

Corporate number 65

# Report on AY 2020 Operational Performance

June 2021

National University Corporation  
Hiroshima University



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## ○ University overview

### (1) Current profile (as of the end of AY 2020)

- ① Name: Hiroshima University
- ② Location
  - Headquarters : Kagamiyama, Higashi-Hiroshima City, Hiroshima Prefecture
  - Campuses : Higashi-Hiroshima Campus: Kagamiyama, Higashi-Hiroshima City, Hiroshima Prefecture  
Kasumi Campus: Kasumi, Minami Ward, Hiroshima City, Hiroshima Prefecture  
Higashi-Senda Campus: Higashi-Senda Town, Naka Ward, Hiroshima City, Hiroshima Prefecture
- ③ Officers
  - President : Mitsuo Ochi (since April 1, 2015)
  - Executive Directors : 8 (including two part-time executives)
  - Auditors : 2 (including one part-time auditor)
- ④ Schools, departments and other institutions
  - Academy
  - Headquarters for Education
  - Schools: 12  
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
  - Training and Research Vessel TOYOSHIO MARU\* (School of Applied Biological Science)
  - Graduate Schools: 4  
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
  - Marine Biological Laboratory\* (Graduate School of Integrated Sciences for Life)
  - Setouchi Field Science Center\* (Graduate School of Integrated Sciences for Life)  
Saijo Station (farm)\*
  - Setouchi Field Science Center\* (Graduate School of Integrated Sciences for Life)  
Takehara Station (Fisheries Research Station)\*
  - Advanced Courses: 1  
Special Course of Special Support Education
  - Attached Research Institutes: 1  
Research Institute for Radiation Biology and Medicine\*
  - Hospital

- Library
- National Joint Usage Facilities: 1  
Hiroshima Synchrotron Radiation Center\*
- Joint Usage Facilities for National Universities in the Chugoku/Shikoku Area: 1  
Saijo Seminar House
- Joint Education and Research Facilities on Campus: 26  
Research Institute for Nanodevice and Bio Systems\*, Research Institute for Higher Education,  
Information Media Center, Natural Science Center for Basic Research and Development, Morito Institute of Global Higher Education, Center for the Study of International Cooperation in Education,  
Health Service Center, The Center for Peace, Environmental Research and Management Center, Hiroshima University Museum,  
Beijing Research Center, Hiroshima Astrophysical Science Center, Institute for Foreign Language Research and Education,  
Hiroshima University Archives, Institute of Sports, HiSIM Research Center,  
The Center for Contemporary India Studies at Hiroshima University, Research Center for Diversity and Inclusion,  
Amphibian Research Center, Translational Research Center,  
Resilience Research Center, Center for Brain, Mind and KANSEI Sciences Research, Hiroshima University Genome Editing Innovation Center,  
Hiroshima University Digital Monozukuri (Manufacturing) Education and Research Center, AI/Data Innovation Education and Research Center, Harassment Consultation Office

- Attached Schools : 11  
Hiroshima University Kindergarten; Hiroshima University Kindergarten, Mihara; Hiroshima University Elementary School; Hiroshima University Elementary School, Shinonome; Hiroshima University Elementary School, Mihara;  
Hiroshima University Junior High School; Hiroshima University Junior High School, Shinonome; Hiroshima University Junior High School, Mihara; Hiroshima University Junior High School, Fukuyama;  
Hiroshima University Senior High School; Hiroshima University Senior High School, Fukuyama

Note: The asterisk denotes that the indicated facility has been certified as a base for either joint research use or joint educational use.

- ⑤ Students and school staff (as of May 1, 2020)
  - Students: Undergraduate students : 10,678 (including 91 international students)  
Graduate students : 4,513 (including 1,317 international students)  
(Including Hiroshima University Law School and Professional Development Program for Teachers and School Leaders)
  - Advanced Course students : 23
  - Attached school students : 3,773
  - Teachers and administrative staff : Teachers: 2,008 (including 215 at attached schools)  
Administrative staff: 1,803

## (2) Basic Objectives of Hiroshima University

### 1 Principles

To fulfill its mission as a national university that upholds its founding principle of existing as “a single unified university, free and pursuing peace,” Hiroshima University is guided by the following principles: 1) The Pursuit of Peace, 2) The Creation of New Forms of Knowledge, 3) The Nurturing of Well-Rounded Human Beings, 4) Collaboration with the Local, Regional, and International Community, and 5) Continuous Self-Development.

### 2 Basic policy

Located in Hiroshima—the world’s first A-bombed city, known as the International Peace Culture City—Hiroshima University aims to become a comprehensive research university that provides quality education and research opportunities at a level that will enable it to join the ranks of the world’s top 100 universities within the next decade. The university plans to achieve this by reforming itself thoroughly and promoting internationalization through steady implementation of the Hiroshima University Reform Plan, which includes the Research University Enhancement Promotion Project and Super Global University Creation Support Project (with the type-A aim of becoming globally competitive).

In addition, in continuing to respond to the social needs of the times and thereby shine globally over the next century, the University aims to improve its capabilities and strengths so that it can serve as Japan’s national center and Chugoku-Shikoku’s regional center and help the country to continue functioning as a world leader. Furthermore, Hiroshima University aims to cultivate peace-pursuing, internationally cultured people able to work both globally and domestically by maximizing its traditional liberal arts expertise and providing specialized, internationally competitive education programs based on global cutting-edge research.

Regarding research, the University will promote free and highly original research with the aim of conducting world-class research by advancing priority support, such as continuing to build research bases and improve research environments, as it has been doing since the 2nd medium-term target period, and the University will do so by using the Ministry of Education, Culture, Sports, Science and Technology’s Research University Enhancement Promotion Project. The University aims to further conduct high-quality cutting-edge research in such fields as the following, which are its strengths: 1) pedagogy, 2) condensed matter physics, 3) space science, 4) creation of functional materials, 5) semiconductor/nanotechnology, and 6) biotechnology. In addition, being a university that has supported reconstruction from the devastation of the atomic bomb, the University will develop a research base for medical treatment related to radiation disasters, and it will also conduct high-quality cutting-edge research in the fields of regenerative medicine, liver disease, and brain science research.

Regarding education, the University will cultivate peace-seeking, cultured global human resources with specialized knowledge and the ability needed to resolve various unpredictable issues facing humankind. To do so, the University will provide education with high international applicability by using the Super Global University Creation Support Project to concretely implement the Hiroshima University Reform Concept, formulated in the second medium-term target period. In addition, to improve its education to meet international standards and improve the quality of its education, the University will enhance its internal system for evaluating education, and based on evaluations, it will improve its education. Furthermore, the University will receive external evaluation by an international inter-university consortium (SERU).

Regarding social contributions, to help increase its international competitiveness and develop innovation, as it has been doing since the 2nd medium-term target period, the University will continue putting effort into promoting initiatives aimed at advancing collaboration with

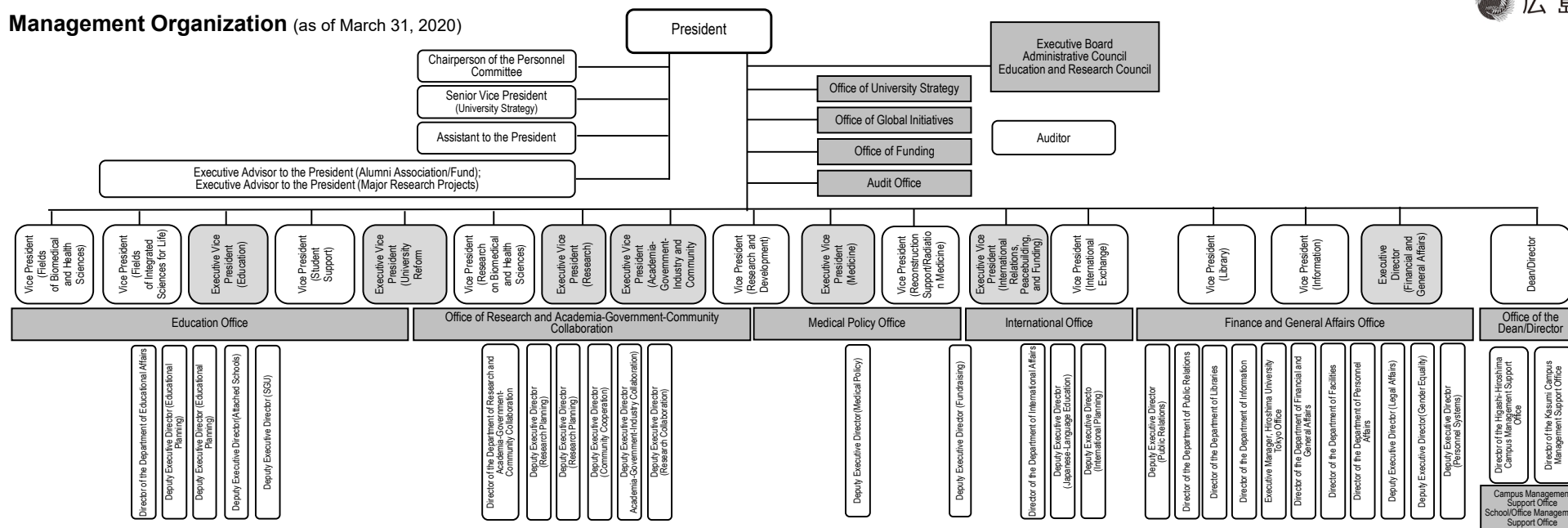
communities, the foremost of which is Hiroshima Prefecture, and industries, including transportation equipment and machinery industries clustered in the region, and to do so, it will use an innovative innovation creation program and a project for the Building of Consortia for the Development of Human Resources in Science and Technology. In addition, to help regional development and revitalization, in response to the demands of the Hiroshima prefecture region, which has a strong global orientation, the University will promote community-oriented education and research to cultivate human resources able to compete globally, and to do so, it will use a local (intellectual) base development project and the University’s community contribution project.

Regarding university management, to enable itself to maximize its functions of education, research and social contribution, the University will constantly review its governance system, strengthen the management foundation under the leadership of the President, and perform strategic management in ways that will optimize its strengths and features, all of which based on an analysis formulated on its Achievement-motivated Key Performance Indicators (AKPI®) and IR function (Institutional Research: Collection and analysis of information on various activities at the university).

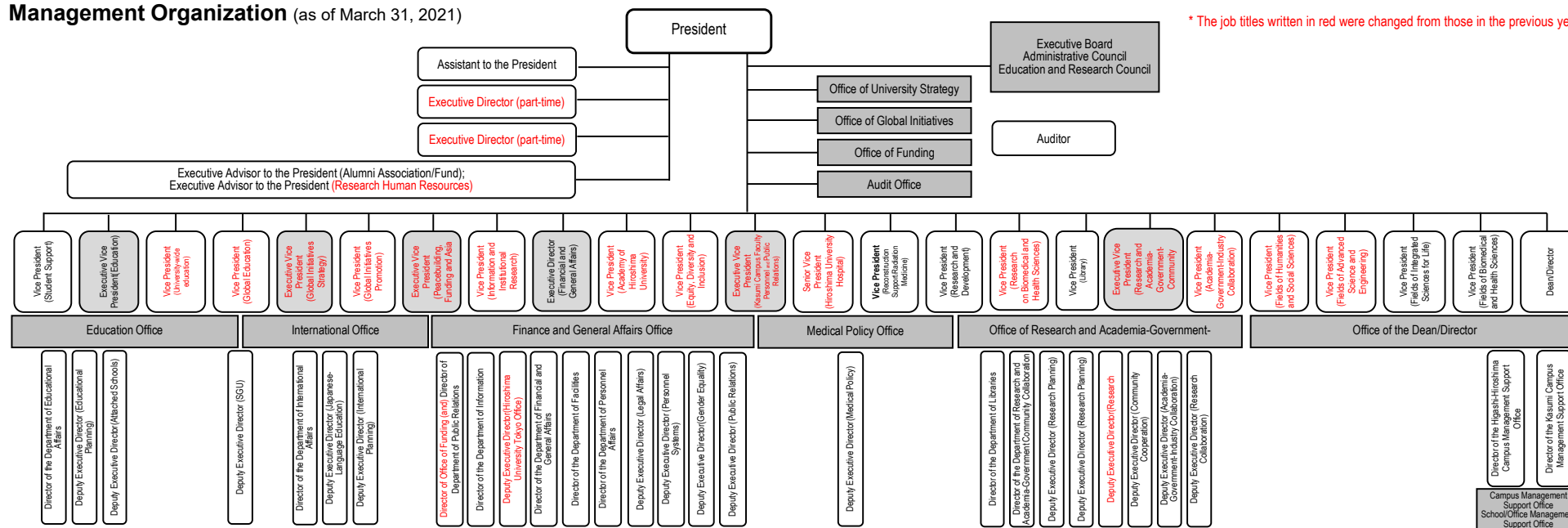
### (3) University structure diagram

See pages 4 and 5.

### Management Organization (as of March 31, 2020)

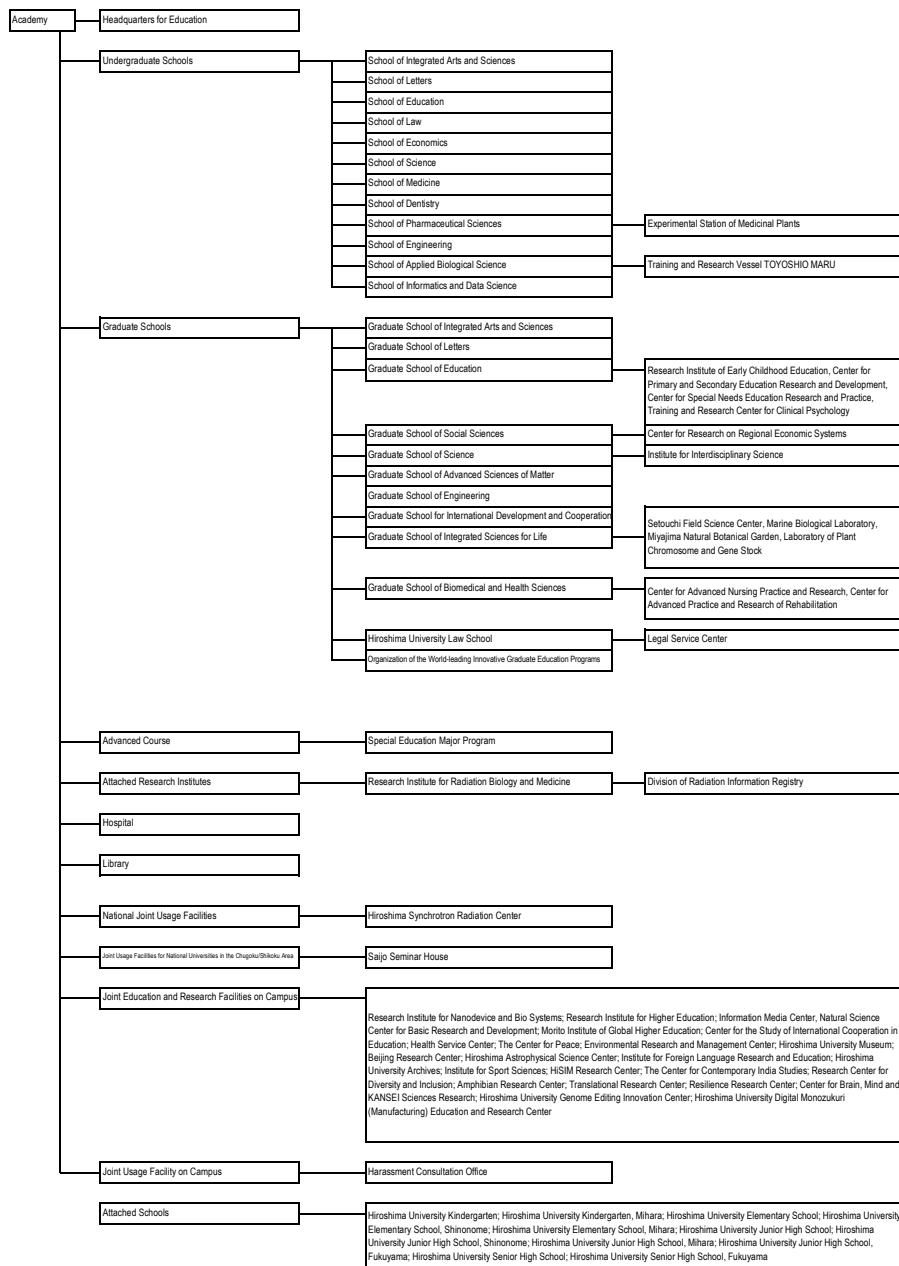


### Management Organization (as of March 31, 2021)

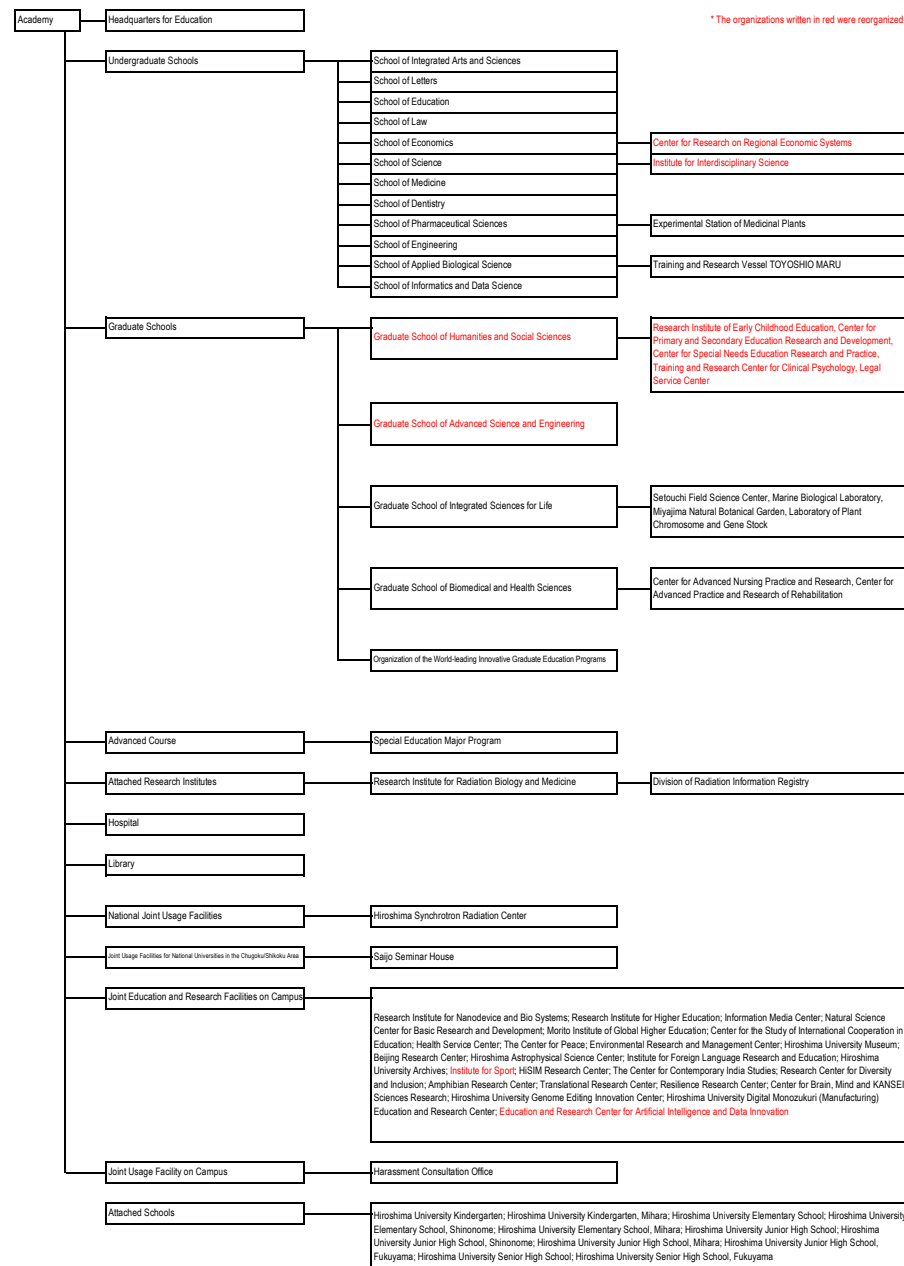


\* The job titles written in red were changed from those in the previous year.

Education and Research Organizations (as of March 31, 2020)



Education and Research Organizations (as of March 31, 2021)



## ○ Overview

To help build a free and peaceful international community that cherishes diversity, Hiroshima University is devoted to upholding its founding principle of existing as “a single unified university, free and pursuing peace” in undertaking education and research, practicing medicine, and taking part in community service. In accordance with its third medium-term goals as a university assigned to undertake the Research University Enhancement Promotion Project (RU) and Super Global University Creation Support Project (SGU [with the type-A aim of becoming globally competitive]), to continue to meet its responsibilities and thereby shine over the next century, in AY 2020, the University internationalized its education and strengthened its research capacity even further. To produce the best possible results regarding its RU and SGU, Hiroshima University is currently steadily executing a 10-year plan, titled “SPLENDOR PLAN 2017” (formulated in April 2017). To respond to diverse social needs, after reviewing graduate-school enrollment limits and assigning instructors strategically, under its unified decision-making system for the employment and assignment of teachers, to areas that it had decided to prioritize—based on its Achievement-motivated Key Performance Indicators (AKPI), which show the level of performance of faculty members as instructors and researchers, as well as an IR-indicator-based analysis—in April 2020, the University established the following graduate schools for the following reasons: the Graduate School of Humanities and Social Sciences, to strengthen its functions of offering humanities and social sciences programs, as well as interdisciplinary programs; and the Graduate School of Advanced Science and Engineering, to do the same with its science and engineering programs. To cultivate human resources able to help achieve the SDGs by conducting research and practical work that will help regions and the world resolve urgent issues, in October 2020, the University established the following programs, which became the University’s first joint degree programs: 1) Hiroshima University-University of Graz International Joint Sustainable Development Master’s Program in the Graduate School of Humanities and Social Sciences and 2) the Hiroshima University-Leipzig University International Joint Sustainable Development Master’s Program in the Graduate School of Advanced Science and Engineering. In addition, in October 2020, in collaboration with Arizona State University (ASU), an inter-university partner school in the United States, the University founded the Arizona State University/Thunderbird Global Management Graduate School—Hiroshima University Global School as Arizona State University’s school in Japan on the Higashi-Hiroshima Campus. This is the first case where a national university established a foreign university’s campus on its campus, and the University’s aim is to launch various efforts in collaboration with ASU, which is the most innovative school in the United States. As one such effort, to implement a daily and systematic collaborative project aimed at introducing city-planning achievements and know-how through strong collaboration between ASU and ASU’s municipality (the City of Tempe) into the University and Higashi Hiroshima City, where the University’s main campus is located, in April 2020, the University established a Town and Gown Office Preparation Room. With the support of Higashi-Hiroshima City, in October 2020, the University also began building an international exchange base facility with multiple functions, including not only residential functions for top overseas researchers and international students but also innovation creation, international exchange, and cross-industry exchange. Through these efforts, the University is steadily working its way toward creating a global campus and contributing to regional development and revitalization.

