program

2. Tuition fee assistance for graduate students with academic excellence

- Hiroshima University Excellent Student Scholarship

Japanese governmental programs

(from AY 2020, mainly for undergraduate students of Japanese nationality)

- Higher Education Student Support System (Scholarship + Enrollment Fee/Tuition Fee Exemption)

* Specific conditions must be met to be program beneficiaries.

A University Open to Society, Progressing Together with Society



Hiroshima University Kiteminsai Lab opens in the building adjacent to Hiroshima Station

The Hiroshima University Kiteminsai Lab, a satellite space of Hiroshima University, opened on October 16, 2022. The space is located on the second floor of the Hiroshima JP Building, adjacent to the south exit of Hiroshima Station.

The Kiteminsai Lab widely disseminates information about the University and its educational and research achievements through displays such as PR magazines and products developed by the University, and also holds various seminars including open lectures. It also serves as a co-working space that can be used freely by the general public.

The facility has great potential to connect the local community and Hiroshima University. Please feel free to stop by.



Hiroshima University Kiteminsai Lab

Hiroshima JP Building 2F, 2-62 Matsubaracho,
Minami-ku, Hiroshima City, Hiroshima
TEL 082-207-1764

For information on opening hours and
reservation status, please visit our website!
<https://www.hiroshima-u.ac.jp/kiteminsailabo>
(Page in Japanese)





Hiroshima University Industry-Government-Academia Collaboration TOPIC 1

Please look out for HU's endeavors in creating industries!

Find more information here!
<https://www.sukijyaken.jp/en/psi>



Strengthening efforts to create startup companies from Hiroshima University

● Peace & Science Innovation Ecosystem (PSI)

Hiroshima University has launched the Peace & Science Innovation Ecosystem (PSI), a consortium of seven universities in the Chugoku and Shikoku regions, with the aim of sustainably creating startup companies. In AY 2022, we provided financial and mentoring support to 19 researchers who were looking to start their own business. On March 20, 2023, we held a Demo Day activity report session at the Kiteminsai Lab, which generated a significant impact. Some of the supported researchers have already started their businesses.

The Kiteminsai Lab is also used as a venue for public lectures, seminars, and events for the local community. Demo Day was also held here.



Provision of activity expenses of approximately 300,000 yen per project

AY 2022 17 applications 10 selected

AY 2023 19 applications 10 selected

● Higashihiroshima City Student Startup Challenge

The Higashihiroshima City Student Startup Challenge, supported by Higashihiroshima City and Hiroshima University, started in AY 2021 as an initiative to embody students' uninhibited and creative ideas and entrepreneurial mindset born from their daily lives and experiences in classes. In addition to supporting student teams with activity expenses, this project supports students, aiming to commercialize their projects by providing free advice and cooperation from university faculty and staff and venture capital. In AY 2023, we will be supporting the activities of a total of 10 teams: eight teams from Hiroshima University and two teams from Kindai University. There have already been cases in which student teams that received support have started venture companies.

Hiroshima University Industry-Government-Academia Collaboration TOPIC 2

We aim to further strengthen collaboration between industry, government, and academia!

Find more information here!
<https://www.sukijyaken.jp/en>



Promoting industry-government-academia collaboration using digital tools

The Hiroshima LOVE It consortium, a next-generation DX consortium, has been established in October 2022 by Hiroshima University to further deepen its collaborations with a wide variety of companies and organizations. By using digital tools to their full extent, this consortium will grasp the needs of companies and organizations more quickly and efficiently than ever before to strengthen collaborations. Together with the 66 participating institutions (as of the end of June 2023), we will further enhance industry-government-academia collaboration.



The Kiteminsai Lab sells products born from Hiroshima University's industry-government-academia collaboration activities as well as Hiroshima University merchandise. Please feel free to take a look.

Products born from industry-government-academia collaboration at Hiroshima University

● Momiji Manju Light with 50% less carbs

In collaboration with Nishikido Corporation, we chose ingredients with low GI values (an index that indicates the degree of rise in blood sugar levels after meals), ingredients with high dietary fiber, and ingredients with complex carbohydrates while avoiding sugar as much as possible, and with these and other efforts, we succeeded in reducing the amount of sugar used by 50% compared to the regular Momiji Manju.