### 1. Improving the quality of the University’s education and research

## (1) Education

### ① Efforts to cultivate global citizens

- i) Examining whether the syllabi are numbered consistently and appear on the screen properly, and editing them [Project No. 1]  
Refer to Highly strategic and ambitious objectives and plans on p. 29.
- ii) Strengthening English proficiency [Project Nos. 2, 3, 7, and 8]  
Refer to Highly strategic and ambitious objectives and plans on pp. 29, 30, and 31.
- iii) Promotion and verification of the introduction of active learning into liberal arts education courses  
[Project No. 4]
  - To promote the introduction of active learning into liberal arts education courses, in both the first and second semesters, the University held open class days for its liberal arts education classes and also held study groups. In response to a request to be introduced to detailed examples of interactive and on-demand online lessons, which came from liberal arts education course instructors, required to teach classes online due to the novel coronavirus pandemic, the University allowed observing such classes by watching on-demand online classes and held study groups online. Compared to the previous year, during which face-to-face study groups were held, this year welcomed about three to four times more participants.

	Class observation	Study group
1st	81 participants (19 participants)	54 participants (15 participants)
2nd	43 participants (14 participants)	31 participants (12 participants)

Note: The figures in brackets indicate the number of participants the previous year welcomed.

Participant responses to surveys given after class observation and study group sessions included the following: “I learned a lot from the sessions, such as how online lessons look from the perspective of students and how I should provide feedback to student comments,” “The sessions served as good examples of how teaching materials and videos for online classes should be made,” and “The FD sessions were easy to participate in because they were held online.”

- In both the first and second semesters, the University asked liberal arts education course instructors to answer a survey on whether they will be incorporating active learning into their courses, and if so, how they will be doing so (Note: The following question was newly added to the survey given in AY 2020: “What kind of efforts did you make to encourage students to study actively in online classes?”). Participant responses to the survey included the following, proving that instructors did make efforts to encourage students to study actively in their online classes: “Students held group discussions on the Microsoft Teams channel and gave general reports on Power Point,” “Students were asked to explain the answers to questions and encouraged to ask questions about classes,” “My classes included exercises,” and “I set up a bulletin board where students could ask questions, which I



answered every time any were posted.” The University aims to introduce active learning into all of its liberal arts education courses in AY 2021, and the percentage of liberal arts education courses that had already introduced active learning by AY 2020 was 95.9%.

iv) Implementing a liberal arts education course titled “The power of liberal arts, which helps one compete internationally” [Project No. 4]

Due to the novel coronavirus pandemic, the following special lecture was held as an on-demand lecture: “The power of liberal arts, which helps one compete internationally.” The lectured aimed to help students who had enrolled in the University recognize the significance of studying at a university and to motivate them with help from people competing internationally at the forefront of various fields, such as sports, arts, sciences, and business, serving as lecturers. As part of the “Introduction to University Education” course, which is a compulsory subject that all new undergraduate students need to take immediately after enrollment regardless of which school they are affiliated with, the University offered the special lecture eight times in June to ensure that newly enrolled students would be able to attend at least two and welcomed 4,383 students (including 4,309 new enrollees).

Participants were asked to answer a survey, and the results were as follows.

- ① To the question “Did you find the lecture interesting?” more than 85% of all respondents, regardless of which special lecture they attended, answered either “Extremely interesting” or “Rather interesting,” indicating that although the lecture themes differed from one lecturer to another, students generally found the lectures interesting.
- ② To the question “How confidently can you say you acquired new ideas or social perspectives from the lectures?” about 90% of all respondents answered “Extremely confidently” or “Rather confidently,” indicating that the lectures were student-friendly and full of helpful information.

In addition, participant responses to the open-ended question included the following: “The lecture motivated me to reexamine myself in the context of the novel coronavirus pandemic and think about what I can do now” and “Although I currently have to stay home most of the time due to the new coronavirus pandemic and thereby am unable to make friends at school, listening to the lecture cheered me up.” As is reflected in the preceding responses, which showed that the attendees were generally satisfied, the lectures, based on real-life experiences, demonstrated the extensive knowledge of the lecturers, who represented various fields, and thereby inspired the attendees.

v) Enhancing interdisciplinary and field-fusion-type programs that cross multiple graduate schools

[Project No. 5]

The University continued offering its 4-year course and 5-year integrated Leading Graduate Education Program and its Doctoral Program for World-leading Innovative & Smart Education (WISE Program), which feature the strengths and distinctive fields of the University.

The following Leading Graduate Education Program produced 10 doctoral degree holders who are active globally in industries, schools and governments: 1) the “Phoenix Leader Education Program (Hiroshima Initiative) for Renaissance from Radiation Disaster” and 2)

the “TAOYAKA PROGRAM for creating a flexible, enduring, peaceful society.” In addition, the Leading Graduate Education Program titled “Phoenix Leader Education Program (Hiroshima Initiative) for Renaissance from Radiation Disaster” began holding discussions on establishing a fellowship (research incentive system) in collaboration with the International Atomic Energy Agency (IAEA) to ensure that program students can concentrate on their studies and research activities without feeling financially insecure.

The WISE Program titled “The Frontier Development Program for Genome Editing” welcomed 16 students who had passed the on-campus special selection test for admission in April 2020. Every year, active student recruitment activities have led to an increase in the number of applicants, and the University has welcomed more talented and motivated students than it had initially planned to recruit. In addition, to ensure the quality of the doctoral degree, the University conducted a doctoral dissertation research basic ability examination (QE), which examined seven students, who all passed. Furthermore, based on opinions and requests from students, received at regular exchange meetings attended by students, faculty, and staff, the University reconsidered the situation that students in higher years come to have an advantage in the Hiroshima University WISE Program Scholarship Guidelines, decided to expand the period covered by research achievements, and introduced a point system that clarifies the evaluation criteria. In addition, to enable the University to cover students’ travel costs incurred to conduct joint research as part of the program or conduct research at an overseas university or research institution or give a presentation at a society or conference in fields relating to the program’s education and research, the University developed guidelines on covering students’ travel costs incurred for education and research activities, laying the foundations for students to conduct research activities independently. In addition, to provide students with more financial support, the University expanded its TA/RA expenses. This academic year, due to the need to deal with the novel coronavirus infection, in offering program-related courses in AY 2020, the University followed its class implementation policy. Regarding off-campus training courses, such as “training” and “internship,” the University decided how it will handle training courses related to the program to allow itself to deal with matters flexibly.

On the other hand, this academic year, the University’s Program on Open Innovation Platform with Enterprises, Research Institutes and Academia (OPERA) titled “Consortium for industry-university cooperation in genome editing technology” developed into a COI-NEXT titled “Bio×Digital Transformation Industry-academia Collaboration Base,” welcoming various stakeholders. Accordingly, the University established a mechanism to effectively promote the social implementation of research results and human resource development related to genome editing technology.

From here on, the University looks forward to seeing these bases and the program collaborate with one another organically and aims to develop a program that will carry out everything, from basic research in the biotechnology field to social implementation. In this way, the University aims to cultivate human resources able to contribute to the achievement of a sustainable community that complies with the SDGs.

vi) Increase in the number of courses taught in foreign languages [Project No. 32]  
Refer to Highly strategic and ambitious objectives and plans on pp. 37 and 38.



- vii) Ensuring the quality of the University’s double degree programs  
[Project No. 6]

The University’s schools/offices examined whether the University’s double degree programs ensured their educational quality by counting the number of students their programs dispatched/attracted and examining whether their programs achieved their target. Furthermore, the headquarters exchanged opinions with those in charge of schools/offices and reexamined the position of the double degree programs in the context of the University’s international joint education programs. In October, the University established joint degree programs with the University of Graz (Austria) and Leipzig University (Germany), which were approved in December 2019. The Joint International Master’s Program in Sustainable Development (Hiroshima University – University of Graz), established in the Graduate School of Humanities and Social Sciences, aims to cultivate human resources of the following type: 1) has the ability to conduct research and practical work on urgent regional and global issues to help achieve the SDGs, especially poverty reduction, by taking social science approaches based on the theory of international cooperation in development studies; 2) has high communication skills to collaborate with others at universities, research institutes, governments and international organizations, private companies, and NGOs; and 3) has high employability in the international labor market. The Joint International Master’s Program in Sustainable Development (Hiroshima University – Leipzig University), established in the Graduate School of Advanced Science and Engineering, aims to cultivate human resources of the following type: 1) has the ability to conduct research and practical work on urgent regional and global issues to help achieve the SDGs, especially development issues centering on environmental issues associated with rapid urbanization in developing countries by taking science and engineering approaches based on sustainable development theory in environmental studies; 2) has high communication skills to collaborate with others at universities, research institutes, governments and international organizations, private companies, and NGOs; and 3) has high employability in the international labor market.

- viii) Promoting a Joint Graduate School Program administered in collaboration with the Capital Normal University (in China)  
[Project No. 6]

In collaboration with the Capital Normal University in China, where the University’s Beijing Research Center is located, in AY 2015, the University began offering a joint graduate school program titled the “Capital Normal University-Hiroshima University Joint Graduate School Program, which offers a number of double degree master’s programs. After calling for and screening applicants, the University selected four prospective students for enrollment in the programs in AY 2021 (note: seven were selected in AY 2016, nine in AY 2017, six in AY 2018, three in AY 2019, and three in AY 2020).

In addition, of the 23 students who have completed the master’s program double degree program of this program, three have enrolled in the University’s doctoral program. This has contributed to achieving the goal of this joint graduate school program, which is to increase the number of talented doctoral students.

## ② Educational quality improvement efforts

- i) Improvement of the University’s self-inspection/evaluation system for the revision/improvement of educational quality  
[Project No. 12]

Refer to Highly strategic and ambitious objectives and plans on pp. 31 and 32.

- ii) Establishing a Center for Academic Practice and Resources [Project No. 13]

• To put students at the center of learning and help them see their own progress, on April 1, 2020, the University established the Center for Academic Practice and Resources, which provides students with consultation services and helps them with their studies, thereby significantly improving the University’s educational environment. In AY 2020, the University held workshops to facilitate the operation of its three-level TA system “Hirodai TA,” held social gatherings for the University’s students, and established a consultation desk where the student staff offers consultation services to help students resolve their learning issues. Almost all of these events and services are offered with help from student staff hired by the Center. In addition, since the influence of the novel coronavirus pandemic persists, the student staff plans social gatherings themselves and holds them in ways that allow students to feel free to talk about any issues that may arise while studying at the University or in their daily lives. In AY 2020, three social gatherings were held, welcoming 20 participants: social gatherings for new students were held on November 17 and 18, and a social gathering for all Hiroshima University students was held on December 21.

- iii) Faculty placement using the cross-appointment system [Project No. 13]

By using the cross-appointment system, the University promotes the placement of teachers in ways that will allow mutual use of educational resources. The number of cases where the cross-appointment system was used in AY 2020 totaled 77 (20 at domestic institutions, 57 at overseas institutions), greatly surpassing the results at the end of March 2020, which was 22 (16 at domestic institutions, 6 at overseas institutions).

- iv) Introducing a certificate convenience store issuance service [Project No. 13]

On January 4, 2021, the University began offering a service that allows students to apply online for graduation certificates issued by the University and receive them at convenience stores. This system allows applying for various certificates online 24 hours a day and receiving certificates at convenience stores across the nation (at Lawson, FamilyMart and 7-Eleven). By the end of March, the service was used 1,959 times (issuing 3,771 certificates).

- v) Creating a database cloud of the student information system “Momiji” [Project No. 13]

Since the physical server hosting the database of the student information system could become unusable in the event of a large-scale disaster, the University switched from using a physical server to using a cloud server.

- vi) Promoting Education DX [Project No. 13]

On March 11, the following proposals made by the University were approved by the Ministry of Education, Culture, Sports, Science and Technology for the Ministry’s Grants for the

Promotion of University Reform (Project for Enhancing Education by Using Digital Technology) Plan for Enhancing Education at Universities and Technical Schools by Using Digital Technology: 1) Creating a Virtual Classroom Digital Learning (VCDL) Environment for Next-generation Online Education and 2) A Paradigm Shift in Learning Pioneered by DX: Creating a Virtual Classroom Digital Learning (VCDL) Environment to Realize New Education for the New Normal. To ensure the smooth implementation of this project as a university-wide effort, the University established an Education DX Promotion Council, and based on the Hiroshima University DX Promotion Basic Plan (January 2021), which was formulated with an eye on the information environment and digital-technology-based education, research, and administrative operations a decade from now, the Council will promote education DX by enhancing and expanding the online learning management system (LMS), formulating policies for the use of education and learning data, and developing digital teaching materials.

### ③ Student support

- i) Improving the pre-enrollment scholarship system [Project No. 14]  
Refer to Highly strategic and ambitious objectives and plans on p. 32.
- ii) Improving career support [Project No. 15]  
In AY 2020, the University's Global Career Design Center made the following efforts to help students with their job search.
  - With help from graduates and alumni associations and other organizations, on June 7, June 25, October 8, November 14, and February 13, the University held online seminars, in which male and female graduates who work at companies in the Kanto and Kansai regions provided students with consultation services. (Total number of participants: 216)
  - The University welcomed 15 graduates who are active business owners in Hiroshima's business world as lecturers and held an event titled "Career Design Course—Professional Graduates Talk about Your Future." At the event, the lecturers addressed topics in various industries and described what attitudes students are expected to have toward working, creating an opportunity for students to think about their future. (Participants: 250)
  - To respond to the need for help with early job hunting, the University created a job hunting information booklet for sophomores. In addition, the University held job hunting startup seminars for sophomores on December 10, February 10, and March 10.
  - In the Regional Collaborative Platform for Carving Out the Future HIRAKU project (project for the Building of Consortia for the Development of Human Resources in Science and Technology, "Program for Developing Next Generation Researchers" [Ministry of Education, Culture, Sports, Science and Technology]), the University was only able to dispatch four students on long-term internships due to the novel coronavirus pandemic. However, projects other than the above were implemented online, which allowed them to be carried out just as usual. In particular, because the HIRAKU 3MT Competition 2020 was held online, the University expanded the recruitment target of participants to include not only its affiliated universities mainly in the Chugoku-Shikoku region but also doctoral students of national, public and private universities across Japan. In addition, scholarships were given to the top three prize winners in each language division of Japanese and English.

In addition, as a result of the University's efforts made so far, Hiroshima University ranked 2nd for activeness and 6th overall on the University Image Survey of Company Human Resources Representatives (announced on June 3, 2020)—conducted by Nikkei, Inc., and Nikkei HR, which provides help with finding employment and changing careers—receiving high praise for the second consecutive year following last year.

- iii) Holding the Hiroshima University Community Meetings with guardians [Project No. 15]  
To help guardians deepen their knowledge of the University's learning environment and student support, the University held Hiroshima University Community Meetings with guardians (which have been held since AY 2018), in which the University gave briefings on student life, studying abroad, and career paths after graduation. In addition, at the meetings, graduates and graduate students gave lectures. There were also opportunities for exchanging information and seeking consultation. In AY 2020, the University held Hiroshima University Community Meetings at 6 venues (Kobe, Okayama, Hiroshima, Matsuyama, Fukuoka, and Oita) with additional briefings on the University's efforts and student life under the influence of the novel coronavirus pandemic. At information exchange meetings, the University and guardians actively exchanged opinions, making the meetings valuable opportunities to share thoughts with guardians during the novel coronavirus pandemic.  
A total of 311 guardians and family members participated. Regarding participant responses to a survey taken at the end of the Hiroshima University Community Meeting, when respondents were asked about each program, more than 74% of them selected a score of four or higher (with 5 being the highest, indicating satisfaction, and 1 being the lowest, indicating dissatisfaction). In addition, the percentage of respondents who gave a four or higher score for the meeting in general was at least 92.6%. Furthermore, participant responses to the open-ended question included the following: "While I do not have many opportunities to come to Hiroshima due to the novel coronavirus pandemic, the meeting gave me an idea of what the University is like. It gave me something to talk about with my child," "While the novel coronavirus causes much anxiety and worry, I was glad I participated in the meeting because it gave me an opportunity to talk to other parents and teachers in person," "I found the lectures by graduates and graduate students very helpful, "I was worried about my child leading life under completely new circumstances due to the novel coronavirus. But I was relieved to learn that the University puts students first in providing them with an education," and "I was pleased with the information exchange meeting because the University paid great attention to detail in answering my questions." On the other hand, some participants responded in the following ways: "I want the University to do its best in providing new students with what they missed over the past six months" and "I want the University to come up with measures to coexist with the novel coronavirus as quick as it can."
- iv) Improving education on accessibility [Project No. 16]  
The following efforts were made, and the attendance rate of accessibility education for members of the University was 39.1% as of the end of March 2021, greatly surpassing the target value of 20%, aimed to be achieved by the end of AY 2021.

- To improve accessibility literacy, accessibility education was incorporated into the Introduction to University Education course (a liberal arts course), which was attended by 2,486 participants.
- The 15th Accessibility Leader Development Program was implemented as follows, and the program produced 33 accessibility leader qualification holders (9 passed the 1st grade and 24 passed the 2nd grade). The total number of program participants was 830.
  - 1) Online Accessibility Course 2019 [Introduction] and [Basic] (April–August: 171 participants)
  - 2) Online Accessibility Course 2020 [Introduction] and [Basic] (August–February: 509 participants)
  - 3) Four liberal arts courses, four specialized courses (112 participants)
  - 4) Holding of workshops/training sessions: Sign language workshops (online; August; 38 participants), accessibility training sessions (online; March 8)
  - 5) The 15th Accessibility Leader Certification Examination (administered as an IBT [Internet Based Test]) (December)

In addition, to prevent the spread of the new coronavirus infection, the University promoted online interviews, information support, and teaching material support more than ever, and it switched to a system that processes applications for support, special-care requests, and applications for special measures entirely online. (111 applicants for support, 899 special-care courses, 478 cases of online support)

Furthermore, to improve the basic environment for providing reasonable care, the University created the Booklet for Accessibility and Support for Faculty and Staff 2021, which reflects the latest trends in social barriers, support needs, support systems, support services, and support technologies in schools, and the booklet was introduced to the members of the University.

- v) Enhancing mixed-living dormitories using rented dormitories [Project No. 34]  
Refer to Highly strategic and ambitious objectives and plans on p. 38.

#### ④ Improving the University's entrance examination system

- i) Implementing individual screenings to evaluate and judge applicants' abilities, motivation, and aptitude in a multifaceted and comprehensive manner [Project No. 17]  
To clarify the characteristics of each entrance examination, the University changed its entrance examination category names while making improvements from the perspective of multifaceted and comprehensive evaluation as follows: general admissions → general screening, AO admissions → comprehensive screening, recommended entrance examination → school-recommendation-type screening. Furthermore, based on the new entrance examination category names, the University formulated guidelines for screening applicants for enrollment in AY 2021 and student recruitment guidelines and announced them on its official website by the end of November 2020.

In addition, while paying attention to the deliberation of the Cooperator's Conference on Multifaceted Evaluation of University Admissions Screening, established by the Ministry of Education, Culture, Sports, Science and Technology, the University summarized what changes it made in its entrance examinations for freshmen undergraduates to be enrolled in

AY 2022 and AY 2023 and announced the following changes on its official website by the end of March: 1) requiring a presentation in the interview, 2) changing the score distribution of the interview, 3) changing the subjects to test applicants on in the National College Entrance Examination and general screening, 4) changing the score distribution of such subjects, and 5) changing the screening method.

- ii) Using external English examinations for undergraduate entrance examinations and verifying their effectiveness [Project No. 18]  
Refer to Highly strategic and ambitious objectives and plans on p. 32.
- iii) Using the English version of the Internet application system for graduate school entrance examinations [Project No. 19]  
Refer to Highly strategic and ambitious objectives and plans on pp. 32 and 33.
- iv) Using external English examinations for graduate school entrance examinations [Project No. 20]  
In screening graduate school applicants in the first half of AY 2020, in accordance with the admission policy, three graduate schools adopted qualification/certification tests that can measure the four English skills. In addition, in the second half of AY 2020, the qualification/certification tests were adopted by all four graduate schools.

## (2) Research

### ① Developing world-leading research bases

- i) Efforts to continue to develop various research bases and help them expand [Project No. 21]  
To promote transdisciplinary collaboration/fusion and interdisciplinary research through selection and evaluation so that various research projects, from basic research to innovation creation, will be continuously pursued and developed as the core of the university's research capabilities, in AY 2013, the University developed a global research center formation system on campus.

This system recruits and selects incubation research bases on campus and actively helps them become strategically organized with clear goals so that they can develop into independent research bases capable of conducting world-class research activities.

In AY 2020, the University certified three research institutes as incubation research centers. Furthermore, a strict final evaluation, including a hearing examination, was performed on incubation research centers that were certified before the previous academic year by the Organization for Research and Academia-Government-Community Collaboration, which comprises the President, serving as the Head, and all Deans and Directors of all schools/offices. Consequently, the Organization for Academic Research and Industry-Government Collaboration decided to promote one of the 4th-period incubation research centers to a Center of Excellence and also certified it as a Cutting-edge International Project. The Organization for Academic Research and Industry-Government Collaboration also decided to continue to support two of the 2nd-period incubation research centers, one of the 2nd-period Centers of Excellence, and three of the 4th-period incubation research centers. In

addition, to help bases grow, the University performs interim evaluations on four of the 4th-period Centers of Excellence. Consequently, 13 Centers of Excellence and 13 incubation research centers are currently active.

In addition, to build a researcher network, create new research areas, and foster next-generation research leaders, the Hiroshima University-RIKEN Joint Research Center, a collaborative research center established in AY 2019, established a matching fund titled the “RIKEN-Hiroshima University Science and Technology Hub Joint Research Program” and conducted open recruitment.

ii) Expanding international research networks [Project No. 21]

To expand international research networks and thereby promote international joint research and the co-authorship of scientific papers with international scholars, in AY 2020, the University concluded the following number of comprehensive agreements with international universities: 1) 10 interuniversity agreements (total: 380) and 2) 4 inter-school/office agreements (total: 401).

As an effort to expand the University’s international research network, the Hiroshima University Network for Education and Research on Peace and Sustainability (NERPS) conducted international recruitment of cross-appointment faculty members with research grants and hired four researchers. The University will form joint research teams, comprising the recruited researchers and the University’s faculty members and students, to conduct pilot research and formulate project proposals. In AY 2020, the University created an opportunity for its researchers to interact with one another by holding a NERPS Webinar Series, in which each of the four researchers presented their own research plans.

In addition, for seamless and speedy research collaboration with related organizations in Japan and overseas, the University established a collaborative research base, named the International Affectome (Emotion) Research Center.

iii) Developing a good research environment [Project No. 22]

Refer to Highly strategic and ambitious objectives and plans on p. 33.

iv) Implementing strategic priority placement using research activity evaluation methods [Project No. 23]

Refer to Highly strategic and ambitious objectives and plans on pp. 33 and 34.

② **Helping researchers and maximizing the use of research resources**

i) Strengthening the academic information infrastructure [Project No. 24]

While expenses for electronic journals and databases are increasing year by year due to price increases by publishers, introduction of the consumption tax, and fluctuations in exchange rates, the University was able to maintain the plan for the third medium-term target period (AY 2016–AY 2021).

Cases of electronic-journal-database use increased by 11% compared to the previous year (1,985,829 [AY 2019] → 2,210,648 [AY 2020]).

ii) Strengthening the University’s researcher support system [Project No. 25]

To strengthen the University’s research support system, in AY 2013, the University began developing a university-wide URA organization, comprising senior URAs (University Research Administrators) who are in charge of research promotion at the headquarters, URAs, and associate URAs who are in charge of research support at schools/offices. Because senior URAs and URAs need to be able to support large-scale projects, the University actively assigned specialized human resources who have an academic career background and are therefore able to understand research. The University put effort into fostering both specialized and clerical human resources so that URAs with various abilities could collaborate and fuse with one another to optimize the University’s research capability strengthening support organization.

In AY 2020, the University newly hired two URAs with a science and engineering background and one URA with a biology/life background, and two URAs were assigned to each graduate school. The URAs attended the research promotion committee meetings of the graduate school they are affiliated with and promoted efforts to strengthen research capabilities, gathered and analyzed information, and provided advice.

In AY 2014, the Writing Center began offering a partial subsidy for English proofreading expenses, and in AY 2020, the Center provided 573 subsidies worth 11,174,855 yen. In AY 2020, a new foreign faculty member was hired, bringing the total number of full-time faculty members to three and one foreign fellow, and support for improving various academic writing skills was provided through English thesis writing consultation, seminars and workshops for English thesis writing, and English thesis writing retreats.

iii) University-wide optimization of the University’s research equipment sharing system [Project No. 26]

To centrally manage and effectively use the University’s research equipment by reorganizing the Natural Science Center for Basic Research and Development, the University confirmed the users and operating status of its shared research equipment, selected 71 university-wide shared pieces of equipment, and made them also available to people outside the University by registering them with the University Collaborative Research Equipment Network System. In addition, to ensure sustainable operation, the University reviewed usage fees by clarifying all costs incurred between installation and disposal, including equipment acquisition, retention and repair, consumables, and maintenance.

(3) **Efforts to strengthen the management skills needed to promote industry-academia-government collaboration**

i) Preventing risks associated with conflicts of interest and technology leakage that may occur in promoting industry-academia-government collaboration, and strengthening the system in ways that will allow effective and efficient management to fulfill the University’s accountability to the public [Project No. 28]

On April 1, a Vice President (Academia-Government-Industry Collaboration) specializing in industry-academia collaboration was assigned to the Office of Research and Academia-Government-Community Collaboration, and the Department of Industry-academia Collaboration Promotion was established under the Office. The Vice-President (Academia-

Government-Industry Collaboration) concurrently serves as the Director of the Open Innovation Platform (OI Business Division), which is an organization under the direct control of the President, and has therefore strengthened collaboration between the Office of Research and Academia-Government-Community Collaboration and the OI Business Division. In addition, since the importance of legal checks for joint research contracts, intellectual property management, international exchange agreements, and security export control has increased due to the recent internationalization of universities, to strengthen its legal system, the University developed a system for establishing a specialized department and securing specialized personnel. On April 1, 2021, the University established the Academia-Government-Industry Collaboration Legal Division in the Office of Research and Academia-Government-Community Collaboration.

- ii) Establishing a system for setting quantitative targets for each activity, checking the implementation status of each activity, and sharing information throughout the organization [Project No. 28]

The University holds meetings of the following committees twice a month online: 1) the Strategy and Planning Committee, which is chaired by the Executive Vice President (Research and Academia-Government-Community Collaboration) with the aim of sharing information on seeds and needs, planning and formulating strategies, and forming and confirming the progress of projects; and 2) the Department Head and Division Head Committee, whose purpose is to share information within the Office of Research and Academia-Government-Community Collaboration. The University decided to allow any member of the Office of Research and Academia-Government-Community Collaboration to sit in on meetings and also access materials and minutes. In addition, the University has established a system to share necessary information in a timely manner by holding meetings of each department and using various tools, such as Microsoft Teams and Slack. In addition, the above-mentioned committees periodically confirm the implementation status of the 3rd mid-term objectives and mid-term plan. This academic year, the Vice-President (Academia-Government-Industry Collaboration) has set new quantitative targets for each activity, and the entire Office of Research and Academia-Government-Community Collaboration will promote various initiatives to achieve the targets.

#### (4) Collaborating with communities and helping communities

- i) Efforts to increase various performance values for industry-academia-government regional collaboration activities [Project No. 28]

To further accelerate inter-organizational industry-academia collaboration, the University expanded its number of comprehensive collaboration agreements and joint research courses. The University also actively puts effort into maximizing its comprehensive collaboration agreements as follows: 1) with the Japan External Trade Organization (JETRO), with which the University concluded a comprehensive collaborative agreement on November 20, the University agreed to set up an innovation desk on campus to support the matching of University seeds with corporate needs; and 2) with the National Institute of Special Needs Education (hereinafter, "NISE"), with which the University concluded a comprehensive cooperation agreement on March 19, the University agreed to establish the first regional

office of NISE on campus to jointly develop and promote special needs education and related fields. In January, the University also concluded comprehensive cooperation agreements with Higashi-Hiroshima City, Sumitomo Corporation, and Wakayama Medical University, bringing the total number of agreements to four in AY 2020. By securing a long-term research base for industry-academia collaboration on campus and promoting large-scale joint research, the University puts effort into further revitalizing research activities, implementing research results, and creating innovations.

- Number of joint research courses and joint research departments  
At the end of the 2nd medium-term target period (end of AY 2015): 2 courses  
End of AY 2020: 31 courses (including those offered at the University's co-creation research center)  
Increase rate: 1,450%

- Number of comprehensive agreements concluded  
At the end of the second medium-term target period (AY 2015): 59  
End of AY 2020: 90  
Increase rate: 53%

In addition, income from the licensing of intellectual property (domestic and foreign) also increased from 24 million yen at the end of the 2nd medium-term target period (AY 2015) to 64 million yen in AY 2020 (increase rate: 167%).

- ii) Expansion of systematic large-scale joint research [Project No. 28]

To continuously organize and intensively manage large-scale joint research projects with companies, a group of specialized personnel, including researchers in the OI Business Division and the industry-academia collaboration coordinators at the Office of Research and Academia-Government-Community Collaboration, work together to select the University's seeds that are promising for social implementation (about 100 seeds), conduct hearings, organize joint research projects, form consortiums, apply for various projects, and support the creation of ventures.

Using this analysis of seeds, the University analyzed the medium- and long-term development plans of each major company and prepared customized account plans (seeds lists) to actively make proposals to companies (proposals have already been made to 20 companies). In addition, to build strong partnerships with companies, the University is promoting the development of industry-academia collaboration routes by using its connections with top company executives, and the number of partnerships with new companies and new industry-academia collaboration routes has reached 43. Regarding outreach activities, the OI Business Division has set up its own website and Twitter account to send out information to companies on promising seeds and forms of industry-academia collaboration, and its website had 500–600 visitors per month while its Twitter account had about 1,400 visitors in March 2021. In addition, the University is actively working with external platforms to publicize its seeds (e.g., participating in Answer Gate, a seeds search site for companies, and in the Industry-Academia Collaboration Platform).



To support the establishment of a new research center, the University gathered its seeds, and on February 1, 2021, it established a project research center named the “Carbon Recycling and Implementation Research Center.” The University collaborates with the URA department in providing support on such matters as collaboration with local governments, application for external funds, and outreach activities.

Consequently, the total amount of joint research contracts has already surpassed 30 million yen, and the total amount of joint research contracts under negotiation for the next academic year has surpassed 140 million yen. The University will continue to organize large-scale joint research projects in the next academic year as well.

In addition to organizing joint research projects, to help obtain a wide range of external funds, the University also provides support for applying for other external funds and acquiring donations (including 10 million yen for the development of a novel coronavirus vaccine).

The University also reviewed the system that serves as the basis for industry-academia collaboration, and it decided to change the calculation method of indirect expenses for joint research in AY 2021 from an hourly rate system to a fixed rate system (30%). The University is currently conducting a detailed analysis of various external funds and will continue to put effort into strengthening its industry-academia collaboration system.

iii) Efforts to form and expand a complex innovation promotion infrastructure (research complex) through the fusion of different fields [Project No. 28]

To create interdisciplinary fields for the formation of a research complex, the University held an online exchange event, titled the “Higashi-Hiroshima Research Papers by 100 People” (August 24 to August 28), and received more than 130 comments, including questions about research and comments introducing internal and external initiatives. One participant wrote: “It’s darkest under the lamp post. Holding this kind of meeting is the strength of this project.” This project has led to the approval of the “Common Project,” a collaborative research project with Higashi-Hiroshima City, and to the joint application and adoption of an external cross-organizational project (JST/AY 2020 COI-NEXT). In addition, as a related event, a dialogue event titled “Research Socializing Talk” was held under the theme of interdisciplinary fusion on March 29 to develop good practices in interdisciplinary fusion. Furthermore, to introduce good examples of startup ecosystems overseas and create an opportunity for the formation of a startup ecosystem in Hiroshima, an online startup seminar, titled “How to Create Global Innovation from Hiroshima,” was held on December 17, welcoming more than 50 participants. The University will continue creating new research areas and form the foundation of the research complex.

iv) Efforts to create University-launched new businesses and foster innovative human resources [Project No. 28]

To strengthen the University’s support for entrepreneurship, on April 28, the University concluded an agreement with Hiroshima Venture Capital Co., Ltd. on actively promoting efforts and investment to create University-launched ventures. In addition, with the aim of providing smooth and appropriate support for University-launched ventures, the University developed a co-working space as a shared support space for entrepreneurial activities and began recruiting entrepreneurs to use it.

The University also actively supports entrepreneurial activities by students, and on April 1, it established a Startup Support Division under the Department of Academia-Government-

Industry Collaboration. The University supports and collaborates with student-led activity organizations (Entrepreneurship Club: 1st Penguin Club), and at the 2020 Campus Venture Grand Prix Chugoku, its students won the top prize.

As a result of this ongoing support, the number of venture companies set up this academic year was seven, bringing the total to 74 as of the end of March.

In addition, as an opportunity for local innovators to relearn engineering, from basic technology and new technology trends to practical application, the University held 10 AY 2020 Brush-up Seminars (formerly Innovation Training Program) online from February 12 to March 24, welcoming 707 participants.

Furthermore, the University held its 7th Hiroshima Entrepreneurship Program online from February 15 to February 20, welcoming nine undergraduate and graduate students from across the nation. This academic year’s event was held in conjunction with the medical program of the consortium for the “Innovation x Diversity x Entrepreneurship Education Alliance” program of the Exploration and Development of Global Entrepreneurship for NEXT generation (EDGE-NEXT) project, of which Kyushu University is the lead institution. With cooperation from venture companies in Tokyo, doctors, researchers, and citizens of Higashi-Hiroshima City, the University planned a proposal to address the issue of medical costs.

In addition, the University was looking forward to accepting trainees through JICA’s Japan-Mexico Strategic Global Partnership Program to offer a training course on “Venture Creation and Innovation Ecosystem Development,” but the plan had to be postponed due to the novel coronavirus.

v) Center of Innovation (COI) [Project No. 28]

As part of the Japan Science and Technology Agency’s Center of Innovation Program, of which the University is one of the core participants, the University’s Nurturing Mental Wealth–Center of KANSEI Innovation continued its research into the mechanism behind the interaction between our senses when we suddenly realize things, and to find ways to use its previous research findings for the public good, it also pursued research deeper into the fundamental mechanisms of perception. In addition, the Center of KANSEI Innovation developed a prototype of a new perception sensing device by applying its basic research findings to the underlying technology of such sensing devices. Subsequently, it collaborated with multiple partner companies in conducting empirical research to find practical applications for the new device.

In December, to share research findings with partner companies and thereby strengthen collaborative partnerships, the Hiroshima University COI Core Base, National Institute for Physiological Sciences COI-S Base, and Optical Technology Development COI-S Base held a three-party COI-base joint progress briefing, which was attended by 92 registered participants. In addition, to link the results of the COI not only to participating organizations but also to the wider community, the University has packaged the COI research results, such as visualization tools for sensibility and perception and sensing devices, as an integrated analysis package and has been working on the creation of a collection of application examples to support their application to businesses, such as manufacturers and service providers. Among the tools in the integrated analysis package, three tools with a high level of sensitivity were exhibited at Innovation Japan 2020, held online from September 28 to

November 30, along with an introduction to the activities of the entire Center of KANSEI Innovation (number of visitors during the exhibition: 1,496).

vi) Efforts of the Program on the Open Innovation Platform with Enterprises, Research Institute and Academia (OPERA) [Project No. 28]

To promote full-scale inter-organizational industry-academia joint research, the University closely collaborated with industries in building and operating a Genome Editing Industry-Academia Co-Creation Consortium, currently comprising 34 organizations (10 institutions, including universities, and 24 private companies). The result of the JST mid-term evaluation was 5 out of 5 (the highest level), and the result of the final evaluation was A for overall evaluation and A (excellent) for all individual evaluations.

In addition, the University promoted efforts to make its projects self-sustaining after the end of JST's support by obtaining external funding for some of its projects (1. "Development of a Gas-to-Lipids Bioprocess" at NEDO and the Osaki Kamijima Carbon Recycling Research Center; and 2. "Development of an AI-based Genome Editing Database," a Project for the Promotion of Cooperative-domain Data Sharing to Promote Connected Industries and AI System Development).

In addition, on December 15, 2020, the University's proposal for a "Hiroshima-launched Bio×Digital Transformation (Bio DX) Industry-Academia Co-Creation Center for Creating the World's Most Advanced Bio-Economic Community" was adopted as part of the AY 2020 JST COI-NEXT. The University will establish a new center for industry-academia co-creation centered on the Hiroshima University Genome Editing Innovation Center and will develop the OPERA initiative into a COI-NEXT. This program aims to resolve serious social issues and contribute to the achievement of the SDGs by building an innovation ecosystem based on the promotion of bio-economy. To establish this center, a research promotion meeting for the launching of a consortium was held on March 15, and a kick-off symposium was held on March 17, both contributing to the smooth progress of the program.

vii) Efforts made by the Hiroshima Manufacturing Digital Innovation Creation Program [Project No. 28]

To help car and other leading manufacturers in Hiroshima Prefecture further improve their product development and production technology and also refine the University's industry-academia collaboration model, in February 2019, the University set up the Hiroshima University Digital Monozukuri (Manufacturing) Education and Research Center—a new base for promoting the cultivation of digital innovators and the development of creative industry-academia research. To ensure proper management, the Hiroshima University Digital Monozukuri (Manufacturing) Education and Research Center holds monthly progress review meetings with the Steering Committee and also performs progress reviews with program supervisors, the Director of the Center, and project leaders. Regarding social and corporate collaboration activities, the University has established three consortiums by establishing a memorandum of understanding on the co-creation consortiums, guidelines for the handling of intellectual property and results relating to the promotion of the program, and rules for the handling of confidential information relating to the promotion of the program.

The number of companies participating in the three consortiums increased from 40 in the previous year to 55 this academic year (with participants increasing from 361 to 549). The breakdown in the number of companies affiliated with each consortium is as follows: 1) the

Materials Model-based Research consortium increased from 11 in the previous year to 18 this academic year, 2) the Data-driven Smart Systems consortium increased from 15 in the previous year to 18 this academic year, and 3) the Smart Inspection and Monitoring consortium increased from 14 in the previous year to 19 this academic year.

Regarding human resource development activities, each consortium regularly holds general training sessions, theme-based educational training sessions, and study sessions. In the previous year, 204 sessions were held, whereas 460 sessions were held this year, and the number of participants increased from 2,857 to 5,601 (as of March 31).

On January 21, 2021, a special lecture was delivered by Executive Director Kazuhiko Ishimura of the National Institute of Advanced Industrial Science and Technology (AIST) as a briefing session on the activities of the Center, and reports on the activities of the Center Director and core researchers were presented online (participants: 280).

In addition, with an eye on the social implementation of the university's technologies, the following joint research courses had previously been established at the Hiroshima University Digital Monozukuri (Manufacturing) Education and Research Center and continued to be operated this year: 1) Joint Research Course on Innovative Freezer System Design Techniques and 2) Joint Research Course on Data-driven Smart Systems. Furthermore, the number of joint research projects increased steadily from two in the previous year to 14 this academic year, and three new academic advising projects were accepted.

Regarding intellectual property activities, the University received approval for 10 patent applications and three cases of know-how provision. Regarding research activities, the project-related faculty members have published 51 conference papers, made 113 conference presentations, and given 20 lectures (as of March 31).

The construction design of the testbeds (Materials MBR building and Data-driven building) was completed as a new base for social implementation of the University's technology.

viii) Efforts made by the Education and Research Center for Artificial Intelligence and Data Innovation [Project No. 28]

On October 1, the University established the AI and Data Innovation Education and Research Center on its Higashi Senda Campus. On November 9, a symposium was held to commemorate the establishment of the Center, and keynote speeches were delivered and case studies were presented to representatives of educational institutions, companies, and government agencies.

In addition to conducting advanced research, including high-dimensional data analysis, machine learning algorithms, and high-performance computing, the Center provides recurrent education to working adults in the prefecture, including company workers and government agency workers. From November to February, three recurrent education courses for working adults were offered online to cultivate human resources able to use AI (artificial intelligence), DS (data science), and ICT (information technology), welcoming 124 participants. In addition, on March 11, the 1st AI and Data Innovation Seminar was held online, welcoming 91 participants.

From here on, the University will put effort into helping regional development by developing the Center into a domestic base for AI and data science education and research.

ix) Efforts made by the Resilience Research Center [Project No. 28]



The Resilience Research Center, established in September 2018, is a base for researchers to collaborate and conduct continuing organizational activities with the aim of promoting research into disaster prevention and mitigation and making more practical contributions to the world in disaster mitigation. To fulfill its role as an institution with roots deep in the community, the University collaborates with municipalities and other external organizations in conducting disaster prevention and mitigation research, using findings for the public good, and cultivating personnel.

To form a world-class research base for studying synergistic heavy rain disasters, which have become a major issue due to global climate change, in AY 2019, the University began collecting research funds, using Hiroshima University Cloud Funding, which it still continues to do, with the aim of implementing its “Master Plan for Creating a Gagara Mountain Empirical Research Field” as a large-scale empirical research field on Gagara Mountain, located on the University’s own property. This academic year, as part of its master plan, the University carried out a Gagara Mountain Demonstration Experiment Project to predict the occurrence of debris flows, constructed observation boreholes and installed measurement equipment at the top of Gagara Mountain, and began measuring groundwater level, water pressure, and water temperature.

In addition, at the beginning of the academic year, the University conducted research seeds/needs matching (related to disaster prevention) with the Chugoku Regional Development Bureau of the Ministry of Land, Infrastructure, Transport and Tourism and adopted one new research theme, bringing the total of research projects commissioned to five, when added with those carried over from the previous academic year.

On June 15, 2020, the AY 2020 1st Meeting of Local Authorities in Collaboration with the Resilience Research Center was held as an online conference, bringing together 50 people in charge of crisis management from Hiroshima Prefecture, 23 cities and towns in the prefecture, and Iwakuni City in Yamaguchi Prefecture. Participants exchanged opinions on issues relating to evacuation while employing measures against the novel coronavirus infection. The online conference helped local-government crisis-management staff improve their knowledge and share information on examples of initiatives being implemented in each of their municipalities.

On October 3, to prevent the spread of the novel coronavirus infection, for the first time, the BOSAI Kokutai 2020 was held online (organized by the Cabinet Office, the Disaster Prevention Promotion Council, and the National Council for the Promotion of Disaster Reduction). The University participated in the event and held a discussion under the theme “Protecting Our Lives from Synergistic Torrential Rain Disasters: What to Do in the Next Step in the Face of the Onslaught of Nature. What should we do as our next step?” and researchers, government representatives, and local residents brought their perspectives to the discussion on future disaster prevention measures. Viewers totaled 344 from all over Japan, and the event served as an opportunity to review current disaster prevention and mitigation measures. The University set up a presentation booth, where it introduced its Center’s latest research, using videos, and shared information on its research results. The Director of the Center played an important role in both the opening and closing sessions of the conference by participating in the former as one of the four speakers in a high-level discussion, which helped kick off the conference, and giving in the latter the closing remarks as one of the organizers of the conference.

On October 5, the University began providing support for the Hiroshima Prefectural Emergency Management Agency’s project to produce VR/AR and other visualization materials on torrential rain disasters. Learning that Hiroshima Prefecture would be producing educational materials using visualization technology such as VR based on a study of the results of the “Survey on Evacuation Behavior of Prefectural Citizens in Relation to the 2018 Japan Floods,” the University provided support to foster appropriate knowledge of torrential rain disasters and awareness of evacuation behavior among prefectural residents.

On December 16, an open discussion was held to commemorate the second anniversary of the establishment of the Center. This event was held as part of the “National University Festival 2020,” organized by the Japan Association of National Universities. Community representatives, including researchers, government officials, and disaster prevention leaders, discussed issues in an online meeting format, which was viewed online by about 70 general participants. In addition, a report on the discussion was prepared and made widely available. On January 25, the University held an opinion exchange meeting with the Chugoku Regional Development Bureau of the Ministry of Land, Infrastructure, Transport and Tourism, which was attended by the Director General of the Bureau along with nine other Bureau representatives and 12 researchers from the University. This meeting was held based on the “Memorandum of Understanding on Disaster Prevention and Mitigation Measures,” concluded on January 10, 2019 in response to the 2018 Japan floods. At the meeting, the University presented the current results of its research projects and contract research and exchanged opinions on future research issues and policies.

Regarding information dissemination, an English version of the Center’s research introduction video was produced and released in January.

x) Efforts to strengthen collaboration with the region [Project No. 28]

○ Assigning instructors and students to help resolve local issues

The main purpose of the Bridging Community Development Project, which started in AY 2019, is to work on the revitalization of local communities and the local economy by forming teams of local residents, students, and faculty members. However, this year the University had to give up accepting new applications because students’ extracurricular activities were severely restricted due to the Action Guidelines for the Prevention of the Spread of the Novel Coronavirus. However, after the declaration of a state of emergency was lifted in May, there were many requests from groups that had been formed in AY 2019 to continue their activities voluntarily. Therefore, the University issued a call for additional support for projects adopted in AY 2019 and decided to support six projects that applied. An opinion exchange meeting was held on March 26.