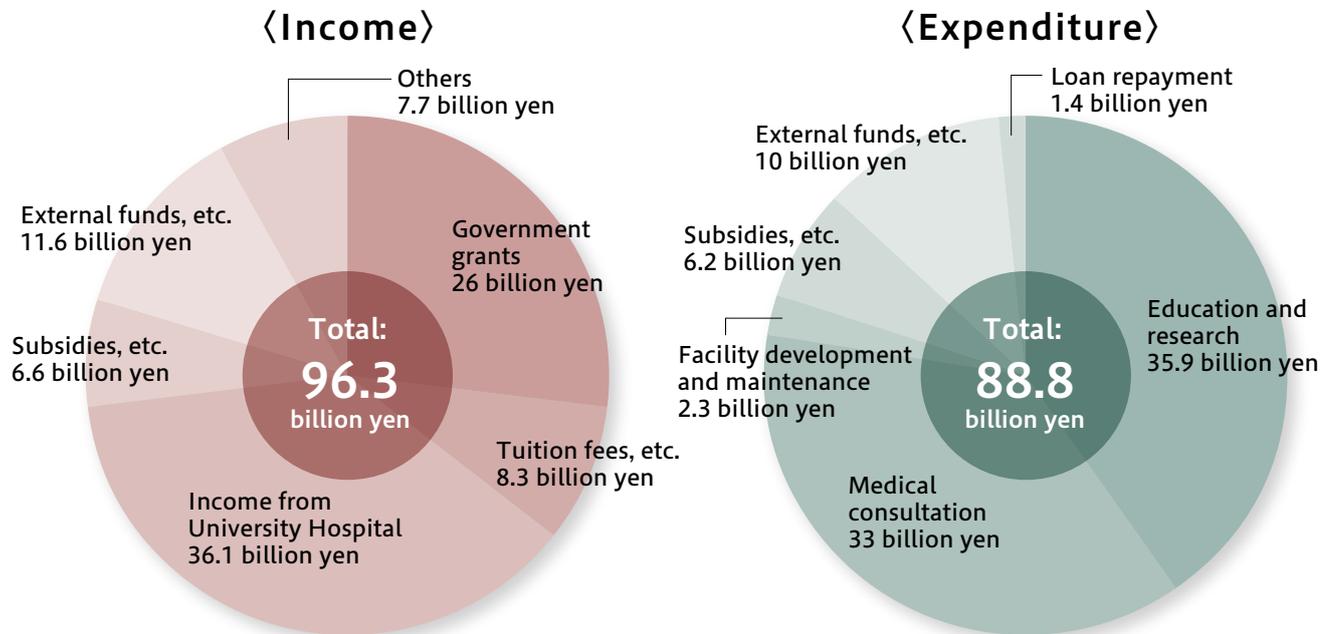
● Hiroshima University Bento

To commemorate the 150th anniversary of the founding of Hakushima School in 2024, we have developed the Hiroshima University Bento with HIROSHIMA EKIBENTO CO., LTD. The students researched ingredients associated with Hiroshima University, consulted with President Ochi, and selected ingredients that would go well with the bento box. It offers a wide variety of Hiroshima Prefecture's famous dishes and ingredients produced in Hiroshima Prefecture.



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 2022)



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. Accordingly, the university has set up a fund for uplifting Hiroshima University and energizing Hiroshima's local communities for its “75 + 75 year anniversary.” 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 / Splendor 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 2008-2023)
207
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 2010-2022)
1,889
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
(AY 2011-2022)
1,939
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.