In addition, the Higashi-Hiroshima City Policy Challenges Joint Research Department, which was jointly established with Higashi-Hiroshima City in AY 2018, conducted the following types of joint research: 1) city-proposal type (needs type), which works on policy issues in Higashi-Hiroshima City and 2) university-proposal type (seeds type), which works on industrial issues in Higashi-Hiroshima City by selecting themes from the public. In AY 2020, three projects of the city-proposal type (needs type) were conducted (of which Hiroshima University conducted two), and seven projects of the university-proposal type (seeds type) were conducted (of which Hiroshima University conducted six).

- Efforts to develop a campus for the formation of an International Research Base of Higashi-Hiroshima City  
In October, construction work for building an International Exchange Base began on Higashi-Hiroshima Campus (total floor space: about 4,000 m<sup>2</sup>; project cost: about 1.5 billion yen; open: fall of 2021). This facility has multiple functions, including the creation of innovation, exchange and circulation of knowledge with a variety of people from inside and outside Japan, and the provision of safe and comfortable living spaces for top overseas researchers and talented international students, and the facility aims to serve as a center of knowledge for the formation of an International Research Base of Higashi-Hiroshima City.  
 To steadily implement this objective, in November, the University formulated a plan for managing and operating the international exchange base facility.

- Promoting regional revitalization—the University’s role as the region’s key educational institution

Despite the expiration of the Ministry of Education, Culture, Sports, Science and Technology’s Center of Community (COC) project, to ensure that practices developed through it continue to be followed, the University developed and implemented the following programs designed to cultivate Hiroshima Peace Initiative Leaders—people able to help build pluralistic communities: 1) a Peace Studies course titled “Introduction to Hiroshima Peace Initiative Leader Program” and 2) a Specific Program titled “Hiroshima Peace Initiative Leader Program.” After first being offered in AY 2017, the Peace Studies course “Introduction to Hiroshima Peace Initiative Leader Program” continued to be offered, and in AY 2020, it welcomed 60 students. The Specific Program “Hiroshima Peace Initiative Leader Program” was first offered in AY 2018, and in AY 2020, it welcomed 21 students from six schools. Three voluntary study sessions were held for students registered with specific programs, welcoming 20 participants, who received lectures from and exchanged opinions with practitioners of community revitalization and community-based volunteering.

Despite the expiration of the Ministry of Education, Culture, Sports, Science and Technology’s COC project, the University continues to provide undergraduate students with community-oriented education with help from local communities. The School of Applied Biological Science provides community-oriented liberal arts seminars and other community-oriented educational subjects to not only those affiliated with the School but also others affiliated with different schools. In the AY 2020, the liberal arts seminars’ experiential learning program had to be cancelled due to the need to prevent the spread of the novel coronavirus infection. However, some students were given the opportunity to learn about the socioeconomic situation of the region through a video, which was followed by an exercise in which the students made proposals for regional revitalization. Due to the new coronavirus infection, the School of Education’s Special Support Education Supporter Dispatch Project had to reduce its number of visits compared to that of previous years. Due to the same reason, the following programs could not be implemented: 1) the liberal arts seminars’ experiential learning program for helping the physically and mentally challenged and 2) the University-based volunteer-work-experience learning program for students in special-needs classes. However, the University plans to implement them next year. As a new initiative, students from Hiroshima University Junior High School, Shinonome, presented their career study online, and the University’s students and faculty

members subsequently asked questions. The results of this activity will be announced in the bulletin of Hiroshima University Junior High School, Shinonome.

- Hiroshima Biodesign program initiatives

The Hiroshima Biodesign program aims to develop innovative human resources to create a regional medical device industry with the Biodesign Joint Research Course, launched by the University jointly with the prefectural government in AY 2018, at the core. In addition, the program aims to do so by processing the following steps: 1) search for potential needs based on observation of the medical field using design thinking, 2) concept creation, and 3) commercialization. This academic year, the program was operated under some restrictions due to the novel coronavirus.

The main long-term human resource development program, called the Fellowship Course, was held over 11 months from May to March with the participation of a coordinator (pharmacist) from an industrial support organization and an Indian dentist. Consequently, the University inherited the inventions made by the fellows and others at the University Invention Examination Meeting held on March 15, 2021.

The Graduate School of Biomedical and Health Sciences offered the following courses as short-term educational programs: 1) Introduction to Biodesign I (delivered on demand), 2) Introduction to Biodesign II (delivered on demand), and 3) Biodesign Exercise I (an intensive face-to-face workshop). The programs were attended by 21 working adults from five companies as auditors and 101 graduate students.

To make the programs widely known so that more people will participate, for its first time, the University made one lecture and two drills available to the public online, welcoming 62 participants from companies and other organizations.

Regarding direct collaboration with companies, with its knowledge of biodesign, the University continually provided academic guidance and advice to one manufacturer in the prefecture about once a week to help the manufacturer with its internal product development process.

- Efforts made by the Town & Gown Office preparation room

By observing cities where universities are located in Western countries, the University established a Town & Gown Office preparation room in collaboration with Higashi-Hiroshima City with the following aims: 1) creating a city where the town (the city) and gown (the students and teachers) work together and 2) resolving regional issues to achieve the SDGs.

Main activities of this academic year

- To help international students under the influence of the novel coronavirus employ economic measures and apply for the fixed-amount benefit, the University asked international students (totaling 10) to translate guidance documents.
- The University provided financial support to international students who had to stay at hotels after returning to Japan from their home countries (about 200 students).
- The University helped with matching between researcher seeds and the Higashi-Hiroshima City Office department to conduct community-oriented education and research (18 cases).
- On November 19, the University held a TGO seminar, titled “HAXTokyo—developing research seeds and ideas into businesses” (welcoming 21 participants).

- On November 27, the University was selected as an entity to undertake a project to be covered by the Ministry of Education, Culture, Sports, Science and Technology's AY 2020 Subsidy for Strengthening National University Reform (National University Management Reform Promotion Project).
- On January 26, the University concluded a comprehensive cooperation agreement with Higashi-Hiroshima City and Sumitomo Corporation.
- On January 26, the University issued a Carbon Neutral x Smart Campus 5.0 Declaration.
- On February 14, at the Higashi-Saijo Regional Center (Higashi-Hiroshima City), the University held a lecture for local residents, titled "Achieving SDGs with Hiroshima University" (participants: about 50).
- On February 15, the University and Higashi-Hiroshima City jointly formulated a Local 5G Introduction Plan.

## (5) Globalization

- i) Using and promoting the Japanese version of the BEVI test (BEVI-j; a cross-cultural adaptation aptitude test) [Project No. 30]  
Refer to Highly strategic and ambitious objectives and plans on p. 35.
- ii) Promoting short-term study-abroad START programs [Project No. 30]  
Refer to Highly strategic and ambitious objectives and plans on p. 35.
- iii) Restructuring and expanding Morito Institute of Global Higher Education [Project No. 30]  
Refer to Highly strategic and ambitious objectives and plans on pp. 35 and 36.
- iv) Promoting special Japanese language and culture training programs to attract international students  
[Project No. 30]  
Refer to Highly strategic and ambitious objectives and plans on p. 36.
- v) Improving and expanding overseas bases [Project No. 30]  
Refer to Highly strategic and ambitious objectives and plans on p. 36.
- vi) Concluding interuniversity exchange agreements [Project No. 30]  
Refer to Highly strategic and ambitious objectives and plans on p. 36.
- vii) On-campus establishment of an overseas campus for Arizona State University (USA)  
Refer to Highly strategic and ambitious objectives and plans on p. 36.
- viii) Promoting medium- and long-term student exchange programs [Project No. 30]  
Refer to Highly strategic and ambitious objectives and plans on pp. 36 and 37.

## (6) The Hospital

### ① Efforts to improve education and research functions

- i) Promoting international exchange with overseas organizations [Project No. 36]
  - When Yokozuna Hakuho, a sumo wrestler, who learned about the exchange between the National Cancer Center of Mongolia (which signed an inter-departmental exchange

agreement on March 28, 2018) and Hiroshima University, which provided the Center with support for radiological medicine, attended the exchange agreement signing ceremony, to encourage patients, he donated a championship plaque he won at a sumo wrestling tournament held in March 2013, and the plaque was subsequently displayed in the University's clinic building in July. The Department of Radiology's efforts to accept international students from Mongolia and exchange human resources, which began in 2012, were evaluated highly.

- Due to the influence of the novel coronavirus, this academic year, the University had to suspend the mutual exchange of staff with its international partner schools. However, the University made preparations for exchange next year and after, including dispatching staff to the health science symposium scheduled to be held at the Taichung Veterans General Hospital (which concluded a departmental exchange agreement on March 15, 2015).
- ii) Establishment of an Endoscopy Training Center [Project No. 35]  
The Endoscopy Training Center was established in May to improve the endoscope operation skills of undergraduate students, medical interns, and young doctors. To create an environment in which experienced specialists can instruct students and medical interns, the University equipped the Center with a variety of equipment for training, from models that can be handled by beginner students to the latest devices, including electronic endoscope systems. Having previously held nationwide live seminars on gastrointestinal endoscopy and hands-on seminars on gastrointestinal endoscopy treatment, the Department of Endoscopy collaborated with Hiroshima Prefecture, which aims to improve the cancer screening uptake rate, in strengthening the education and training of endoscopists to develop a system that can contribute to improving the level of endoscopic care in the region.
  - iii) Fostering futuristic global medical personnel [Project No. 37]  
To develop future global medical professionals who can seamlessly apply next-generation medical care to local medical care, the Center for the Education of Futuristic Global Medical Professionals held eight open seminars for the University Hospital's medical interns, welcoming 142 participants. Doctors from Hiroshima University Hospital gave lectures based on their own experiences of studying abroad and giving presentations at academic conferences, creating an opportunity to integrate advanced medical care with community medicine.
  - iv) Improving post-graduate clinical training programs [Project No. 37]  
The Hospital improved its training programs by taking the following actions: 1) sharing information on the efforts of departments that are providing advanced and distinctive guidance at the WG for Improvement of Post-graduate Clinical Training and the Post-graduate Clinical Training Management Committee and 2) holding discussions to implement measures to improve training programs being implemented in the University Hospital's departments based on requests from medical interns.
  - v) Cultivating human resources able to provide radiological emergency response [Project No. 37]  
To cultivate human resources able to provide radiological emergency response and thereby fulfill its role as an Advanced Radiation Emergency Medical Support Center and Nuclear

Emergency Medical Support Center, the Hospital provided healthcare workers, including doctors, nurses, and radiological technologists, with training and specialized seminars in Japan. Due to the need to prevent the spread of the novel coronavirus, the Hospital switched to providing training online and limited the number of participants for on-site training to the minimum.

vi) Promoting medical research [Project No. 38]

- In July, the University Hospital's Center for Promotion of Comprehensive Medical Research was reorganized and renamed the Clinical Research Center in Hiroshima. At the same time, to strengthen the collaboration between the Clinical Research Center in Hiroshima and the Translational Research Center, in July, the Hospital reorganized the latter center, which is a Joint Education and Research Facilities on Campus, and thereby developed a support system to promote medical research.
- To specifically promote specified clinical research conducted at Hiroshima University by reducing the burden on the University's principal investigator of specific clinical research conducted at the University Hospital, the Hospital continually implemented a reduction measure whereby it pays an amount equivalent to the ethics review fee, and it reviewed 6 new applications (an increase by 3 from the previous academic year).

vii) Supporting Paralympic athletes [Project No. 38]

On November 8, 2011, the Hospital held a symposium, titled "ALL HIROSHIMA SPORTS SUMMIT—Physical Fitness to Protect Athletes' Bodies," led by the Sports Medical Center, where opinions were exchanged from the viewpoint of many different professions on how to protect one's body from not only sports injuries and disorders but also internal diseases. In addition, based on the Agreement on Collaboration and Cooperation in the Field of Sports for the Disabled, concluded in October 2016, on November 23, Hiroshima University, the Hiroshima Para Sports Association, the NPO STAND, and Hiroshima Prefecture collaborated with AEON Co., Ltd. in holding a hands-on para-sports event at AEON Mall Gion, and through exchange events, the University built momentum toward the creation of a community that respects diversity.

**② Efforts to provide high-quality medical care**

i) Strengthening support for foreign patients by establishing a Division of International Medical Support [Project No. 35]

To enhance medical services for the increasing number of foreign patients and to reduce the burden on the Hospital's staff, in May, the Hospital established the Division of International Medical Support comprising two doctors, one nurse, and one administrative staff member, creating a system to ensure that foreign patients can receive medical care safely and smoothly.

ii) Japan International Hospitals (JIH) recommendation [Project No. 35]

Medical Excellence Japan (MEJ), a core organization for promoting international medical development with support from the Ministry of Economy, Trade and Industry, examined whether the Hospital met the standards to be awarded Japan International Hospitals (JIH) certification, and on January 19, the Hospital received recommendation. The recommendation enabled the Hospital not only to demonstrate that it has a system in place to provide state-of-the-art medical services both domestically and internationally but also raise the level of

awareness of the Hospital's staff regarding the acceptance of foreigners and the improvement of services.

iii) Establishing a Palliative Care Center and supporting it with multiple professionals [Project No. 35]

In April, the Palliative Care Division of the Cancer Treatment Center was reorganized as the Palliative Care Center, comprising doctors, nurses, pharmacists, physical and occupational therapists, nutritionists, dental hygienists, and other professionals. Because the need to deal with patients' various distresses from earlier stages increases year by year, the Center ensures medical care in accordance with patients' requests, including the treatment of non-cancer diseases as well. The Center also established a system to provide seamless palliative care in collaboration with palliative care wards, clinics that provide home palliative care, and insurance pharmacies in the prefecture.

iv) The Epilepsy Center begins to provide online medical treatment [Project Nos. 35, 36]

While epilepsy is known as a difficult disease to diagnose in its early stages, there are few specialists and the distribution of specialists in different regions is uneven. Therefore, in June, the Hospital introduced a system for providing online medical care and online second opinions in the field of epilepsy, thereby helping specialists at the University Hospital, which has been designated as a base hospital for epilepsy treatment by Hiroshima Prefecture, develop a medical treatment system to deal with rare diseases in collaboration with local family doctors.

v) Certification as a WAO Center of Excellence [Project No. 36]

In recognition of its facilities and human resources being sufficient for carrying out research, training, and education aimed at the academic development of allergy, asthma, and clinical immunology, on November 12, the Allergy Center at Hiroshima University Hospital, which is a base hospital for allergic diseases, was certified by the World Allergy Organization (WAO) as the third WAO Center of Excellence in Japan.

vi) First WATCHMAN surgery performed in Hiroshima Prefecture [Project No. 36]

In September, for the first time in Hiroshima Prefecture, a multi-departmental/multi-professional treatment team, comprising cardiologists, cardiovascular surgeons, neurologists, anesthesiologists, and emergency intensivists performed two surgeries using a left-atrial-appendage closure device (WATCHMAN) on patients with atrial fibrillation. WATCHMAN closes off the left atrial appendage, where thrombus tends to form, by inserting a catheter through the leg, which is placed in the left atrial appendage. The advantages of using WATCHMAN include prevention of cerebral infarction with a single procedure and allowing discontinuation of anticoagulant therapy in patients at high risk of bleeding. Performing the surgery described above reduced patients' physical and economic burden.

**③ Efforts for continuous and stable hospital management**

i) Improving the Hospital's governance system [Project No. 35]

To make appropriate decisions as a hospital, the Hospital reviewed the responsibilities of its deputy hospital directors and assistant hospital directors, and on April 1, it made the following changes: 1) the deputy hospital director "in charge of medical safety management"

and the assistant hospital director “in charge of disasters” were changed to deputy hospital director “in charge of medical safety management and disasters”; 2) the role of the deputy hospital director was changed from being “in charge of medical education, training, and internationalization” to being “in charge of medical education”; 3) the role of the assistant hospital director was changed from being “in charge of medical treatment” to being “in charge of medical treatment and training”; 4) the role of the assistant hospital director was changed from being “in charge of dental infection” to being “in charge of dental safety and infection”; and 5) another assistant hospital director was added and assigned the role of being “in charge of international affairs.” In addition, to strengthen the Hospital’s governance, on July 1, the role of the deputy director was changed from being “in charge of medical education” to being “in charge of medical education and faculty personnel.”

ii) Continually providing long-term medical support for the reconstruction of Fukushima [Project No. 36]

Immediately after the Great East Japan Earthquake and the accident at TEPCO's Fukushima Daiichi Nuclear Power Plant in March 2011, the Hospital dispatched more than 1,300 people, including emergency radiation exposure medical teams and radiation experts, and has been engaged in reconstruction support activities, primarily through medical assistance.

The University has been providing long-term cooperation for the reconstruction of Fukushima. To respond to requests from Fukushima Medical University for medical support to develop a medical system in Fukushima Prefecture, in April, 2016, the University established a Fukushima Medical Support Center at Hiroshima University Hospital. Subsequently, in October 2016, the Center dispatched 19 internal medicine doctors (in three-month shifts) to Fukushima, and in May 2018, it dispatched one emergency intensive care doctor (one doctor per week every month) to Fukushima to provide medical care at the Futaba Medical Center, which was built in the Futaba region to provide 24-hour, 365-day medical care.

iii) Establishing a system for nuclear disaster medicine [Project No. 36]

To establish a system for nuclear disaster medicine in the midst of the novel coronavirus pandemic, the Center for Advanced Radiation Medicine and the Nuclear Disaster Medicine and Comprehensive Support Center used online conferences and also dispatched lecturers and provided advice and guidance at nuclear emergency drills conducted by prefectures where nuclear power plants are located. In addition, to raise people’s awareness of and familiarize them with nuclear emergency medicine, the University held workshops and conducted decontamination drills. In addition, as an organization registered with the International Atomic Energy Agency (IAEA)'s Response and Assistance Network (RANET), the University continually implemented projects to promote collaboration.

iv) Efforts to improve hospital management [Project No. 39]

- By using the University Hospital Management Accounting System (HOMAS2), the Hospital performed a quarterly cost-accounting analysis of its departments, compared the results with those of the same period of the previous year, and conducted factor analyses of profit fluctuations. In addition, the Hospital conducted an analysis of calculations of monthly department medical fees that patients already discharged had incurred and were billed for, based on the Diagnosis Procedure Combination (DPC)/Per-Diem Payment

System (PDPS), subsequently reported the calculations at the Hospital’s management planning meeting, and had its staff members share this information among themselves.

- The Hospital analyzed the following items of each department and calculated the cost of the top five departments by DPC/PDPS, based on patients discharged on DPC/PDPS claims, and also analyzed the revenue structure of outpatients and notified each department: 1) patient composition, 2) management indicators, 3) income and expenditure calculation, 4) average length of hospital stay for DPC/PDPS claims, 5) stage II discharge rate and medical unit price per day, 6) the top five medical groups’ distribution of income and expenditure by DPC/PDPS, 7) departmental usage ratio by expense, and 8) top-10 ranking of quantity and money spent by each department on pharmaceutical materials.
- A review meeting led by the hospital director was held once a month to urgently repair or renew medical equipment. In addition, based on a survey of equipment to be renewed, conducted in AY 2017, various financial resources were used to systematically renew old large medical machinery and equipment.
- The Hospital analyzes its inventory management status of medicines and medical materials, notifies staff which materials are about to expire to promote their use before expiration and thereby prevent the use of expired materials, and notifies relevant departments of the need to have expired materials collected every month and then collects such materials. In addition, the Hospital also surveyed the use of materials, including those that were about to expire, and instructed departments to ask for permission to use materials stocked in other departments if any were available. The Hospital also examined whether it was purchasing the right amount of materials by proposing to departments with materials about to expire to review the fixed amount of materials they were ordering.
- Being a priority medical institution, the Hospital secured four beds for critically ill patients. In addition, it used subsidies related to the novel coronavirus to upgrade its bronchoscope and CT imaging equipment.
- The Hospital reports its assessment of medical fee claims at monthly meetings. In addition, it conducts assessment analyses, and with doctors in each of its departments, the Hospital discusses assessment measures and symptom details for re-examination requests. In addition, the Hospital puts effort into improving the accuracy of its receipts by using software for the following purposes: 1) inspecting receipts (medical fee statements) and 2) supporting coding (assigning the most appropriate codes to the DPC/PDPS for inpatient care).
- Regarding medical materials, the Hospital conducted joint negotiations for items in the field of circulatory organs, selected by the secretariat of the Council of Directors of National University Hospitals.

v) Participation in the Regional Health Care Council of Hiroshima [Project No. 40]

The Hospital’s participation in the Regional Health Care Council of Hiroshima to help ensure effective operation of regional medical systems was as follows: 24 faculty members served as officers (comprising one vice president, four permanent executive directors, 18 executive directors, and one secretary), chairs of 9 of the Council’s 16 committees, and leaders of three of the committees’ eight working groups.



## (7) Attached schools

### ① Efforts to identify and resolve educational issues

i) Efforts of the Ministry of Education, Culture, Sports, Science and Technology's Research and Development school system [Project Nos. 41, 42, 43]

The University's attached schools are involved in the following projects: 1) the Ministry of Education, Culture, Sports, Science and Technology's Education, Research, and Development Project (1 project); 2) the Japan Science and Technology Agency's Super Science High School (SSH) Support Project (1 project); and 3) the World Wide Learning (WWL)

Consortium Development Support Project (1 project). Consequently, students and teachers won the following awards: 1) a silver medal at the 61st International Mathematical Olympiad (IMO); 2) the Special Prize of the Minister of Education, Culture, Sports, Science and Technology at the International Science and Technology Contest; 3) the Special Prize of the Chairman of the Judging Committee at the AY 2020 National Student Research Presentation Session of the Global Science Campus (GSC); 4) the NGK Prize at the JSEC 2020 18th Science and Technology Challenge for High School Students and Technical College Students; and 5) the Instructing Teacher's Award at the 64th Japan Student Science Award. In addition, students were selected as the 23rd High School Peace Ambassadors. In addition, as a central initiative of the WWL, at Hiroshima University Junior and Senior High School, Fukuyama, a discussion program (IDEC\_IGS Collaboration Program) was held with the participation of international students from the Graduate School for International Development and Cooperation (IDEC) of Hiroshima University, students from the Department of Integrated Global Studies (IGS) of the School of Integrated Arts and Sciences, and students who commute to Hiroshima University from six participating schools and graduates of those participating schools.

Program outline: Held five times (10/24, 11/7, 11/14, 12/19, 1/9), 98 participating international students and university students, 203 participating students (including online participants). Under the themes of the environment, education, and peace, the University developed methods of collaboration and exchange, including online methods, where the University's students stimulated discussions held in English by coordinating them and supported high school students.

ii) Dissemination of research results [Project Nos. 41, 42, 43]

When holding educational research conferences, all attached schools had to either hold their conference online or reduce its scale in order to prevent the spread of the novel coronavirus infection. Although attached schools had to take measures that differed from what they experienced over previous years, attached schools actively disseminated their research results in the following ways: 1) attached schools that decided not to open their conference to the public posted their conference materials on their websites and 2) attached schools that canceled their conference publicized their research topics and other information instead.

iii) Efforts made by attached schools to develop global human resources [Project Nos. 41, 42, 43]

- On August 3, 2020, 6th grade students of Hiroshima University Elementary School held an online exchange meeting with members of the Hiroshima and Nagasaki Committee of Atomic Bomb Survivors living in the U.S. and deepened their thoughts on the issues of "peace" and "nuclear weapons." (Elementary school participants: 64)

- At Hiroshima University Junior and Senior High School, Fukuyama, students conducted online collaborative learning sessions with students at Sarawittaya High School in Thailand and Santa Sabina College in Australia. (19 participating students [including 10 from Hiroshima University Junior and Senior High School, Fukuyama])
- At the Hiroshima University Junior and Senior High School, collaborative research programs (joint research projects) were carried out online with students at the following overseas partner schools on the following dates: 1) Cheonan Central High School of Korea (January 29, 2021) and 2) Munsansuok High School of Korea (February 17, 2021). (Participants: 30 from Cheonan Central High School, nine from Munsansuok High School, 47 from the Hiroshima University Junior and Senior High School)
- At the Thailand-Japan Student Science Fair 2020 (TJ-SSF2020) held online from February 24 to 26, 2021, students at the Hiroshima University Junior and Senior High School gave poster presentations. (Participants: seven attached junior and senior high school students)

iv) Using ICT [Project No. 42]

- To respond to the GIGA school concept, the University improved its Internet connection with its attached schools. (Improved connection speed from 100 Mbps to 1 Gbps)
- For students who required long-term hospitalization, Hiroshima University Junior and Senior High School, Fukuyama used Google Classroom to build a system for online class relay and communication, which allowed the presentation of teaching materials and assignments, interactive class relay and communication through a video conferencing system, and sending messages.
- Hiroshima University Junior and Senior High School, Hiroshima University Junior High School, Mihara, and Hiroshima University Junior and Senior High School, Fukuyama began full-scale operation of Google Classroom and G-Suite by issuing accounts to all students and teachers to ensure learning opportunities while their schools had to be closed to prevent the spread of the novel coronavirus infection. Subsequently, Google Classroom and G-Suite were also used in classes after reopening schools and in other educational activities. The University also made necessary preparations to introduce Google Classroom into Hiroshima University Elementary School and Hiroshima University Junior High School, Shinonome.
- At Hiroshima University Elementary School, Hiroshima University Elementary School and Junior High School, Shinonome, and Hiroshima University Elementary School and Junior High School, Mihara, videos of classes were uploaded onto the schools' websites so that students could view them while their schools were closed.
- Hiroshima University Kindergarten and Hiroshima University Kindergarten, Mihara, provided guardians with information through emails, apps, and websites.

### ② Collaboration between attached schools, the University, and its undergraduate schools

i) Developing rubrics that evaluate the qualities and abilities required of global human resources [Project Nos. 41, 42, 43]

By using specific evaluation methods and materials that had been developed through class practice by AY 2019, attached schools instructed students in ways that will help them acquire the qualities and abilities required of global human resources and verified their rubric-based evaluation methods.

- ii) Cooperating with the University's educational and research activities [Project Nos. 41, 42, 43]

Based on the Guidelines for Making Requests between the University and Its Attached Schools for Cooperation on Education and Research, the University's attached schools cooperate with the University in providing education and help with research. In AY 2020, attached schools cooperated in teaching three classes and providing help in conducting nine research projects.

In addition, as schools cooperating with the Professional Development Program for Teachers and School Leaders, attached schools accepted seven graduate students. And, to improve his teaching abilities and skills, one teacher affiliated with an attached school studied at one of the University's graduate schools as an in-service trainee (Professional Development Program for Teachers and School Leaders).

In addition, to provide graduate students with an opportunity to participate in internships, a Fukuyama Attached School Super Global and Government Sponsored Special Joint Internship Program was held at the Hiroshima University Junior and Senior High School, Fukuyama in collaboration with the Government Sponsored International Student Special Program of the University's Graduate School for International Development and Cooperation. (Note that section ① contains related descriptions [IDEC international students: five times, 32 students; IGS students: 5 times, 45 students; participating graduates: 5 times, 21 graduates])

- iii) Implementing joint research projects between undergraduate schools and attached schools [Project Nos. 41, 42, 43]

In AY 2020, as it has been doing since AY 2004, the University continued to carry out joint research projects between undergraduate schools and attached schools. Joint research projects involving various fields were conducted. There were 11 applications submitted from all undergraduate schools and attached schools, and six were adopted based on a screening. The research results of seven projects adopted in AY 2019 (research period of two years) were presented at academic conferences. The research results were also organized into academic papers in English and disseminated to the world by being published in the Hiroshima University Academic Information Repository. (Issued on March 31, 2021)

- iv) Teacher training in response to globalization [Project Nos. 41, 42, 43]

- In their teaching training programs, Hiroshima University Junior and Senior High School explored new ways of learning by preparing teaching materials and teaching plans in English. The results of the effort described above was reflected in the guidance and practice relating to the teacher training program implemented in September.
- One international student affiliated with the International Education Development Program of the Graduate School for International Development and Cooperation was accepted as an intern (international student intern) at Hiroshima University Junior and Senior High School, Fukuyama, and science classes at the senior high school were taught in English. In addition, to acquire practical skills, the international student intern performed preliminary experiments, prepared to teach classes, and taught classes.

### ③ Community collaboration

- i) Efforts made as a base for teacher training in western Japan [Project Nos. 42, 43]

- To function as a base for teacher training in western Japan, attached schools accepted teachers from various prefectures and cities through personnel exchanges and dispatch training, and they implemented a systematic teacher training program tailored to teachers' abilities and skills depending on which stage of their career they are at. In addition, the University signed an agreement with Hiroshima Prefecture on providing long-term dispatch training for early childhood education teachers and accepted one teacher.
- As part of a teacher training program being offered at the Hiroshima University Junior and Senior High School and at Hiroshima University Junior and Senior High School, Fukuyama, teachers, dispatched through personnel exchange, taught demonstration lessons at an open educational research conference, where a supervisor of a board of education and university instructors served as advisors.
- The University's attached schools participated in the WWL consortium project conducted by Hiroshima Prefecture (described in section ①) as a partner school and cooperated in the following ways: 1) students at the University's attached schools interacted with students at base schools and partner schools in the prefecture by giving presentations on their research and 2) attached schools provided research cooperation, such as by engaging in discussions on curriculum development.

### ④ Revising the roles and functions of attached schools

- i) Efforts to develop Hiroshima University's functional enhancement measures [Project Nos. 41, 42, 43]

- Regarding special support education, attached schools collaborated with the University's Center for Special Needs Education Research and Practice in holding discussions with boards of education in the prefecture, through which the following decision was made: Attached schools will collaborate with boards of education in the prefecture in accepting students pursuing a special needs education teaching license, conducting research, and providing training.
- Regarding collaboration with the Professional Development Program for Teachers and School Leaders, to improve the functions of the University's attached schools as a place for teaching practice and research, the University considered the idea of establishing a new satellite facility for the Professional Development Program for Teachers and School Leaders in the Midori area and prepared a rough draft of the concept.
- The University examined how it could use the land and buildings currently existing in the Midori area. In addition, it reviewed ideas of what it could do to create an optimal education and research environment and considered the possibility of constructing new functional buildings in the future.

### (8) Joint usage and research centers

#### Research Institute for Radiation Biology and Medicine

##### ① The Institute's efforts and achievements (including efforts to strengthen its joint usage and research system and also fulfill its essential role)

- i) The Institute's role as a core institution [Project No. 27]

The Institute was appointed in AY 2010 as an Independent-type Research Center for Radiation Effects and Medical Science and had served as one until AY 2015; it now



comprises the Network-type Joint Usage/Research Center for Radiation Disaster Medical Science together with Nagasaki University and Fukushima Medical University. In AY 2020, the three universities conducted 241 joint usage and research projects (34 more than in the previous academic year), including 30 international joint research projects (14 more than in the previous academic year), contributing as core institutions to the formation of an academic base for research on radiation disasters and medical science.

ii) The Triangle Project [Project No. 27]

To help advance academic research and thereby fulfill their role as a network-type joint research center, in AY 2017, the three universities began implementing a Triangle Project, which comprises the following themes that enable them to maximize their strengths and capacities: 1) low-dose radiation effects and risks, 2) radiological emergency care, and 3) the impact of nuclear disasters on communities and protection from radiation. The three research institutes comprising the Network-type Joint Usage/Research Center for Radiation Disaster Medical Science (i.e., the Hiroshima University Research Institute for Radiation Biology and Medicine; the Atomic Bomb Disease Institute, Nagasaki University; and Fukushima Global Medical Science Center) formed a joint research team and carried out 26 research projects.

iii) International symposium [Project No. 27]

In February 2021, an international symposium was held on the theme of “Nuclear Disaster Management, Community Engagement and Resilience,” welcoming 10 world-renowned speakers (including five international speakers). The symposium was held online and welcomed 129 participants, who shared the latest trends in radiation disaster and medical science research. In addition, to help young researchers grow as academics, the symposium included a poster session to provide such researchers with an opportunity to practice giving poster presentations, and three researchers, who gave particularly outstanding ones, were awarded prizes.

iv) Workshop [Project No. 27]

In February 2021, a workshop was held online and comprised the following sessions, welcoming 72 participants: 1) presentations on joint usage and research projects by network-affiliated researchers from around the nation, selected through a public call and screening; 2) presentations on progress made in the Triangle Project, a cross-university collaborative project being carried out by the three universities; and 3) presentations on joint projects being carried out in collaboration with other Network-type Joint Usage/Research Centers. The workshop allowed the University to provide a venue for researchers to exchange information on the research results of the Institute and the collaboration between the network-type joint research centers and also to discuss future research possibilities.

v) The Fukushima Prefectural Citizens’ Public Lecture University [Project No. 27]

While the Fukushima Prefectural Citizens’ Public Lecture University event was held as a citizens’ gathering in the previous academic year, due to the need to prevent the spread of the novel coronavirus infection, this academic year, the University held the event by producing a TV program and broadcasting it. In addition to introducing the efforts of the Institute, the University was able to communicate the research results of its researchers to public representatives in an easy-to-understand manner.

vi) Loose collaboration between network-type joint research centers [Project No. 27]

In AY 2017, the Research Center for Radiation Disaster Medical Science concluded an Agreement on Promoting Collaboration and Cooperation with the Network Joint Research Center for Materials and Devices and the Research Center for Biomedical Engineering. Subsequently, based on that agreement, the three network-type research centers promoted research exchange by having researchers at loosely affiliated centers give poster presentations at the Institute’s international symposium. In addition, the University promoted joint research with network-type centers. One such joint research effort was conducted with SANKEN, Osaka University, which specializes in image analysis, and aimed at fully automating the image analysis of chromosome analysis based on the PNA-FISH method, which was developed by the University. Furthermore, a “Loose Collaboration” website was developed to inform network-type centers of what kind of collaborative efforts are being made among themselves and thereby encourage them to carry out more joint research projects. (URL : <http://gentle-networks.tagen.tohoku.ac.jp/>)

vii) Self-inspection/evaluation and external assessment [Project No. 27]

The Institute conducted self-inspection/evaluation and external assessment of its efforts made between AY 2016 to AY 2019. (The external evaluation committee held its meeting online.) The external evaluation committee comprised six experts and the Institute received a score of 3.5 or higher, with 4 being the highest, for all of the following items: 1) the purpose of the Institute, 2) implementation system, 3) application for joint research, 4) examination of joint research, 5) support systems, 6) results of joint research, 7) distinctive efforts, 8) improvement systems, and 9) response to the intermediate evaluation’s evaluation comments.

viii) Website renovation [Project No. 27]

In addition to adding a new menu for researchers to make searching for available facilities and services easier, to make procedures for submitting proposals even more easier, a banner that advertises the application office was added to the top page. In addition, to make research results and publications more accessible to non-researchers, the Institute improved its website in ways that will make viewing research results and publications easier. Furthermore, the Institute created a new banner that reads “Activities related to Fukushima,” which guides the following types of visitors to information on the reconstruction of Fukushima and support that Fukushima has received and what Fukushima has to give back: 1) visitors affiliated with the Institute, 2) visitors not affiliated with the Institute, 3) visitors living in Fukushima Prefecture, and 4) the general public.

② **The Research Institute for Radiation Biology and Medicine’s original efforts and achievements**

i) Construction of a new experimental research building [Project No. 27]

The construction of a new experimental research building completed in February 2021 with the aim of improving the infrastructure of the joint usage and research centers. The following facilities were established for joint use and research with domestic and overseas partner researchers: 1) a radiation experimental facility, 2) an animal experimental facility, and 3) a genetic experimental facility. A Nuclear Disaster Training Center was also established in the new experimental research building, which can be used to cultivate human resources in the

field of radiation disaster medicine, giving the new experimental research building the potential to contribute to the development of the world's radiation disaster and medical science field.

ii) Implementation of crowdfunding [Project No. 27]

With the tissue specimens of A-bomb survivors deteriorating over time, internationally valuable materials are in danger of being lost. Therefore, a crowdfunding campaign was held to digitize slide specimens of A-bomb survivors, and more than 270 people supported the project, donating 4.5 million yen, which far surpassed the Institute's initial goal.

iii) Discovery of the ability of peroxisomes to supply cholesterol to pili

[Project No. 27]

A joint research team led by the University discovered that peroxisomes, one of the cell organelles, supply cholesterol to primary pili, which act as sensors of the cell. The joint research team found that a decrease in cholesterol in primary pili in cells of patients with peroxisomal dysplasia results in pili dysfunction. In addition, the joint research team demonstrated that cholesterol supplementation improves pili abnormalities. Since many molecules related to cancer and psychiatric/neurological diseases concentrate in the primary pili, the results of this research are expected to contribute to the development of new treatments for not only pilus diseases, which are rare diseases in which genes related to the primary pili are congenitally defective, but also for diseases that many patients suffer from.

iv) Discovery of the lipid metabolism mechanism of leukemia stem cells [Project No. 27]

An international collaborative research team involving the University discovered a lipid metabolism mechanism necessary for the maintenance of chronic myeloid leukemia (CML) stem cells. While CML stem cells are known to have the ability to generate large numbers of CML cells and to be resistant to anticancer drugs, thereby causing cancer to recur, this study unveiled the mechanism by which CML stem cells maintain survival by activating lysophospholipid metabolism. Studies on animal models have demonstrated that suppressing lysophospholipid metabolism can reduce the number of CML stem cells and increase the therapeutic effect of CML.

v) Elucidation of novel mechanisms of hematopoietic stem cell senescence [Project No. 27]

A joint research team involving the University has elucidated a new mechanism regulating hematopoietic stem cell (HSC) senescence. Histone modification is known to play an important role in biological homeostasis. Therefore, the joint research team generated mice lacking histone demethylase UTX and found that UTX deletion induces HSC senescence. The expression of UTX decreased in aged HSCs compared to young HSCs, suggesting that the decrease in UTX function is also involved in physiological aging. The joint research team found that UTX regulates HSC senescence through both demethylation activity-dependent mechanisms and demethylation activity-independent mechanisms.

vi) Development of a method to evaluate the reprogramming state of cells using Raman scattering light [Project No. 27]

A joint research team involving the University has developed a non-staining and minimally invasive method for evaluating the reprogramming state of cells in the process of

reprogramming from differentiated cells to iPS cells by using the light that scatters when cultured cells are irradiated with laser light (Raman scattering light). The joint research team analyzed Raman scattering light irradiated on differentiated cells derived from mouse ES cells, cells undergoing reprogramming, and iPS cells, and it found that the differentiation and reprogramming states of the cells could be discriminated with single-cell accuracy. This method is simpler and faster than conventional methods for observing protein and gene expression and is expected to become a powerful tool for stem cell research in the future.

vii) Development of a method to evaluate the cell membrane permeability of medium molecular drugs with a single cancer cell

[Project No. 27]

A joint research team involving the University developed a new method to accurately evaluate the cell membrane permeability of cyclic peptides, which are expected to become next-generation medium molecular drugs, with a single cancer cell. The joint research team developed the single-cell cytoplasmic mass spectrometry (SCC-MS) method by first culturing breast cancer cells (MCF-7 cells) with cyclic peptides, such as cyclosporine A (CsA), and then using microneedles to suck out only the cytoplasm from a single cell to measure the cyclic peptides contained in it with high sensitivity. The results of this study are expected to make a significant contribution to the development of medium molecular drugs that target molecules inside cells, which previously could not be evaluated directly.

### Hiroshima Synchrotron Radiation Center

#### ① The Institute's efforts and achievements (including efforts to strengthen its joint usage and research system and also fulfill its essential role)

i) Joint usage and research projects [Project No. 27]

Due to the novel coronavirus pandemic, based on the university's action guidelines, the Center suspended its synchrotron radiation operation from April 21 to May 31. While the Center resumed its synchrotron radiation operation from June, it was only able to accept visitors from outside the prefecture between August 1 and October 16. Between October 17 and the end of December, the Center implemented maintenance of its synchrotron radiation source, and it resumed its synchrotron radiation operation on January 12, 2021. However, due to a state of emergency being declared again, on January 18, the Center had to stop accepting visitors from outside the prefecture. Since the Center was unable to carry out most of the proposals it accepted for term A (April 7–August 28, 2020), it did not call for new general proposals for term B (September 1, 2020–March 31, 2021). Therefore, the total number of proposals accepted for conducting joint usage and research projects in AY 2020 was 78, including 59 general proposals and 19 academically urgent ones (total number of applications: 84, acceptance rate: 93%). Of the accepted proposals, 22 (29%) were submitted from overseas, and the international collaborative research network expanded to 82 institutions. The Center's faculty and staff carried out measurements on behalf of 16 proposals submitted from overseas for application to use the Center. In addition, to promote remote use, the Center changed the sample holder and made preparations for making remote measurements.

ii) Research findings [Project No. 27]

In 2020, the Center published 57 peer-reviewed papers (including 52 SCI papers), surpassing the number of papers it published in AY 2019, which was 42 (33). Of the 57 peer-reviewed papers, nine of them (16%) were published in top journals with Cite Scores (CS) of 10 or higher (e.g., ACS Nano, Science Advances, Nature Communications, Physical Review X, Physical Review Letter). Of the total number of papers the University published, the percentage of internationally co-authored papers was 58% (33 papers), and the percentage of papers that made it to the Top 10% of the SCI papers published during the 3rd mid-term target period (AY 2016–AY 2020) was 14%, both types maintaining high percentages.

iii) Organizing academic conferences and study groups [Project No. 27]

On December 19, 2020, the Center held an online Hiroshima University KEK-day event. In addition to five lectures on accelerators and various research fields using accelerators, given by lecturers from Hiroshima University and the High Energy Accelerator Research Organization (KEK), virtual reality (VR) tours were conducted around the following quantum beam facilities: 1) experimental facilities at the Center, 2) accelerator experimental facilities at KEK, and 3) neutron and muon experimental facilities at J-PARC. About half (65) of the 134 participants were technical college and high school students, and the lectures and tours served as opportunities to increase the interest of participants in accelerator-related fields, such as synchrotron radiation. In addition, with one of the Center's faculty members serving as the executive committee chairperson, the 34th Annual Meeting of the Japanese Society for Synchrotron Radiation Research and the Joint Symposium on Synchrotron Radiation Science were held online from January 8 to January 10, 2021 (welcoming 587 participants). Furthermore, the 25th Hiroshima International Symposium on Synchrotron Radiation was held online from March 4 to March 5, 2021 (welcoming 71 participants, including 11 international participants).

iv) Promoting collaboration between the University and its attached senior high schools and promoting the University's facilities [Project No. 27]

During Education and Culture Week, with infection control measures in place, the Center accepted visitors from the public, including elementary school students (36 participants), and it also organized social studies field trips for Hiroshima University Junior High School (48 participants). To facilitate high school-university transition, the Center participated in the advanced science training program of Hiroshima University Senior High School (SSH school), and it conducted remote lectures online and gave tours around facilities of the Synchrotron Radiation Experimental Hall (43 participants). In addition, to respond to the needs of the new "post-corona" world, the Center installed 16 VR goggles and produced contents for facility tours using VR technology. By using the goggles and new contents, the Center held a VR facility tour and scientific experiment seminar at Hasumi Junior High School in Onan Town, Shimane Prefecture (10 participants). Students who participated said that they thought the facility tour using VR goggles felt very realistic. Based on these results, in collaboration with the Higashi-Hiroshima City Board of Education, the Center launched a project to introduce radiation science to junior high schools in remote areas.

v) Collaborating with Inter-University Research Institute Corporations [Project No. 27]

By using the cross appointment system, the Center hired two accelerator experts from KEK as Associate Professors (Special Appointment) and discussed the future plan for the Center's

core equipment, which is its light source accelerator. In addition to using computer simulation to produce designs, the Center began developing elemental technologies for accelerators at KEK.

② **The Hiroshima Synchrotron Radiation Center's original efforts and achievements**

i) Promoting interdisciplinary research [Project No. 27]

In AY 2020, the Center developed technologies for making high throughput measurements and microscopic measurements of the circular dichroism of biomolecules. In addition, the development of such technologies helped discover ingredients that reduce the structural changes that beauty-treatment-related damage could cause to hair proteins, and the ingredients are now used in new hair care products (press release: 1; online news: 1). As a new initiative, the Center constructed and evaluated a time-resolved measurement device using microfluidic channels, and it confirmed that the structural change of biological materials is observable in milliseconds scale.

ii) Achievements in spintronics research [Project No. 27]

In AY 2020, the Center designed and built a multi-channel spin detector. Regarding the synchrotron radiation spin-angle-resolved photoelectron spectroscopy beamline BL-9B, the Center began making efforts to install a capillary mirror for micro-light collection to enable the conducting of experiments with higher spatial resolution. The Center issued four press releases on the following subjects: 1) the creation of a new magnetic topological insulator heterostructure, 2) the discovery of the topological surface state in the phase-change material GeSb<sub>2</sub>Te<sub>4</sub>, 3) the on-off control of the topological surface state by the charge density wave phase transition, and 4) the elucidation of the spin structure of single tellurium with a chiral structure.