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 –

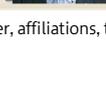
Hiroshima University invites Nobel Prize winners and other world-leading researchers to hold lecture and discussion sessions on a regular basis. This provides valuable opportunities for students who aim to become a scientist, allowing them to feel close to findings and studies that have astonished the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

 <p>● 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</p> <p>The 2012 Nobel Prize in Physiology or Medicine</p>	 <p>● 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, Tokyo Institute of Technology's Institute of Innovative Research</p> <p>The 2016 Nobel Prize in Physiology or Medicine</p>
 <p>● The 1st "The Wisdom from World-Renowned Researchers" (March 7, 2016) Dr. Shinya Yamanaka Director, Center for iPS Cell Research and Application, Kyoto University, Japan</p> <p>The 2012 Nobel Prize in Physiology or Medicine</p>	 <p>● 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</p> <p>The 2014 Nobel Prize in Physics</p>
 <p>● 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</p> <p>The 2015 Nobel Prize in Physics</p>	 <p>● Commemorative Lecture Conference for the Establishment of the Graduate School of Integrated Sciences for Life and the Graduate School of Biomedical and Health Sciences (July 20, 2019) Dr. Tasuku Honjo Director, the Kyoto University CCI Deputy Director-General and Distinguished Professor, Kyoto University Institute for Advanced Study</p> <p>The 2018 Nobel Prize in Physiology or Medicine</p>
 <p>● The 3rd "The Wisdom from World-Renowned Researchers" (April 5, 2017) ● "The Wisdom from World-Renowned Researchers" in Tokyo (January 9, 2019) Sir Paul Nurse Director, Francis Crick Institute, UK Source : Fiona Hanson / AP Images</p> <p>The 2001 Nobel Prize in Physiology or Medicine</p>	 <p>● Commemorative Lecture Conference for the Establishment of the Graduate School of Humanities and Social Sciences and the Graduate School of Advanced Science and Engineering (July 2, 2020) Dr. Akira Yoshino Honorary Fellow, Asahi Kasei Corp.</p> <p>The 2019 Nobel Prize in Chemistry</p>
<p>● The 86th Hiroshima University Lecture Meeting (March 27, 2018) Dr. Muhammad Yunus Founder, The Grameen Bank</p> <p>The 2006 Nobel Peace Prize</p>	 <p>● The 5th "Wisdom from World-Renowned Researchers" (September 25, 2021) Dr. Harvey J. Alter Scientist Emeritus, National Institute of Health, U.S. © Nobel Prize Outreach, Photo: Joy Asico</p> <p>The 2020 Nobel Prize in Physiology or Medicine</p>

Becoming a Global Citizen : Lecture by Special Instructor

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.

《 Main lecturers in AY 2017-2023 》

 <p>Dr. IOKIBE Makoto Political scientist and historian President, Hyogo Earthquake Memorial 21st Century Research Institute</p>	 <p>Mr. KUSUNOKI Yuji President, Rakuten Securities, Inc. Graduated School of Letters, Hiroshima University</p>	 <p>Mr. FUWA Toru Former Director and Vice President, Wakunaga Pharmaceutical Co., Ltd.</p>
 <p>Mr. IKEGAMI Akira Freelance journalist</p>	 <p>Mr. TSUKUDA Kazuo Senior Executive Advisor, Mitsubishi Heavy Industries, Ltd.</p>	 <p>Ms. HORIKAWA Keiko Non-fiction writer, Graduated School of Integrated Arts and Sciences, Hiroshima University Keiko Horikawa©MAL</p>
 <p>Dr. IKEGAYA Yuji Professor, Graduate School of Pharmaceutical Sciences, The University of Tokyo</p>	 <p>Ms. NAKAMARU Michie Opera singer (winner of the Maria Callas Grand Prix)</p>	 <p>Mr. MIYAMA Hideaki Advisor, Hiroshima Television Corporation</p>
 <p>Mr. ITO Toyo Architect</p>	 <p>Mr. NINOMIYA Seijun Sports journalist</p>	 <p>Mr. Morley Robertson International journalist</p>
 <p>Mr. INOUE Kosei Coach, All-Japan Men's Judo Team</p>	 <p>Mr. NOMURA Kenjiro Baseball critic Former manager, The Hiroshima Toyo Carp</p>	 <p>Dr. MOGI Kenichiro Neuroscientist</p>
 <p>Mr. UEDA Sokei Grandmaster, Ueda Soko Tradition of Japanese Tea Ceremony</p>	 <p>Mr. HIROKANE Kenshi Manga artist</p>	 <p>Mr. YANO Hirotake Chairman, Daiso Sangyo Co., Ltd.</p>
 <p>Mr. KAWABUCHI Saburo Captain (advisor), The Japan Football Association First chairman, The J.League</p>	 <p>Mr. FUKAYAMA Hideki Chairman, The Hiroshima Chamber of Commerce and Industry Adviser and Honorary Chairman, Hiroshima Gas Co., Ltd.</p>	 <p>Dr. YAMAGIWA Juichi Director-General, Research Institute for Humanity and Nature The former President of Kyoto University</p>
		 <p>Mr. YAMASAKA Tetsuro President, Balcom Co., Ltd. Graduated School of Education, Hiroshima University</p>