**Research Institute for Nanodevice and Bio Systems**

① **The Institute's efforts and achievements (including efforts to strengthen its joint usage and research system and also fulfill its essential role)**

i) Joint usage and research projects [Project No. 27]

The number of joint research projects conducted by the Research Center for Biomedical Engineering, a network-type joint research center, in AY 2019 was 228 and 225 in AY 2020, indicating that a community of researchers with a certain level of activity has been formed over the five years since the Institute began conducting activities. This academic year's report meeting was held online on March 5, 2021, and researchers participating in the Institute exchanged information. The information that the Institute obtained at the report meeting will be reflected in its activities to be conducted in AY 2021.

ii) Research findings [Project No. 27]

In AY 2020, the Institute published 83 peer-reviewed SCI papers. In AY 2020, the Institute published six peer-reviewed SCI papers on breast cancer detection technology, two of which were published in top journals with Cite Scores (CS) of 8.2 or higher (e.g., IEEE Transactions on Biomedical Circuits and Systems [IF: 4.042, CS: 8.20] and IEEE Internet of Things Journal [IF: 9.936, CS: 12.6]). The Institute also published four papers with Impact Factors (IF) of 3.6 or higher. In addition, the Institute published four international co-authored papers, maintaining high standards.

iii) Human resource development [Project No. 27]

At the Institute's practical training session, Tokyo Medical and Dental University provided training on the use of biosensors while the Institute did the same online with CMOS integrated circuits. The session was attended by seven young biomedical/dental engineers, comprising four from private companies and three from universities. Of the seven participants, five were foreigners, so all training sessions and lectures were conducted in English.

iv) Information dissemination [Project No. 27]

This academic year, the Institute recognized that its newsletter had the potential to provide its young researchers with opportunities to actively publicize their research results. Therefore, the Institute published volumes five and six of its newsletter. To put research results to practical use and deepen cooperation with companies, the Institute collaborated with the Tokyo Medical-Industrial Cooperation HUB System in holding an online medical-engineering cooperation seminar, and the four schools that participated in the seminar presented their latest medical applications of technology to medical device-related companies.

**② The Research Institute for Nanodevice and Bio Systems's original efforts and achievements**

i) Expanding the Institute's international joint research network [Project No. 27]

The Institute conducted joint research with the KTH Royal Institute of Technology on SiC extreme environment electronics. Despite being in the midst of the novel coronavirus pandemic, joint research is being promoted through close cooperation thanks to the network allowing research meetings to be held once every two weeks.

ii) Developing young human resources [Project No. 27]

The Institute provided senior high school students at the University's attached schools with experiment-based lessons on how to build solar cells. In addition, to help young semiconductor engineers improve their know-how, it collaborated with other institutions jointly comprising the Research Center for Biomedical Engineering in providing training on CMOS integrated circuits. Furthermore, to help young researchers advance their careers, the Institute decided to begin employing, in AY 2020, the following types of researchers as Assistant Professor trainees: 1) those affiliated with the University's research institutes and 2) graduates of the University's master's degree programs.

iii) Efforts made as part of the Ministry of Education, Culture, Sports, Science and Technology's Nanotechnology Platform

[Project No. 27]

In AY 2020, the Institute responded to 52 requests for help (of which the outcomes of seven were kept confidential). Of these, 10 were projects supporting private companies, of which 8 were large companies and 2 were small- and medium-sized companies. The Institute was selected as an entity to undertake the Next-generation Nanotechnology Platform Project, which is an Advanced Materials Research Infrastructure Project of the Ministry of Education, Culture, Sports, Science and Technology (10-year project), and the project was budgeted from the supplementary budget for AY 2020. Both the Nanotechnology Platform Project and the Advanced Materials Research Infrastructure Project were operated in AY 2021. However, in

the AY 2022, the two projects will be integrated into one: the Advanced Materials Research Infrastructure Project.

iv) Promoting collaboration between local industries [Project No. 27]

The Institute regularly exchanges information and personnel with Micron Memory Japan, G.K., one of whose factories producing and shipping memory products internationally is located nearby the Institute. In addition, the Institute is indebted to the company for providing it with donations (e.g., in AY 2018, the Institute received \$100,000 in donations from Micron Memory Japan, G.K.).

v) External funding [Project No. 27]

The external funds acquired in AY 2020 are as follows (unit: 1,000 yen).

• Grants-in-Aid for Scientific Research:	33,150
• Joint research:	47,210
• Entrusted research:	46,394
• Donations:	2,964
• Research Center for Biomedical Engineering:	10,466
• Advanced Materials Research Infrastructure:	74,661
Total:	214,845

vi) Self-inspection and external assessment [Project No. 27]

To provide itself with a reference for designing research and education policies for the fourth medium-term period, the Institute developed self-inspection reports for the years between its establishment and AY 2018 and asked the University's subcommittees and school evaluation committees to assess them. An external evaluation committee meeting was held in December 2020 to receive evaluation comments and opinions on the future direction of the Institute, and the Institute subsequently began preparing a self-inspection report.

**(9) Educational communal facilities**

**Training and Research Vessel TOYOSHIO MARU**

The University has been paying close attention to the spread of the novel coronavirus infection since the previous academic year. In addition, it took into account the high risk of infection that carrying passengers on board could pose, and accordingly it took maximum measures by limiting the number of passengers who could board and stay overnight on board. However, due to the need to prevent the spread of the new coronavirus infection, many voyages had to be cancelled. All of the six planned inter-university collaborative voyages (independent voyages by other universities and shared voyages for students of other universities) had to be cancelled due to either of the following reasons: 1) requests from prospective joint-use universities or 2) the need to comply with the University's guidelines for conducting face-to-face lectures. On the other hand, during the period when the infection situation in Japan was relatively calm, the University conducted two shared voyages that allowed students from other universities to board and five social contribution voyages for junior and senior high school students (including on-board tours at berths), welcoming 9 and 175 passengers from other institutions, respectively. The passengers on the shared voyages included three international students participating in an ASEAN student exchange program (AIMS/PEACE program).

To make the training ship itself and its projects more female friendly, efforts were made to assign female faculty members or female TAs, and of the 20 voyages conducted this academic year, 10 were accompanied by female faculty members.

Information on all voyages is available on the Toyoshio Maru website, and this academic year, to promote joint use, the University produced a PR video of the Toyoshio Maru using a drone. [https://www.youtube.com/watch?v=4psOf1x86c&feature=emb\\_title](https://www.youtube.com/watch?v=4psOf1x86c&feature=emb_title)

### Marine Biological Laboratory

In April, the Laboratory welcomed a new full-time faculty member to improve this academic year's work performance. However, this academic year, various events were greatly affected by the spread of the novel coronavirus infection. Starting with the cancellation of the directors' meeting of the National Seaside Lake Experiment Station, which was to be held at the Laboratory, two of the intensive overnight training programs (the Shimanami Sea area marine biology training program [first semester] and the Open University of Japan's training program) had to be cancelled. At the same time, the Laboratory has been pushing forward with infectious disease control measures, including the development of its own guidelines for infectious disease control. From July onwards, the Laboratory came to be able to reopen its events in a face-to-face manner by greatly reducing the number of participants below the usual capacity and taking all possible measures, including the requiring of using disinfectant sprays and placing restrictions on facility use. The guidelines prepared by the Laboratory were highly evaluated by the coastal laboratories of other universities and were shared with all related organizations through the Japanese Association for Marine Biology. In addition, at the strong request of the Misaki Marine Biological Station of the University of Tokyo, the Laboratory also provided a countermeasure flowchart.

Due to the new coronavirus infection, the Laboratory was unable to welcome any students from other universities to the Marine Biology Education Field Training course, which was newly opened this academic year. However, it was able to welcome six students from the University, and the course was conducted by combining face-to-face and online classes. The Laboratory held a presentation session online after the course's practical training program and asked the participants what they thought of the course. The participants responded that they highly appreciated the course and said they would definitely recommend other students to take the course next academic year. In fact, the number of students scheduled to take the course in AY 2021 surpassed that of the first year by eight, making the first year of the course a success. As it did the previous academic year, the Laboratory conducted three open coastal training sessions and also conducted the second semester of the Shimanami Sea area marine biology training program in a face-to-face manner, welcoming 18 students from other universities.

As an effort to internationalize higher education, the Laboratory was scheduled this academic year again to undertake the Sakura Science Plan project of the Japan Science and Technology Agency (JST). However, the project had to be carried over to the next academic year. Although the Laboratory was not able to invite any participants in person in holding an exchange meeting, it did hold an online exchange meeting over two days with representatives of the following schools, with which the Laboratory has held meetings previously: 1) the National Chung Hsing University (Taiwan) and 2) the National Islamic University Malang, Surabaya, Alauddin Makassar, and Tulungagung, and University of Jember (Republic of Indonesia). In addition to the preceding schools, Brawijaya University newly joined, and the online exchange meeting was attended by more than 130 participants from seven universities.

On the other hand, as it has been doing since 2010, in AY 2020, the Laboratory helped Onomichi City Takami Elementary School implement three of its educational programs designed to help students study organisms living in the community through gathering and categorizing biological data and making bookmarkers with seaweed. Although the number of participants had to be reduced to half the usual number, as it has been doing since AY 2016, the Laboratory helped Notre Dame Seishin High School, located in Okayama Prefecture, provide students in its Super Science High School program with practical training. In addition, the Laboratory participated for the first time in the Global Science Campus Hiroshima, a project for fostering next-generation human resources, implemented by the University, and conducted online seminars and selective screenings of project presentations. Furthermore, the Laboratory held a teacher's license renewal course, welcoming 10 teachers from elementary, junior high, and high schools in the Chugoku and Shikoku regions. The Laboratory also helped conduct Boy Scout Onomichi's activities, offering participants the use of its property.

In addition, so that it will be able to conduct activities online even if conducting face-to-face activities becomes impossible due to emergencies or disasters like the new coronavirus infection, the Laboratory took its own measures, such as by preparing Internet connection equipment and video distribution equipment. Furthermore, the Laboratory promoted the use of its website by updating it as needed, and to make future projects smoother and more efficient, it held collaborative meetings to renew the terms of office of internal and external steering committee members.

### Setouchi Field Science Center Saijo Station (farm)

Due to the nationwide spread of the novel coronavirus, this academic year, all six courses (exercises) had to be cancelled. Therefore, this academic year, to improve the quality of the educational content of the exercises in preparation for next academic year, regarding the three exercises (Field Science for Food and Agriculture to Teach the Dignity of Life, Field Science for Dairy Farming, and Field Science for Food Education for Undergraduates Majoring in Child Care) offered at the Saijo Station (farm) over the last four years of its project (AY 2016–AY 2019), the Laboratory conducted 1) a verification of the performance of the exercises offered over the last four years and 2) a follow-up survey of past students to verify the educational effects of the exercises.

#### 1) Verification of the performance of the exercises offered over the last four years

Over the last four years, the Laboratory's project offered the following exercises: 1) four Field Science for Food and Agriculture to Teach the Dignity of Life exercises (hereinafter, "Dignity of Life Exercise"), four Field Science for Dairy Farming exercises (hereinafter, "Dairy Farming Exercise"), and four Field Science for Food Education for Undergraduates Majoring in Childcare exercises (hereinafter, "Childcare Exercise"). The Laboratory welcomed the following number of students to each of its exercises: 1) 120 students (from 10 universities, including one technical college) to the Dignity of Life Exercise through the Education Network in the Chugoku Area and other organizations, 2) 126 students (from 10 universities) to the Dairy Farming Exercise through the Chushikoku University Liaison Council, and 3) 124 students (from 5 universities) to the Childcare Exercise. In all exercises, the percentage of female students tended to be higher (Dignity of Life Exercise: 67.5%, Dairy Farming Exercise: 77%, Childcare Exercise: 96%). All exercises were based on an experiential educational program that combined classroom lectures, practical training, and presentations. Educational programs were established in line with the educational



objectives for students majoring in non-agricultural fields, agricultural fields, and nursery schools, and every year, the Laboratory improved the contents of its exercises and reexamined their time schedule based on a PDCA cycle. Here is an example of an improvement made based on a PDCA cycle. The main feature of the Laboratory's educational program is its research-based project, which requires students to present their own ideas on dairy farming and animal welfare in groups. Initially, students were asked to give their presentations using PowerPoint. However, the Laboratory came to the realization that project activities that relied on the use of personal computers caused presentations to turn out to be similar to one another, not allowing students to demonstrate their originality. Therefore, in the second term (AY 2015–AY 2019), the presentation format was changed to a handwritten poster session. This change improved not only the originality of student presentations but also stimulated student discussions. In particular, according to student responses to a survey taken immediately after the exercises, the percentage of dignity-of-life-exercise students who said they felt they were able to successfully demonstrate teamwork in giving presentations increased (from 78.9% in the first semester [AY 2010–2014] to 81.3% in the second semester), indicating that the change also helped foster cooperation.

## 2) Follow-up survey of past students

To verify the long-term educational effects of the exercises, the Laboratory conducted a survey via e-mail of (some) students who had participated in the Dignity of Life Exercise and Childcare Exercise. The questions basically asked how the contents of the exercises subsequently helped them in their daily lives and whether the exercises influenced their choice of career.

The survey response rate was 75.9% (60/79 students: 37 dignity-of-life-exercise students [3 universities] and 23 childcare-exercise students [2 universities]). The numbers of years that had passed since students took the exercises were 1 to 4 years for the dignity-of-life-exercise students and 1 to 3 years for the childcare-exercise students. Regarding animal welfare, which students learned about in their exercises, the percentages of students who said they came to think about animal welfare in their daily lives were as follows: 91.9% of dignity-of-life-exercise students and 100% of childcare-exercise students. Specifically, students tended to ask for daily-life ethical considerations for livestock, which is our source of food, saying, "I believe the stress felt by livestock needs to be reduced" and "I want the suffering experienced by livestock to be minimized as much as possible." On the other hand, regarding whether the exercises helped students make their career choices, the percentages of students who answered "Yes" were as follows, showing that childcare-exercise students found the programs significantly more helpful than did the dignity-of-life-exercise students: 43.2% of dignity-of-life-exercise students and 52.2% of childcare-exercise students.

Childcare students will likely become childcare providers in the future and come to be involved in dietary education and food and agricultural education, and if they do, they will be playing an important role in communicating to children the following: 1) the importance of agriculture and food production and 2) food safety. These results suggest that the educational effects of the exercises provided by the Saijo Station (farm) are sustained even after the passing of years. The results of this survey were presented at the 27th Annual Meeting of the Society for the Study of Human Animal Relations (held on March 13 and 14, 2021: 111 participants), disseminating the activities being carried out at the University's Laboratory to the entire nation. The results also proved to be important in that they

suggested the significance of having college students receive livestock-mediated field education.

Based on the results described in sections 1) and 2), the Laboratory plans to improve the quality of its education by using a PDCA cycle to further improve its programs in preparation for offering exercises in AY 2021.

## Setouchi Field Science Center Takehara Station (Fisheries Research Station)

Due to the novel coronavirus pandemic and the need to prevent its spread, two of the three courses (exercises) offered to students of other universities had to cancel the acceptance of students. In addition, although one of the three courses was conducted, the number of students who participated in it drastically decreased from nine (AY 2019) to three (AY 2020). Nevertheless, to introduce what kind of educational content these courses offer, the Station offers five videos on YouTube, showing parts of the courses as follows: 1) observing and catching fish in seaweed beds, 2) catching plankton, 3) collecting seaweed, 4) observing tidal flats, and 5) diving to observe life in the Seto Inland Sea. All five videos clearly show the characteristics of the *Satoumi* (shallow seas with tidal flats and seaweed beds), so the videos were educational for students who were planning to take the course this academic year and are expected to be educational for others who are thinking about taking the course in the future. Although it has only been four months since the video about the tidal flats was posted, the video has already been viewed about 500 times. In addition, the Station is planning to produce and post videos on laver and oyster farming, which are major industries in the Seto Inland Sea, and these videos can be expected to become valuable educational content for understanding the nature and functions of the *Satoumi*, which has rich biodiversity and is effectively used by us. In addition, due to the impact of the new coronavirus infection, the number of shared users has dropped to about 60% of that in the previous academic year, decreasing from 464 (AY 2019) to 298 (AY 2020). The Station improved itself in the following ways: adding words to its glossary of technical terms related to fisheries science and marine biology for students (41 words were added this academic year, bringing the total number of terms to 293); and 2) adding more listed species in its digital picture book for understanding the biodiversity of the Seto Inland Sea (223 species were added and updated this academic year, bringing the total number of species to 288).

Video website:

<https://fishlab.hiroshima-u.ac.jp/kyotenka/movie/movie.html>

Glossary

<https://fishlab.hiroshima-u.ac.jp/yougoshu/network-chugoku-yougo-zentai.html>

Digital picture book

<https://fishlab.hiroshima-u.ac.jp/setouchi-ikimono/setouchi-ikimono.html>

Shared-use course name	Course outline	Registered students by year (students)	
		R 1	R 2
Satoumi field exercise	2 credits: 3 nights 4 days intensive	16	**
Seaside resource science exercise	2 credits: 4 nights 5 days intensive	11	**
Comprehensive exercise to learn about aquaculture products in the Seto Inland Sea*	2 credits: 3 nights 4 days intensive	9	3
Number of other shared users		464	298

\* Course title: AY 2017/2018 “Comprehensive exercise to learn about useful aquatic products”; the course title was changed to the current one in AY 2019.

\*\* Canceled due to the need to prevent the spread of novel coronavirus infection

## 2. Business operation and financial status

### (1) Business operation improvement and optimization goals

See special notes (pp. 42-48).

### (2) Financial status improvement goals

See special notes (pp. 49-53).

### (3) Self-inspection/evaluation and information disclosure goals

See special notes (pp. 54-57).

### (4) Other business management goals

See special notes (pp. 58-66).



### 3. Highly Highly strategic and ambitious objectives and plans

Unit 1		Efforts aimed at joining the ranks of the world's top 100 universities
	Medium-term goal [1]	Cultivate peace-pursuing, internationally cultured people with the knowledge, expertise, and specialized skills needed to help identify and resolve the various unpredictable issues faced by humanity.
	Medium-term plan [1]	Establish the foundation for an internationally competitive education system by promoting numbering, which the University introduced into its system in the 2nd mid-term target period, and syllabus translation into English for all courses.
	AY 2020 plan [1]	Examine whether the syllabi are numbered consistently and appear on the screen properly, and edit and fix them as necessary.
	Implementation status	<ul style="list-style-type: none"> <li>As happened last academic year, this year's syllabi examiners also achieved a consistently numbered syllabus development rate of 100% with both Japanese and English syllabi (as of April 2020).</li> <li>Staff examined whether syllabi are numbered consistently and appear on the screen properly. Consequently, staff judged that the system was working properly and that no improvements were needed. On the other hand, examination of syllabus numbering consistency and content of AY 2021 syllabi revealed inconsistencies in the descriptions provided in some syllabi's "Year of Study" and "Course Level" sections. Therefore, through the Headquarters for Education's Academic Affairs Committee, the relevant schools/offices were asked to correct them.</li> <li>In response to the increase in online classes due to the influence of the new coronavirus infection, the University modified its portal site for student information "Momiji" to accurately indicate to students the various methods of teaching courses, including online, face-to-face, and combined use of face-to-face and online classes. In addition, the University decided to begin reflecting in its syllabi, starting with those for AY 2021, which media and equipment will be used and what learning methods will be employed in classes.</li> </ul>
	Medium-term plan [2]	Introduce degree programs completely comprising courses taught in English to all undergraduate schools by the end of AY 2019 to offer education that responds to the needs arising from globalization, and subsequently verify results.
	AY 2020 plan [2]	Verify the results of degree programs completely comprising courses taught in English and make improvements if necessary.
	Implementation status	<ul style="list-style-type: none"> <li>In AY 2020, the School of Education introduced a new degree program completely comprising courses taught in English, and the following undergraduate schools of the University offered a total of 20 programs: the Schools of Integrated Arts and Sciences, Education, Law, Economics, Science, Medicine, Dentistry, Pharmaceutical Sciences, and Applied Biological Science offered one program each; and the School of Engineering offered 11 programs. The School of Letters and the School of Informatics and Data Science, which have not yet introduced degree programs completely comprising courses taught in English, have decided to introduce such degree programs in AY 2021 and are currently preparing to do so.</li> <li>To create a global campus, the University established a WG for Enhancing Undergraduate Education in English to study a system for promoting courses taught in English across different degree programs. To understand the needs of undergraduate students regarding taking courses taught in English, the WG conducted a survey and received responses from 823 students. According to student responses, more than 80% gave the following reasons for taking courses taught in English: "English is a language used in many countries across the globe" and "I want to become able to use English without difficulty." On the other hand, less than 10% gave the following reasons for not taking courses taught in English: "I have no desire to learn English" and "I don't see why I need to learn English." In addition, more than 70% of the students responded that they would like to take courses taught in English if the courses interested them and/or support was offered in Japanese. Furthermore, more than 70% also said they were interested but worried about whether they would be able to earn good grades or worried about being left behind. Therefore, the WG discussed the establishment of a support system for helping students understand the courses taught in English and formulated proposals concerning offering the following types of courses in a mutually complementary manner: 1) courses for learning English and 2) courses for being instructed in English.</li> </ul>
	Medium-term plan [3]	Set the University's target of undergraduate students with a TOEFL iBT score of 80 at about 25% and achieve this target by improving the University's courses taught in English and the Building Professional English Skills program and by regularly assessing students' English proficiency in order to help students acquire communication and presentation skills needed in a globalized world.
	AY 2020 plan [3]	Achieve a rate of approximately 35% of undergraduate students with a TOEFL iBT score of 80 by the end of AY 2021, and to do so, improve courses taught in English and the Building Professional English Skills program and also consider how students' English language proficiency could be regularly measured and make measurements.