(Japanese syllabary order, affiliations, titles, etc. are as of the date of the lecture.)

Hiroshima University is composed of three campuses (Higashi-Hiroshima, Kasumi, and Higashi-Senda). Aside from the School and Graduate School buildings, the campuses consists of five libraries and various other experimental and research facilities, as well as cultural and sports facilities, which provide a wide range of front-line educational and research activities.

Higashi-Hiroshima Campus

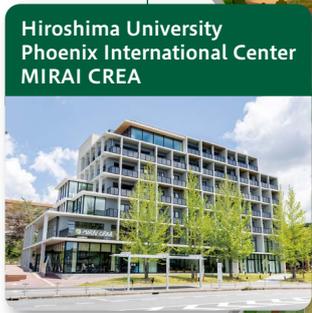
Higashi-Hiroshima City

- School of Integrated Arts and Sciences
- School of Letters
- School of Education
- School of Economics
- School of Science
- School of Engineering
- School of Applied Biological Science
- School of Informatics and Data Science

Higashi-Hiroshima Campus having an area of approximately 2.5 million m² is situated in Higashi-Hiroshima City, located in the center of Hiroshima Prefecture. It is the main campus of Hiroshima University, housing eight faculties and four graduate schools, such as the School of Integrated Arts and Sciences.



A warm welcome to the lush garden university, one of the largest Japanese national universities in terms of campus size.



Visit the official HU website to see the exact locations of the buildings.

Hiroshima University website

Access ▶ Higashi-Hiroshima campus ▶ Campus map ▶

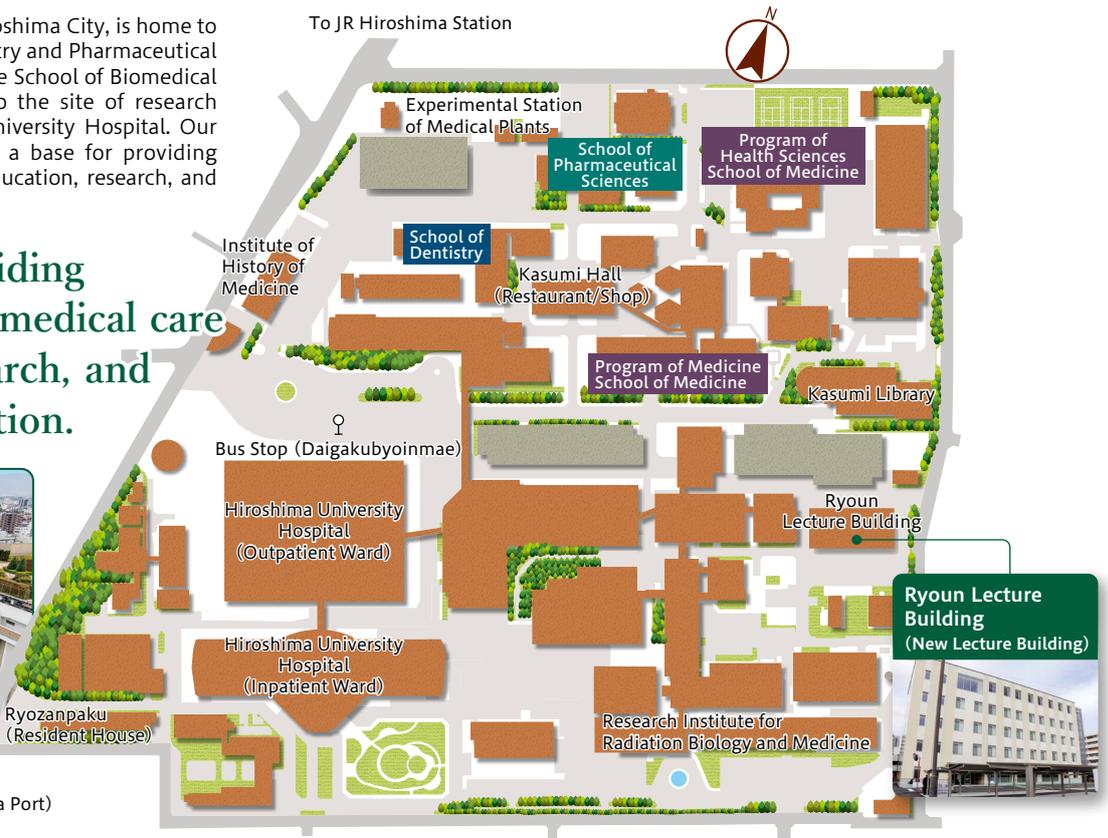
Around the campus (with building names and numbers) >>>

Kasumi Campus Hiroshima City

■ School of Medicine
 ■ School of Dentistry
 ■ School of Pharmaceutical Sciences

Kasumi Campus, located in Hiroshima City, is home to the Schools of Medicine, Dentistry and Pharmaceutical Sciences, as well as the Graduate School of Biomedical and Health Sciences. It is also the site of research facilities and the Hiroshima University Hospital. Our campus plays a major role as a base for providing state-of-the-art medical care education, research, and clinical information.

A base for providing state-of-the-art medical care education, research, and clinical information.



A major learning hub where the history of Hiroshima University overflows.



Higashi-Senda Campus Hiroshima City

■ School of Law
 ■ School of Economics Evening Course

The Higashi-Senda Campus is located in Hiroshima City, covering a part of the former site of Hiroshima University prior to its relocation to Higashi-Hiroshima City, where the most HU divisions are assembled on a single campus. The School of Law (daytime and evening courses) and the School of Economics (evening course) hold classes on this campus.



To Ujina (Hiroshima Port)

Phoenix International Center MIRAI CREA

〈Higashi-Hiroshima Campus〉

The Phoenix International Center (“MIRAI CREA”), opened in October 2021, is housed in a building designed on the concept of a “green-lined hill of encounters and exchanges,” with a symbolic exterior embodying a sustainable society. It has a spacious multi-purpose hall, a community kitchen, a cafeteria, meeting rooms, and other facilities. Residential rooms and exchange lounges occupy the third to seventh floors. The seventh-floor houses executive rooms for selected researchers. The center is well equipped for multiple purposes, including diverse academic and cultural activities, knowledge-sharing events, and safe and comfortable residences for selected researchers and students visiting from abroad. MIRAI CREA is expected to serve as a hub of knowledge to further enhance the status of Higashi Hiroshima as an international research center.



Fukuyama Tsuun Komaru Nigiwai Pavillion

〈Higashi-Hiroshima Campus〉

The pavillion was completed in 2019 as a multipurpose facility for students. Its interior features locally sourced wood from Hiroshima Prefecture. The pavillion can be used for various purposes, including students’ business start-up activities, meetings and self-study. This building was constructed by Yamane Holdings Co., Ltd. through generous donations from Fukuyama Transporting Co., Ltd. and the Shibuya Ikueikai Foundation.