<p>Implementation status</p>	<ul style="list-style-type: none"> <li>• The percentage of undergraduate students who met the foreign language proficiency standard (a TOEFL®iBT score of 80 or a TOEIC® score of 730 or equivalent) in AY 2020 was 16.7% (1,826/10,924), an increase of more than 20% from AY 2019's 13.5% (1,483/10,976).</li> <li>• The university-wide TOEIC® L &amp; R IP test is held in May and November every year (with the cost being borne by the University), and all undergraduate students are required to take the test at least twice before graduation. In addition to this requirement of taking the test at least twice, undergraduate and graduate students who want to take the test more than twice are basically allowed to take the test two more times a year. In AY 2020, due to the influence of the novel coronavirus infection, tests were conducted online, and to ensure opportunities for students to take the test, tests were conducted three times: once in July, December, and March. At the same time, the University analyzed test results from various perspectives, and to motivate students to learn English based on evidence, it implemented the following measures: 1) provided individualized guidance, 2) made English test scores a requirement to submit graduation theses, and 3) estimated each student's English achievement expectation score attainable within the student's period of study at the University.</li> <li>• To help students enhance their English language proficiency, the University improved its Global Peace Leadership Program (introduced in AY 2017), designed to cultivate peace-pursuing, internationally cultured, globally competitive people—with a deep understanding of Japanese culture and peace, the English language skills and leadership needed to help identify and resolve multicultural issues, and strong career development skills—and assessed its effectiveness by analyzing students' TOEIC scores. In AY 2020, the Global Peace Leadership Program received 34 undergraduate registration applicants (35 in AY 2019), and based on screenings of applications and interviews, it welcomed 23 (20 in AY 2019). Subsequently, to encourage other students registered with the program to study abroad, the program had three students who returned from studying abroad by March 2020 present their experience at a briefing. In addition, to help students improve their English language proficiency, the program provided free-of-charge IELTS™ test-taking opportunities to 23 registered freshmen students, of whom 19 actually took the test, which serves as a good indicator of whether a person has the English language skills needed to study abroad. In AY 2020, while the University planned to dispatch 13 registered students, it was unable to dispatch students as planned because its plans of doing so had to be cancelled due to the spread of the novel coronavirus infection.</li> <li>• As in the preceding academic year, AY 2020 offered Communication Practice I and II. Due to the influence of the new coronavirus infection, in AY 2020, classes and examinations were conducted online, and as for examinations, the courses used TOEIC® L &amp; R mock tests provided by a company called Reallyenglish. Of all students who took Communication Practice I, 166 students took all mock tests available, which were given in April, May, October, and November. Subsequently, the University compared the 166 students' average scores of TOEIC® L &amp; R mock tests that were taken in April and May and found that their average score increased by 27 points in May. The University also compared their average scores of tests taken in October and November and found that their score increased by 50 points in November. Between the first and the third terms, the University put effort into improving classes by changing the online teaching materials it had been using and changing the contents of its lecture videos. Consequently, a comparison of students average scores of tests taken in April and November proved that test scores increased by 41 points, indicating that while the change to online classes did have some impact on students' performance, online classes were effective to a certain extent.</li> <li>• In AY 2020, due to the influence of the new coronavirus, the course titled “Brush Up Your English Language Proficiency by Learning from Native Speakers” was conducted as an online English training program (DMM Eikaiwa) (free of charge). The training was designed to improve students' English skills by requiring them to take one lesson (25 minutes) a day at least 18 times a month and to also take the university-wide TOEIC® L &amp; R IP test in December as part of the training. The number of undergraduate applicants and participants was 417. In addition, after the training, 294 undergraduate students took the TOEIC® test, and compared with their test scores before the training, 183 students saw an increase in their test scores.</li> <li>• The Institute for Foreign Language Research and Education offered a language learning program with ubiquitous accessibility via the Internet, titled “Online English Learning NEXT.” The language program welcomed the following numbers of undergraduate users, indicated along with the name of the courses they were taking at the time: 1) 433 in the Intermediate Level of Comprehensive English Training, 2) 103 in the Advanced Level of the same course, 3) 67 in Achieve a Score above 500 on the TOEIC® L &amp; R Test, 4) 1,522 in Achieve a Score above 600 on the TOEIC® L &amp; R Test, 5) 1,437 in Achieve a Score above 730 on the TOEIC® L &amp; R Test, and 6) 343 in Broaden Your English Vocabulary. This academic year, the number of users more than doubled compared to the previous academic year partly due to the increased use of the language learning program as one of the teaching materials for online courses.</li> </ul>
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Medium-term goal [2]	Cultivate peace-pursuing, globally competitive people with highly specialized skills and the expertise needed to create original value and help identify and resolve various unpredictable issues faced by humanity.
Medium-term plan [7]	Sequentially introduce degree programs completely comprising courses taught in English into all graduate schools and expand the number of such courses to 66 by the end of AY 2019 to provide graduate course education that responds to the needs arising from globalization and cultivate advanced human resources able to compete in the modern world, and subsequently verify results.
AY 2020 plan [7]	Improve degree programs completely comprising courses taught in English based on the establishment and introduction policies—the latter of which was revised in AY 2019—of the Graduate School of Humanities and Social Sciences and the Graduate School of Advanced Science and Engineering.
Implementation status	<ul style="list-style-type: none"> <li>With the establishment of the Graduate School of Humanities and Social Sciences and the Graduate School of Advanced Science and Engineering, the total number of programs completely comprising courses taught in English as of April 2020 increased by one compared to that of AY 2019, bringing the total to 74.</li> </ul>
Medium-term plan [8]	Set the University’s target of graduate students with a TOEFL iBT score of 86 at about 30% and achieve this target by encouraging graduate students to give research presentations at international conferences, developing more courses taught in English, and setting up more degree programs completely comprising courses taught in English in order to develop human resources who can be self-reliant overseas as researchers and professionals with the communication and presentation skills required in a globalized world.
AY 2020 plan [8]	Achieve a percentage of approximately 35% of graduate students with scores of 86 or higher on the TOEFL iBT—an English language test for students with specialized academic backgrounds—by the end of AY 2021, and to do so, encourage students to give presentations at international academic conferences and also discuss the possibility of developing more courses and degree programs offered entirely in English and set up such courses and degree programs in order to help students acquire the ability to be internationally competitive and self-reliant.
Implementation status	<ul style="list-style-type: none"> <li>This academic year, due to the influence of the new coronavirus, the course titled “Brush Up Your English Language Proficiency by Learning from Native Speakers” was conducted as an online English training program (DMM Eikaiwa) (free of charge). The training was designed to improve students’ English skills by requiring them to take one lesson (25 minutes) a day at least 18 times a month and to also take the university-wide TOEIC® L &amp; R IP test in November as part of the training. The number of graduate school applicants and participants was 180. In addition, after the training, 129 graduate school students took the TOEIC® test, and compared with their test scores before the training, 56 graduate school students saw their test scores increase by an average of 75.</li> <li>The University conducts a university-wide TOEIC® L &amp; R test in May and November every year and allows graduate students to take them if they want to (with the cost being borne by the University). In AY 2020, the test had to be conducted online due to the influence of the new coronavirus infection, and to ensure opportunities for students to take the test, the University offered the test three times: once in July, December, and March.</li> <li>The Institute for Foreign Language Research and Education offered a language learning program with ubiquitous accessibility via the Internet, titled “Online English Learning NEXT.” • The language program welcomed the following numbers of graduate student users, indicated along with the name of the courses they were taking at the time: 1) 43 in the Intermediate Level of Comprehensive English Training, 2) 36 in the Advanced Level of the same course, 3) 31 in Achieve a Score above 500 on the TOEIC® L &amp; R Test, 4) 47 in Achieve a Score above 600 on the TOEIC® L &amp; R Test, 5) 59 in Achieve a Score above 730 on the TOEIC® L &amp; R Test, and 6) 79 in Broaden Your English Vocabulary.</li> <li>Compared to last academic year, the percentage of graduate school courses taught in English increased by 7.3% to reach 44.2% as of the end of AY 2020. In addition, the number of degree programs comprising courses taught entirely in English increased by one compared to that of the previous academic year, bringing the total of such programs to 74 as of April 2020.</li> <li>A total of 1,149 graduate school students had their English language proficiency measured by TOEIC®, of whom 330 (28.7%) achieved scores of 780 or higher.</li> </ul>
Medium-term goal [5]	Improve the quality of the University’s education to international levels by strengthening its educational system with help from other universities
Medium-term plan [12]	Improve the internal evaluation system for undergraduate and graduate school education under the leadership of the Education Promotion Organization, and based on evaluations, make improvements from the perspective of the quality assurance evaluation of the Student Experience in the Research University (SERU) to check whether the University’s education meets international standards in order to improve the University’s education to meet international standards and ensure the quality of its education based on the attainment-based education goal set by the University by the end of the 2nd mid-term target period.
AY 2020 plan [12]	Self-inspect and evaluate the University’s undergraduate and graduate school education. In addition, formulate improvement measures from the perspective of international compatibility by taking into consideration the results of the verification of the University’s internal quality assurance system for education.

	Implementation status	<ul style="list-style-type: none"> <li>The University self-inspected and evaluated its undergraduate and graduate schools as needed to produce annual reports for AY 2019.</li> <li>The University decided to review its current internal quality assurance system for education and revise its self-inspection and evaluation standards in preparation for receiving the accreditation evaluation in AY 2023. <u>A Self-Inspection and Evaluation Review WG was established under the Headquarters for Education's Education Quality Assurance Committee, and the WG continually reviewed the University's self-inspection and evaluation standards and created a new format and established new standards for its report.</u> Self-inspection and evaluation will be conducted using the new format and standards starting with the University's performance in AY 2020 (i.e., inspections and evaluations to be performed in AY 2021).</li> </ul>
	Medium-term goal [6]	Improve the University's educational environment and also respond to the needs of diverse students (including international, working-adult, and physically challenged students).
	Medium-term plan [14]	To expand financial support, introduce a New Pre-enrollment Scholarship System by AY 2019 to select students for scholarships based on the scores of their entrance examinations taken at locations overseas and inform them of their eligibility for scholarships prior to their arrival in Japan, and discuss how many students the system can afford to offer scholarships and the amount that can be paid.
	AY 2020 plan [14]	Based on the results of the previous academic year's verification, formulate a plan for improving the Hiroshima University Pre-enrollment Scholarship system, introduced in AY 2017, including the number of students the system can afford to offer scholarships and the amount to be paid.
	Implementation status	<ul style="list-style-type: none"> <li>After reviewing the previous year's schedule, the University conducted a verification of its pre-enrollment scholarship system based on reports submitted by students selected for the system this academic year. According to the verification, the students' satisfaction levels were high. Therefore, the University decided to keep the amount and period of payment the same. However, because graduate schools were reorganized, the University needed to revise the number of students to be offered scholarships. In AY 2020, only three students were selected for this scholarship program because many international students were unable to come to Japan due to the novel coronavirus pandemic. (In AY 2019, eight students were offered scholarships.) In addition, the University conducted a verification of this academic year's scholarship program, and according to the verification, the recruitment of students, the selection of students, and payment were carried out smoothly at the right times without any problems. Accordingly, international students raised no complaints or problems, and the University decided that no aspects of the system needed to be improved.</li> </ul>
	Medium-term goal [7]	Offer new admission options to attract talented people with diverse backgrounds from regions throughout Japan and across the world.
	Medium-term plan [18]	Switch to using qualifications and examinations internationally accepted and able to measure the four English-language skills of reading, listening, writing, and speaking for the AO examinations of all undergraduate schools by AY 2017, and also switch to doing the same with the general examinations of all undergraduate schools by AY 2019 in order to welcome students able to respond to the needs arising from globalization.
	AY 2020 plan [18]	Consider whether the University should increase the number of or change any aspects of the qualifications and examinations able to measure the four English-language skills based on a verification of their use for the University's AO entrance examinations, recommendation-based entrance examinations, and the general entrance examinations.
	Implementation status	<ul style="list-style-type: none"> <li>The University examined the GPA scores of students who were enrolled in AY 2019 through the "Assumed Perfect Score system," calculated the students' average GPA scores and standard deviation of GPA scores, and sorted scores by school and department. In addition, the University analyzed the pass/fail status of students who were enrolled in AY 2020 through the "Assumed Perfect Score system," under which they were given a perfect score on their entrance examination's National Center Test for University Admissions' English test, and sorted the results by school. In addition, based on the results of the analysis, issues were shared between the University and its School of Medicine, which discussed what measures need to be taken. Consequently, the following changes were made to the "Assumed Perfect Score system" for the high-school recommendation-type screening of the Department of Medicine of the School of Medicine (regarding applications for enrollment seats reserved for people originally from Hiroshima ) for being enrolled in AY 2022, and the changes were announced on the University's website by the end of March 2021: 1) examinees who earn a score of 180 or higher out of 200 on the Common Test for University Admissions will receive a perfect score and 2) examinees who earn a score between 160 and 179 will receive an additional 10 points.</li> <li>In the AY 2021 entrance examinations, the number of applications requesting to use the "Assumed Perfect Score system," received from applicants for the general screening, which were due on February 5, totaled 712, which reflects an increase of nearly 300 from the previous academic year's 423, indicating that the system is taking root.</li> </ul>
	Medium-term plan [19]	To attract a large number of talented international students, develop an English version of the Internet application system equipped with an application document upload function and a portfolio function, which will seamlessly allow applicants to perform all procedures required from application to admission, introduce the system into all graduate schools by AY 2020, and maximize overseas bases in the screening process of new students for enrollment in all graduate schools.
	AY 2020 plan [19]	Introduce into all graduate schools the English version of the Internet application system that was developed in AY 2018, which allows applicants to seamlessly perform all procedures required from application to admission, and maximize overseas bases in the screening process of new students for enrollment in all graduate schools.

		Implementation status	<ul style="list-style-type: none"> <li>The English version of the Internet application system was introduced into all graduate schools for the screening process of new students, conducted in AY 2020. In addition, the University introduced an admission procedure system (COMET) into the administrative terminals that implement procedures of all graduate schools.</li> <li>The University carried out a survey on whether graduate schools planned to conduct a special screening for international students using overseas bases and such apps as Skype as part of their graduate school entrance examinations for AY 2020. Consequently, the University found out that all graduate schools conducted screening processes for new international students using Skype.</li> <li>The numbers of applicants who used the Internet application system to apply for entrance examinations in AY 2020 were 7,132 for undergraduate schools and 2,066 for graduate schools.</li> </ul>
	Medium-term goal [8]		Promote highly original research in creative fields worldwide, and by doing so, enhance the University's research capacity to among the best in the world through collaboration with domestic and international organizations.
		Medium-term plan [22]	Achieve the following goals in order to become one of the top 100 research universities in the world: 1) create a good research environment where faculty members can concentrate on their research activities with research activity support from research administrators (URAs), who are research management personnel, and technical staff; 2) increase the number of academic papers published to about 1.5 times that at the end of the 2nd mid-term target period, increase the number of Top 1% and 10% highly cited academic papers, and publish humanities and social sciences books and papers that can win important academic awards by securing talented research personnel; and 3) double the number of international coauthored papers compared to the percentage of the 2nd mid-term target period by promoting international joint research and researcher exchange to strengthen the University's international research activities.
		AY 2020 plan [22]	Provide instructors/researchers with excellent research environments that will help them concentrate on their research and thereby increase the number of academic papers/findings and contribute to improving the University's research productivity indicator, hopefully allowing it to join the ranks of the world's top 100 comprehensive research universities. In addition, help young researchers establish startups, help University Research Administrators (URAs) secure external funding sources, and help researchers conduct international joint research projects to attract talented researchers and enhance the University's research capacity.
		Implementation status	<ul style="list-style-type: none"> <li>To strengthen the University's research capability, as its 5th strengthening policy, the University added the following item to its mid-term evaluation (AY 2017) of the program for promoting the enhancement of research universities (AY 2013–AY 2022): promotion of social collaboration based on global and local collaboration. In AY 2020, the University developed a Hiroshima University model for regional development, which aims to achieve the SDGs and Society 5.0. <u>In October 2020, the University founded the Arizona State University/Thunderbird Graduate School of Global Management—Hiroshima University Global Initiative on the Higashi-Hiroshima Campus.</u> Arizona State University (ASU) has a successful track record of implementing collaborative projects between the Town (city) and the Gown (university) for sustainable and innovative urban development. <u>To introduce ASU's experience, achievements, and know-how into the University and Higashi-Hiroshima City, in April 2020, the University established a Town and Gown Office preparation room. To form a global brain circulation center and to make Higashi-Hiroshima City a world-leading education and research field that attracts innovative human resources from around the world, Hiroshima University decided to promote collaboration with ASU and other leading universities around the world, and to do so, it established a system for attracting talented international faculty members and international students.</u></li> <li>Regarding the securing of external funding, <u>the University's research projects were selected in all of the following fields of the Project for the Development of Technology to Fight Infectious Diseases such as Viruses, for which the Japan Agency for Medical Research and Development (AMED) publicly called for projects in AY 2020: 1) Support for Demonstration Research, 2) Support for Improvement Research, 3) Support for Research to Confirm Effectiveness, and 4) Support for Basic Research.</u> The University has been putting effort into increasing the number of medical URAs and strategically assigning them to schools/offices with the aim of securing external funding. Consequently, the University was able to secure the preceding external funding thanks to the fact that URAs were able to help it in the following ways: 1) identify the University's research seeds, which is the basis of URAs' activities; 2) select relevant researchers; and 3) publicize the University's research results.</li> </ul>
	Medium-term goal [9]		Improve research management functions so that research activities can be properly evaluated and support can thereby be optimally provided to areas of priority.
		Medium-term plan [23]	Allocate researchers to areas that need to be prioritized by properly evaluating research activities and deciding which areas the University should prioritize based on the University's Achievement-motivated Key Performance Indicator (AKPI®), which evaluates instructors individually and monitors the University's performance in education and research.
		AY 2020 plan [23]	Continually evaluate the University's research activities to identify the research areas that need to be prioritized so that the University can assign more researchers and other staff to them.

	Implementation status	<ul style="list-style-type: none"> <li>• Based on the areas it decided to prioritize, the University selected four researchers to be trained in the first phase of the Home for Innovative Researchers and Academic Knowledge Users Driving Global Impact (HIRAKU-Global) project. In addition, the University accumulated the research achievements of the four researchers to be trained in the first phase, using the HIRAKU-Global PF, which is a core IT system, and analyzed and examined the evaluation indexes of young researchers.</li> <li>• Using its AKPI® and other indicators, the University evaluated the research activities that incubation research centers and centers of excellence conducted in areas the University decided to strategically prioritize.</li> <li>• <u>To create new research areas in collaboration with other institutions and cultivate next-generation research leaders able to responsibly conduct research activities in new areas, the Hiroshima University-RIKEN Joint Research Center, a collaborative research center, conducted open recruitment for its matching fund, titled the “RIKEN-Hiroshima University Science and Technology Hub Joint Research Program.”</u> In addition, <u>the Hiroshima University Network for Education and Research on Peace and Sustainability (NERPS) assigned four international cross-appointment faculty members with research grants to areas the University decided to prioritize, creating opportunities for the four researchers and the University’s existing researchers to carry out interdisciplinary research.</u></li> </ul>
Medium-term goal [12]	Make the University more internationally recognized by thoroughly promoting internationalization, and by doing so, improve the quality of its education to globally competitive levels so that it can join the ranks of the world’s top 100 universities.	
	Medium-term plan [30]	Increase the percentage of international students to about 12% or more of all students by internationalizing degree programs and strengthening efforts being made overseas to recruit international students. In addition, to encourage Japanese students to study abroad, increase the percentage of Japanese students sent abroad to at least 8% of all students, and to do so, encourage students sent abroad on short-term programs, such as the Study Tour Abroad for Realization and Transformation (START) Program (study abroad experience for new students), to be sent abroad on long-term programs.
	AY 2020 plan [30]	Review last academic year’s measures aimed at attracting more international students, make changes to them as necessary, and increase the percentage of international students to a figure higher than that of the previous academic year. In addition, review the START program, make any changes needed to better respond to students’ needs, and increase the percentage of Japanese study-abroad program participants to a figure higher than that of the previous academic year.