Central Library
(Higashi-Hiroshima Campus)



West Library
(Higashi-Hiroshima Campus)



East Library
(Higashi-Hiroshima Campus)



Kasumi Library
(Kasumi Campus)



Higashi-Senda Library
(Higashi-Senda Campus)

Libraries

The Hiroshima University library system comprises five libraries and holds approximately 3.42 million volumes in total, one of the largest university collections in Japan. The Central Library is equipped with an automated 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 materials are also stored at the libraries.

Facility Outline (as of 2023)

Library/location		Surface area	No. of seats for reading	No. of volumes	Main categories in the collection
Central Library	Higashi-Hiroshima Campus	16,053㎡	992 seats	Approx. 2.28 million	Books and periodicals in the fields of education, other human and social sciences, and natural sciences
East Library		1,745㎡	29 seats	Approx. 0.24 million	Books and periodicals in the fields of engineering, biology, and other natural sciences
West Library		6,102㎡	882 seats	Approx. 0.64 million	General books, study guides, periodicals in all subjects and books on natural sciences
Kasumi Library	Kasumi Campus	2,382㎡	385 seats	Approx. 0.19 million	Books and periodicals in the fields of medicine, dentistry, pharmacology, and public health
Higashi-Senda Library	Higashi-Senda Campus	1,610㎡	90 seats	Approx. 0.07 million	Books and periodicals in the fields of law and economics

Databases and Services

The libraries have databases for newspaper and journal 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.



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.



Learning support space, BIBLA

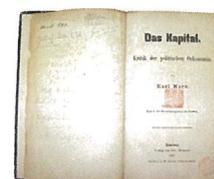
The libraries are provided with free spaces for students’ activities, such as group work, discussion, and preparation for presentations, as well as independent study using the internet (Wi-Fi). Movable whiteboards available for free use and spacious tables perfect for spreading out books and documents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

Special Collections

The Central Library holds Special Collections of rare and valuable materials. The Collections include private collections, special collections, large collections, and depository collections. Some items from the collections are digitized and made available online as digital collections.



Gakumon no Susume
(Encouragement of Learning)
by Yukichi Fukuzawa, 1872



The first edition of Capital,
Volume 1, by Karl Marx

For further information



Japanese edition
<https://www.lib.hiroshima-u.ac.jp/>



English edition
<https://www.lib.hiroshima-u.ac.jp/?lang=english>



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. This building was constructed with donations from Satake Corporation, other companies, and HU graduates.



Hiroshima University Museum

〈Higashi-Hiroshima Campus〉

Hiroshima University Museum is an Eco-museum. In the area, there is the main museum, seven satellite museums, and the Path of Discovery (a natural promenade across the vast Higashi-Hiroshima Campus) linking these museums. In addition to its permanent exhibition, the Museum organizes theme-based exhibitions, nature observation tours (Field Navi) and other events.

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. 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. They are situated at seven locations: the Archaeological Research Section, the School of Applied Biological Science, the School of Science, the School of Letters, the Central Library, the Amphibian Research Center, and the Higashi-Hiroshima Botanical Garden.



Path of Discovery (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.

Higashi-Senda Innovative Research Center

〈Higashi-Senda Campus〉



As a “new center for humanities and social sciences with a focus on nurturing legal professionals,” the center provides education for students in the School of Law and other schools. It aims to conduct educational and research projects in collaboration with universities, industry, and local governments, among others.

Legal Service Center

〈Higashi-Senda Campus〉



The Graduate School of Humanities and Social Sciences Legal Service Center was established in 2005 as part of Hiroshima University Law School's social contribution activities. It offers free legal counseling concerning civil affairs once a week.

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. The current building, partially constructed with bricks and stones in use at the time of the atomic bombing, is designated as a hibaku building.

Hiroshima University Hospital

〈Kasumi Campus〉



With the philosophy of “Provide holistic and integrated medical care,” “Foster superior medical experts,” and “Pursue new medical innovations,” Hiroshima University Hospital, as a core hospital in the Chugoku/Shikoku area, offers advanced medical care that reflects the latest headways in the rapidly progressing field of medicine.

Partnership with Local Professional Sports Teams

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

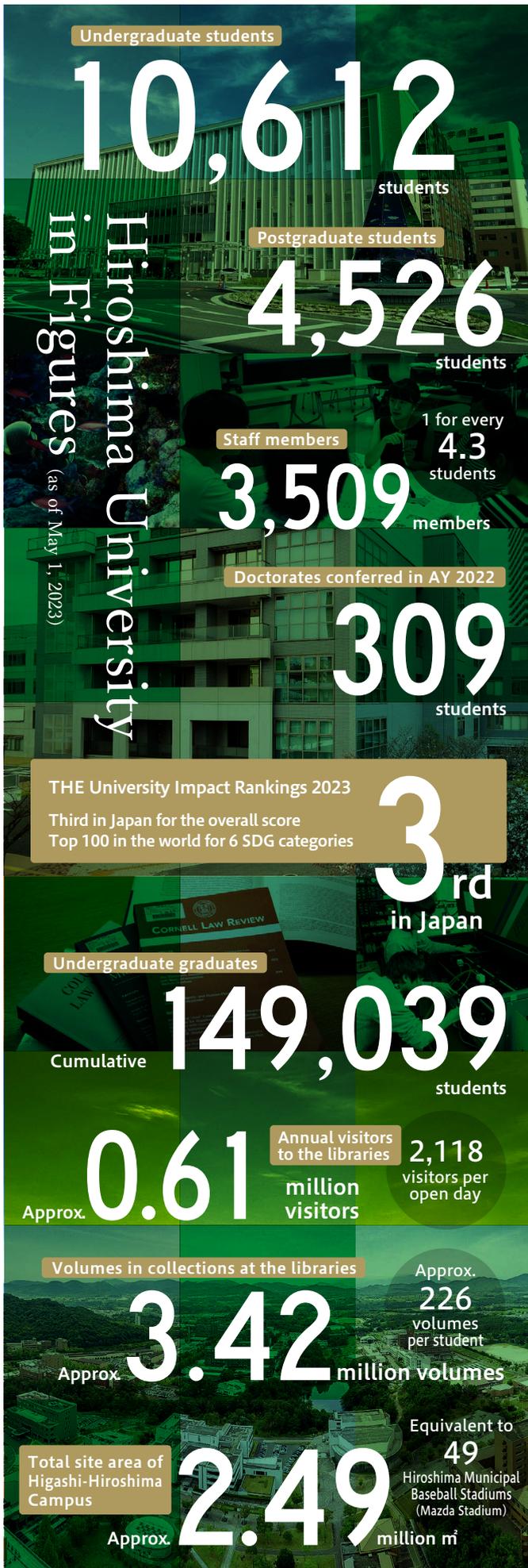


Response to the COVID-19 Pandemic

Concerning clinical care, the Hiroshima University Hospital has eight beds reserved for critically ill patients — whose treatment includes ECMO. In the event of an infection outbreak, the hospital has 28 beds for patients with moderate symptoms to provide all-out medical attention. The total number of hospital admissions (number of patients x number of days) exceeded 2,000. Hiroshima University Hospital quickly responded and announced its participation in the national government's workplace vaccination campaign. Not limiting itself to only vaccinating HU students and faculty members, the hospital has actively promoted the campaign in partnership with Higashi-Hiroshima City, undertaking workplace vaccinations at local companies, dispatching dentists to perform certain medical acts, and operating large-scale collective vaccination centers established by Hiroshima City. The hospital has thus far implemented a total of over 100,000 vaccinations.

For further information >> <https://www.hiroshima-u.ac.jp/en/hosp/>





History

Hiroshima University has nine schools as its forerunners, which is the largest number in Japan. Firstly, seven schools were integrated, namely Hiroshima Normal School (formerly Hakushima School, established in 1874), Hiroshima Women's Higher Normal School (formerly Hiroshima Girl's High School, established in 1887), Hiroshima Higher Normal School (established in 1902), Hiroshima Higher Technical School (formerly Hiroshima High Institute of Technology, established in 1920), 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), Hiroshima High School (established in 1923), and Hiroshima University of Literature and Science (established in 1929). 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

2013

● Opening of new outpatient clinical building

2016

● Opening of the Higashi-Senda Innovative Research Center

2018

● Establishment of the School of Informatics and Data Science

2019

● Establishment of graduate schools (Graduate School of Integrated Sciences for Life, Graduate School of Biomedical and Health Sciences)

2020

● Establishment of graduate schools (Graduate School of Humanities and Social Sciences, Graduate School of Advanced Science and Engineering)

2021

● Opening of Hiroshima University Phoenix International Center MIRAI CREA

2022

● Opening of the Arizona State University (ASU) Thunderbird School of Global Management-Hiroshima University Global School

2023

● School of Law relocates to Higashi-Senda Campus



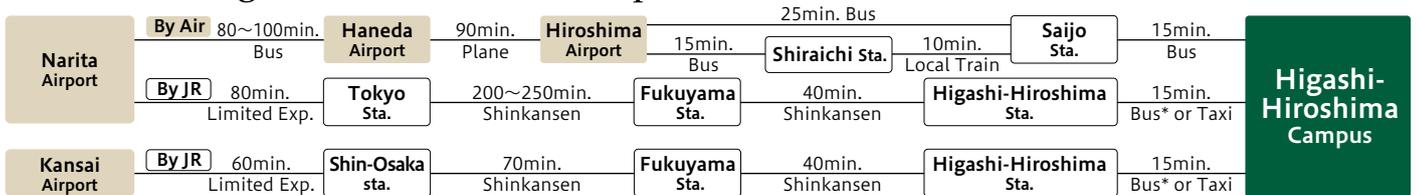
● Establishment of the Graduate School of Innovation and Practice for Smart Society



- ① (Hiroshima City (Midori Area))
Elementary School
High School
- ② (Hiroshima City (Shinonome Area))
Elementary School
Junior High School
- ③ (Higashi Hiroshima City)
Kindergarten
- ④ (Mihara City)
Kindergarten
Elementary School
Junior High School
- ⑤ (Fukuyama City)
High School

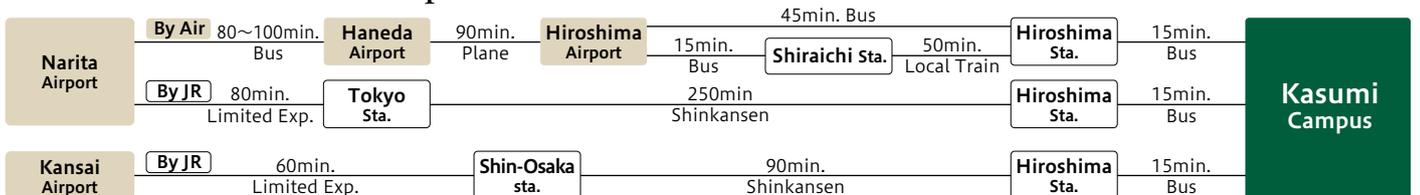


Access to Higashi-Hiroshima Campus

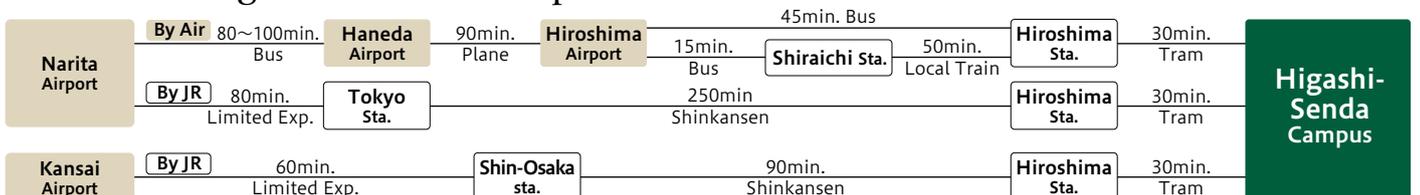


* HU-bound bus service operated only on weekday mornings

Access to Kasumi Campus



Access to Higashi-Senda Campus



Row out into a sea of chaos;
go beyond the horizon of creativity



Hiroshima University's Mascot
Hiroty®



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