<p style="text-align: center;">Implementation status</p>	<p>The University tried to increase the number of its study abroad programs while trying to ensure the quality of its programs. However, due to the significant impact of the spread of the new coronavirus infection, international students only accounted for 10.58% of all students (as of May 1, 2021), and the percentage of Japanese students sent abroad in AY 2020 only reached 2.38% (including online participation). (The status of individual projects and new measures against the novel coronavirus pandemic are described below.)</p> <p>i) Using and promoting the Japanese version of the BEVI test (BEVI-j; a cross-cultural adaptation aptitude test)  Because many universities requested objective measurements, quality assurance, and EBPM of education and study abroad programs, to create opportunities for output, the University held seminars by using such apps as Zoom (82 seminars [including two overseas Zoom seminars], welcoming about 1,000 participants from 500 universities, institutions, and companies [AY 2020]).  Consequently, <u>by the end of AY 2020, the BEVI-j test was adopted by 60 national, public, and private universities (41 universities in AY 2019), including 17, or about half, of the 37 universities selected as SGUs (in AY 2019, 14, or about 40%, of the universities selected as SGUs adopted the BEVI-j test), including the following: 1) the University of Tsukuba, 2) Sophia University, 3) Kansai University, 4) Soka University, 5) Kwansei Gakuin University, 6) Osaka University, 7) Kagoshima University, 8) Nagasaki University, 9) Okayama University, 10) Chiba University, and 11) Akita International University.</u>  In 2020, the University administered the BEVI-j test about 3,000 times to students participating in 17 e-START/COIL/Virtual Exchange (VE) programs—before and after the programs—and to all new students. Consequently, the University was able to do the following: 1) measure changes in the non-cognitive abilities/core competencies of students who participated in the COIL/VE programs before and after their dispatch and 2) conduct a comparative study of participating and non-participating students based on objective measurements. Furthermore, to examine whether the COIL/VE programs were able to help participants improve core competencies to expected levels and also improve the programs, the University analyzed the distribution of participants' BEVI-j test scores, organized analyses into evaluation reports, and sent them to all program supervisors.  The outcome was that the use and dissemination of the BEVI-j made the following possible: 1) objectively measuring the non-cognitive abilities/core competencies required of global human resources, which were unmeasurable by surveys; and 2) applying the measurement results to education (PDCA, educational intervention).</p> <p>ii) Promoting short-term study-abroad START programs  Regarding the study-abroad START Program and START+ Program—approximately two-week programs offered with help from the University's overseas partner universities—which aim to help students develop an interest in international exchange and long-term study-abroad programs by introducing them to cultures and environments other than those of Japan and providing them with opportunities to attend classes, interact with local students, and participate in discussions with them, in AY 2020, due to the influence of the novel coronavirus infection, the University had to cancel the programs as follows: 1) the programs scheduled for August to September had to be canceled in April and 2) the programs scheduled for February to March had to be canceled in August.  <u>Since the University could not send students overseas on the START/START+ Programs, the University newly developed an e-START Program, an online-tool-based international cooperative education program for exchange with faculty members and students of overseas universities, and started it on a trial basis in the second semester of AY 2020.</u> Seven courses were set up, welcoming 61 students of the University. Before having students participate in the course-based study with overseas universities, the University held five lectures (common core lectures) related to international exchange and study abroad. The lectures were combined with the course-based study to constitute a two-credit course. The e-START program will be expanded as a permanent program to be offered in AY 2021 and after, and in the future, the University plans to use online tools to provide all students who want to participate in the program with opportunities to interact with faculty members and students of overseas universities.  In addition, although the University does not know whether it will be able to implement the conventional START Program in AY 2021 since the program involves traveling abroad, the University is reviewing the implementation system by asking all members of the University to come up with new student dispatch plans so that the University will be able to implement an equivalent program that involves 300 students as did the START Program before the novel coronavirus pandemic.</p> <p>iii) Restructuring and expanding Morito Institute of Global Higher Education  Hiroshima University's Morito Institute of Global Higher Education 3 + 1 Program welcomes from countries worldwide senior undergraduate students looking to pursue a graduate school education and provides them with three terms of specialized education and Japanese language lessons so that they can meet their own university's criteria for being awarded a bachelor degree before subsequently proceeding to one of the University's graduate schools to develop into highly specialized experts in their field of interest. As a result of promoting substantial public relations activities, the number of international students participating in the Morito Institute of Global Higher Education 3 + 1 Program continued to increase until AY 2019. However, although 170 international students applied for the Morito Institute of Global Higher Education 3 + 1 Program in AY 2020 despite the influence of the novel coronavirus infection, due to the impact of waterfront measures, the number of participants only reached 43 (the number of participants in the following academic years were as follows: 26 in AY 2016, 90 in AY 2017, 146 in AY 2018, 159 in AY 2019, and 43 in AY 2020). In addition, after having completed the program, a good number of the senior-undergraduate participants generally enroll in a Master's program at the one of the University's graduate schools as follows: 15/24 in AY 2016, 30/63 in AY 2017, 50/105 in AY 2018, 56/133 in AY 2019 (as of the end of April 2021).</p>
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		<p>To create an organization that can function as a base for providing Japanese language and culture education, as well as an office for welcoming international students—through which this program could attract more international students—in October 2018, the University transformed its then International Center into the Hiroshima University Morito Institute of Global Higher Education, which has thereafter been putting effort into developing translation and interpretation training programs and also been welcoming various international students, including the following number of visually or hearing impaired students: 8 in AY 2017, 16 in AY 2018, 8 in AY 2019, and 0 in AY 2020 (due to the influence of the novel coronavirus infection).</p> <p>In addition, <u>to provide Chinese college students interested in the Japanese language and culture with an education that will improve their practical Japanese language skills and understanding of the Japanese culture, the University concluded a memorandum of understanding with China's Capital Normal University (December 1, 2020) on establishing a Hiroshima University Morito Institute of Global Higher Education in Beijing (April 1, 2021).</u></p> <p>iv) Promoting special Japanese language and culture training programs to attract international students          To attract international students interested in the Japanese language and Japanese culture, the University promoted approximately two-week long inbound programs designed to help participants deepen their understanding of the Japanese language and Japanese culture through classes taught on campus, interactions with Hiroshima University students, and visits to companies and other places in Hiroshima Prefecture. The University began offering these special training programs in AY 2010, and every year since then, it has been putting effort into increasing the number of program types and participants.          However, due to the influence of the novel coronavirus infection, welcoming students for training in the winter of AY 2019 and the summer of AY 2020 was impossible, and the training programs had to be cancelled. In the winter of AY 2020, the University newly developed online courses, offering three online courses, which were participated in by 171 students.</p> <p>v) Improving and expanding overseas bases          Although no new bases were established in AY 2020 due to the impact of the new coronavirus infection, the University discussed what kind of system would allow it to operate its overseas bases more strategically, including functional differentiation of bases (e.g., designating bases with the potential of serving as core centers in each region of the world as hub centers and prioritizing their development), redefinition of missions (e.g., defining the roles of bases in detail), and prioritization (e.g., selecting which regions and countries new bases should be established in).</p> <p>vi) Concluding interuniversity exchange agreements          Active efforts to conclude interuniversity exchange agreements with universities overseas increased the number of such agreements by 10, from 370 in AY 2019 to 380 in AY 2020. By actively increasing the number of its overseas partner universities, the University aims to stimulate interaction between its students and international students in various countries and also become able to serve as a hub for international joint research.          In addition, in October, the University reorganized its Organization for the Promotion of International Exchange and established a Globalization Organization Committee. The University also established a Globalization Strategy Subcommittee under the Globalization Organization Committee, which is discussing the possibility of concluding more strategic inter-university exchange agreements in the context of strategic international collaboration.</p> <p>vii) On-campus establishment of an overseas campus for Arizona State University (USA)          In July 2020, the University and Arizona State University (ASU) concluded a memorandum of understanding on the establishment of an Arizona State University/Thunderbird Global Management Graduate School—Hiroshima University Global School to offer a bachelor's degree education program focusing on global management education and sustainable business. <u>In August of the same year, the President of the University, the Minister of the U.S. Embassy in Japan, and representatives of ASU Thunderbird Global Management Graduate School paid a courtesy visit to Minister Hagiuda of the Ministry of Education, Culture, Sports, Science and Technology to inform the Minister of this matter, and in October, the University and ASU jointly established a campus for the Thunderbird Global Management Graduate School. This is the first case where a national university has set up a campus for an overseas university.</u> In addition, in October, the University and ASU Thunderbird Global Management Graduate School connected their classes online in real time. <u>The University expects the establishment of this global school to produce the following results: 1) contribution to the development of a global campus and management reform (the strengthening of the University's financial base and management capabilities) and 2) a ripple effect on regional development and revitalization of local communities through various forms of collaboration with local governments.</u></p> <p>viii) Promoting medium- and long-term student exchange programs          The University aims to promote various mid- to long-term student exchange programs that meet the needs and levels of students by offering its AIMS-HU Program, PEACE Student Exchange Program, and International Linkage Degree Program, which are term/semester-based student exchange programs specializing in specific countries/regions and fields of expertise, based on the following program and project: 1) the Hiroshima University Study Abroad (HUSA) Program, which allows students to take classes offered at overseas partner universities or member schools of the USAC or UMAP consortiums by studying abroad for one semester or one year; and 2) the Inter-university exchange project. Although most of the dispatch and acceptance programs involving travel to and from Japan had to be cancelled in AY 2020 due to the influence of the novel coronavirus infection, the University provided students who wanted to take classes offered by overseas universities where they were planning to study abroad with educational opportunities to participate in their classes online.</p>
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	<p>Although the University does not know whether it will be able to resume full-scale dispatch and acceptance of students under the preceding medium- to long-term student exchange programs in AY 2021, it will continue recruiting and selecting students to participate in the programs and also work on measures to deal with cases where students become unable to travel to and from Japan. In addition, by implementing the inter-university exchange project (Africa), adopted in AY 2020, in AY 2021, the University plans to start mutual mid- to long-term exchange programs with universities in Egypt, Zambia, and Malawi.</p>
Medium-term plan [31]	To respond to the advancement of globalization, take the following personnel deployment measures: 1) increase the percentage of instructors who hold international citizenship or have taught or conducted research abroad to about 47% of all instructors and 2) increase the percentage of staff members with international citizenship or international work experience to about 8% of all staff members.
AY 2020 plan [31]	To respond to the advancement of globalization, in accordance with the University's Teacher Deployment Policy, take the following personnel deployment measures: 1) increase the percentage of instructors who hold international citizenship or have taught or conducted research abroad to about 44.3% and 2) increase the percentage of staff members with international citizenship or international work experience to about 7.3% by employing international citizens or sending staff abroad for training.
Implementation status	<ul style="list-style-type: none"> <li>• The following personnel measures ① through ③ were implemented to respond to the advancement of globalization and the need to strengthen school/office functions. <ul style="list-style-type: none"> <li>① <u>Made all calls for job applicants open internationally</u> in order to recruit instructors with excellent teaching and research skills</li> <li>② <u>Continued to reserve positions for international applicants</u> under the newly submitted personnel deployment proposal and strategically offered 122 positions to employ globally competitive workers</li> <li>③ Revised the Teacher Deployment Policy to incorporate <u>short-term positions reserved for international instructors</u> and to help increase the University's research capacity and improve its international recognition, introduced five new positions.</li> </ul> </li> <li>• In particular, to promote globalization and the diversity environment of the University, in November, the University set up 62 posts for Assistant Professors (Special Appointment [who generally must be young, female, non-Japanese, and cross appointment personnel]), and by the end of March, the University concluded 49 cross appointment agreements.</li> <li>• As a result of the above efforts, as of May 1, 2021, the percentage of instructors who hold international citizenship or have taught or conducted research abroad increased by 1.8% compared to that of the previous academic year and reached 44.3%, achieving the target of 44.3%.</li> <li>• To increase the percentage of international faculty members, the above measures will continue to be taken and priority will be given to reserving employment seats for international faculty members.</li> <li>• Although the University planned to send the following number of staff members on the long-term overseas training programs provided below in order to increase the number of staff with overseas work experience, its plans had to be postponed until the next academic year due to the influence of the novel coronavirus infection: 1) one staff member on the Ministry of Education, Culture, Sports, Science and Technology's Long-term Educational Administrators Program (LEAP) and 2) two on an international academic exchange training program of the Japan Society for the Promotion of Science (JSPS). <u>The percentage of staff members with international citizenship or work experience increased by 0.2% compared to that of previous academic year, surpassing the target of about 7.3%, to 8%, as of May 1, 2021.</u></li> </ul>
Medium-term plan [32]	Increase the number of courses taught in foreign languages to about 30% of all courses in undergraduate and graduate school programs to improve the quality of education to meet international standards. In addition, to improve the Japanese language skills of international students so that they can deepen their understanding of the Japanese culture, offer improved Japanese language education by reorganizing the current curriculum in ways that will allow international students to take lessons tailored to the level of their Japanese language skills.
AY 2020 plan [32]	Increase the number of courses taught in foreign languages to about 30% of all courses in undergraduate and graduate school programs by increasing the number of courses taught in foreign languages. In addition, based on the improvement plan formulated in the previous academic year, offer new Japanese language classes tailored to the levels of international students' Japanese language skills. Furthermore, based on the increase in the number of international students and the results of the survey of students, verify the curriculum content and class organization and formulate an improvement plan.

	Implementation status	<ul style="list-style-type: none"> <li>• With graduate schools being reorganized, as it was doing in the previous academic year, the Headquarters for Education’s Academic Affairs Committee put effort into promoting the enhancement of programs completely comprising courses taught in English. Consequently, in AY 2020, the number of such programs increased by one to 74, and the number of participants in the FD program titled “Methods of Teaching in English,” which began being offered in AY 2016, totaled 387. As a result, <u>the percentage of courses taught in foreign languages as of the end of AY 2020 totaled 39.2% (6,328 courses/16,146 courses), surpassing the target of about 30%.</u></li> <li>• To help improve the level of Japanese language education overseas, the Hiroshima University Morito Institute of Global Higher Education aims to become a Japanese language and culture education base able to provide overseas Japanese language teachers with retraining programs (brush-up seminars). In AY 2020, as it did in the previous academic year, the Hiroshima University Morito Institute of Global Higher Education planned to offer its retraining program in May. However, due to the new coronavirus infection, welcoming teachers practically became impossible and the Institute had to cancel its retraining program.</li> <li>• The University provided international students with Japanese language education online to stimulate the restructuring of the Hiroshima University Morito Institute of Global Higher Education. To facilitate the smoother enrollment of international students in classes matching their Japanese language proficiency, in AY 2019, the University developed an online placement test system to assess such students’ proficiency before they arrived in Japan, and the first to be administered the test were those who arrived in April. In addition, user IDs for the Online Anytime Access Japanese Education (MyJT) system, developed around the end of AY 2016, were assigned to international students, with priority on securing as much time as possible for those indicated by the online placement test as being between the entry and intermediate levels in order to improve their Japanese language skills. Measuring international students’ Japanese language proficiency levels prior to their arrival in Japan helped the University smoothly implement its Japanese language education by enabling it to assign students to classes properly, provide them with useful instructions in advance, and help them improve their Japanese language skills through self-study before arriving in Japan. In AY 2020, 113 students, mostly international students who were diagnosed as being at levels 1 to 4 based on the online placement test, participated in MyJT. The University efficiently helped international students engage in independent Japanese language study by offering an additional learning tool that allows users to take e-learning courses.</li> </ul>
	Medium-term plan [34]	To help Japanese and international students develop the basic skills of international competitiveness by promoting daily cross-cultural exchange, encourage about 12% of Japanese students to live in shared dormitories with international students by the end of AY 2019.
	AY 2020 plan [34]	Verify the efforts made up until the previous academic year and make improvements as necessary.
	Implementation status	<ul style="list-style-type: none"> <li>• To encourage about 12% of Japanese students to live in shared dormitories with international students, the University continually put effort into the following: 1) improving the environment for welcoming international students, such as by increasing the number of international-student dormitories equipped with move-in and everyday life support functions; and 2) informing Japanese students of opportunities to share houses with international students.</li> <li>• In AY 2020, the University’s staff in charge of operating the international-student dormitory website conducted a survey on the status of website use and called for requests for improvement, and based on these efforts, the staff improved the contents of the website, such as by enabling checking whether recommended international-student apartments are available. The staff also improved the website in ways that will reduce the possibility that international students may make mistakes when filling out application forms.</li> <li>• <u>As of November 1, 2020, the percentage of Japanese students living in shared dormitories with international students totaled 14.6% (2,019/13,830), achieving the target in two consecutive academic years.</u></li> </ul>
	Medium-term goal [20]	Make organizational changes that strengthen the President’s leadership to enable the University to strategically distribute its resources by using its IR indicators.
	Medium-term plan [46]	Assign personnel strategically in ways that will strengthen the University’s education and research efforts, and to do so, develop a system that can centralize the management of instructor labor costs—currently managed by individual schools/offices—by using the University’s IR indicators, including the Achievement-motivated Key Performance Indicators (AKPIs), which show the faculty members’ levels of performance as instructors and researchers.
	AY 2020 plan [46]	Strategically assign personnel under the President’s leadership by using the University’s IR indicators, including the Achievement-motivated Key Performance Indicators (AKPIs®), which suggest faculty members’ levels of performance as instructors and researchers, and the Basic Effort Key Performance Indicators (BKPIs®). In addition, implement improvement measures that reflect the results of the previous academic year’s verification.

Implementation status	<ul style="list-style-type: none"> <li>Under the guidance of its Academy Council and the Central Personnel Committee, the University used its IR indicators—the Achievement-motivated Key Performance Indicators (AKPIs®), which show faculty members’ levels of performance as instructors and researchers, as well as the Basic Effort Key Performance Indicators (BKPIs®)—to assign personnel strategically and systematically from a University-wide perspective that transcends individual education and research organizations.</li> <li>In addition, it enhanced workforce diversity particularly by employing or cultivating talented young, female, and international instructors and also improved the balance of its academic ranks across different age groups particularly by appointing younger instructors as associate professors, lecturers, and assistant professors. Consequently, the percentage of young faculty members (under the age of 40) of all instructors who have been on the faculty since before the incorporation of national universities (instructors eligible for subsidies for severance pay) increased 2.3% compared to that of the previous academic year to 25.1%.</li> <li>Personnel requests from each school/office were deliberated by the Academy Council and the Personnel Committee, and 211 requests were strategically responded to.</li> <li>In addition, <u>the University implemented its University Promotion System</u>, which was introduced in AY 2019, <u>announcing 23 strategically decided promotions (comprising 17 school/office-recommended promotions and 6 self-recommended ones)</u>.</li> <li>Furthermore, to promote personnel policies that will steadily achieve the University's long-term vision and future plans, the University formulated the Basic Policy on Personnel Cost Management and Personnel Allocation for the Fourth Mid-term Target Period (approved by the Executive Board on July 28, 2020). In addition, to formulate its policy on what faculty member allocation measures to take in AY 2022, the University established a WG on Personnel Cost Management and Personnel Allocation for the 4th Mid-term Target Period, and the WG started considering strategic personnel allocation plans for the 4th mid-term target period. (Continually being considered in AY 2021)</li> </ul>
Medium-term goal [21]	Improve the faculty members’ international competitiveness to levels that will raise the quality of the University’s education and research efforts to internationally competitive levels.
Medium-term plan [47]	Improve the University’s chances of attracting more talented instructors from regions throughout Japan and around the world, and to do so, increase the percentage of instructors paid under the annual salary system to about 21% by promoting the elasticity of the human resources and salary system (e.g., the annual salary and cross-appointment systems).
AY 2020 plan [47]	Improve the University’s chances of attracting more talented instructors from regions throughout Japan and around the world, and to do so, increase the percentage of instructors paid under the annual salary system to about 20% by promoting the elasticity of the human resources and salary system (e.g., the annual salary and cross-appointment systems).
Implementation status	<ul style="list-style-type: none"> <li>The new annual salary system, which is one of the measures for personnel and salary management reform, was reviewed based on the draft evaluation criteria reviewed by the P-I Detailed Study WG. The reviewed draft was reported at the Dean/Director meeting for exchanging opinions, held in November, and a university-wide briefing was held in Japanese in December and in English in January. After exchanging opinions at the Round-table Meeting of the Executive Board in March 2021 on the results of the discussion held at the university-wide briefing, which reflected everyone’s opinions (including the introduction of a PI standard table and when to start reflecting the PI standards in salaries), a report on the direction in which reconsideration will be made was submitted to the Executive Board on March 22, 2021. The percentage of instructors paid under the annual salary system, including special appointment instructors, increased by 5.6% compared to that of the previous academic year to 26% as of March 31, 2021, far surpassing the target of 20%.</li> <li>To promote cross appointments between the University and institutions overseas, the University decided to generally conclude all labor-cost point-based employment contracts with short-term international instructors under the cross-appointment system. Consequently, the number of such instructors totaled 78, comprising 58 overseas- and 20 domestic-institution contracts, as of March 31, 2021, surpassing the previous year’s 22 (which comprised 16 domestic- and 6 overseas-institution contracts).</li> <li>To promote the application of the cross-appointment system with private companies, the University considered how it should reflect the work efforts made at the University and the counterpart institution in workers’ salaries. Accordingly, <u>the University amended its regulations so that when workers’ total salaries at the University and the counterpart institution, based on work efforts, is greater than their normal salary at the University, the University could pay the difference as a cross-appointment allowance (the regulations came into effect on April 1, 2021)</u>.</li> </ul>
Medium-term plan [48]	Invigorate the University’s education and research efforts by offering more positions, strategically including tenure-track ones reserved for talented young instructors (under the age of 40), and by doing so, increase the percentage of such instructors to 34%.
AY 2020 plan [48]	Invigorate the University’s education and research efforts by instituting measures in accordance with its Teacher Deployment Policy to employ more talented young instructors (under the age of 40) and thereby increase the percentage of such instructors to 33% (including 21.8% eligible for subsidies for severance pay).

	Implementation status	<ul style="list-style-type: none"> <li>• <u>To invigorate its education and research efforts, as well as the academic world in general, by employing young instructors and helping them grow, the University has a number of positions reserved under the job title “Assistant Professor Trainee” (35 years of age and younger), and in AY 2020, it employed 42 assistant professor trainees and screened 55 applicants for such positions to be taken up in AY 2021.</u></li> <li>• In particular, to promote the diversity environment of the University in terms of age structure by achieving the target number of young faculty members in the 3rd mid-term target period, in November, the University set up 62 posts for Assistant Professors (Special Appointment [who generally must be young, female, non-Japanese, and cross appointment personnel]), and by the end of March, the University concluded 49 cross appointment agreements.</li> <li>• As part of the Ministry of Education, Culture, Sports, Science and Technology's Scientific Technology Human Resource Cultivation Consortium Development Project, in AY 2020, the University employed six young instructors and also announced one open call for employing an instructor to join in AY 2021. (Application of the tenure track system)</li> <li>• In AY 2020, the University used the Ministry of Education, Culture, Sports, Science and Technology's Leading Initiative for Excellent Young Researchers (LEADER) program to hire two researchers. (Application of the tenure track system)</li> <li>• Consequently, the percentage of full-time instructors serving in tenure track positions increased (by 2.7% compared to that of the previous academic year) to 20.4%, as of March 31, 2021.</li> <li>• In addition, as of March 31, 2021, the percentage of young faculty members (under the age of 40) of all full-time faculty members increased by 3.9% compared to that of the previous academic year to 28.6%. Although the preceding percentage did not reach its target of 33%, the percentage of instructors eligible for subsidies for severance pay increased by 2.3% compared to that of the previous academic year to 25.1%, surpassing the target of 21.8%.</li> <li>• To achieve its medium-term goal, the University will make the following efforts.             <ul style="list-style-type: none"> <li>① More assistant professor trainees will be employed.</li> <li>② About 70% of new employment opportunities will be reserved for instructors under the age of 40.</li> <li>③ Hiroshima University Hospital will increase the number of its assistant professor trainee positions.</li> <li>④ Under the University's unified decision-making system for the employment and assignment of teachers and in accordance with the University's Teacher Deployment Policy, priority will be given to teacher deployment requests that require handing over positions to young instructors, and measures will be taken to ensure for them medium- to long-term employment by guaranteeing employment under the University's tenure-track system (term: 5 to 7 years).</li> </ul> </li> </ul>
Medium-term goal [23]		Promote a better work-life balance for faculty and staff, and actively promote women to decision-making positions in University management.
Medium-term plan [51]		Increase the percentage of female teachers and managers to about 20% each by employing measures to promote active female faculty/staff workforce participation.
AY 2020 plan [51]		Employ measures in accordance with the Teacher Deployment Policy to increase the percentage of female instructors to about 18.8% and female managers to about 18%, thereby promoting active female faculty/staff workforce participation.



	<p>Implementation status</p>	<ul style="list-style-type: none"> <li>• Recognizing the importance of employing female instructors as one of its deployment policies on securing diverse workers, under the University’s unified decision-making system for the employment and assignment of teachers, the University continued to reserve positions for female instructors under the newly submitted personnel deployment proposal, and it strategically offered 96 positions. In addition, as part of the Ministry of Education, Culture, Sports, Science and Technology’s Scientific Technology Human Resource Cultivation Consortium Development Project, the University continued to publicly offer positions reserved for female instructors.</li> <li>• In particular, to promote the diversity environment of the University in terms of gender structure by achieving the target number of female faculty members in the 3rd mid-term target period, in November, the University set up 62 posts for Assistant Professors (Special Appointment [who generally must be young, female, non-Japanese, and cross appointment personnel]), and by the end of March, the University concluded 49 cross appointment agreements.</li> <li>• As a result of the above efforts, <u>as of March 31, 2021, the percentage of female faculty members increased by 2.8% compared to that of the previous academic year to 20.8%, achieving the target of about 18.8%.</u></li> <li>• The percentage of female managers, as of March 31, 2021, increased by 0.9% compared to that of the previous academic year to 18.2%, achieving the target of about 18%.</li> <li>• The University announced its interest in using the Career Advancement Project (CAP)’s Research Fellow Program—offered by the Ministry of Education, Culture, Sports, Science and Technology as part of its Initiative for Creating More Diversified Research Environments (Pioneering) Project—to employ female researchers with PhDs and in need of employment as full-time researchers. In addition, the University announced its interest in using the CAP’s Research Fellow Program to encourage researchers who may have had to retire due to their spouse’s work to resume their own careers, and it requested its faculty members to inform it if their spouse fits the above description, offering to employ him/her as a part-time researcher. As a result, the University decided to hire one full-time researcher and two part-time researchers in the next academic year.</li> <li>• In accordance with the stipulations in the Hiroshima University Gender Equality Declaration, which specifies one of its basic action plans as being “promotion of gender equality in the decision making process regarding administration of the University,” the University kept track of the number of female members participating in each of its meetings, committees, boards, and councils, announced them on the Gender Equality Promotion Office’s website, and instructed the Chairs of those meetings, committees, boards, and councils to ask more female faculty and staff members to join their organizations in AY 2021.</li> <li>• Due to the reorganization of graduate schools and the impact of the new coronavirus, the number of faculty meetings the University was able to hold decreased, resulting in a decrease in the participation of women in decision-making processes at schools/offices. Therefore, the University increased the number of female Board of Representatives of each graduate school, raising the percentage of female members from 7.3% to 14.4%.</li> <li>• Individual exchanges of opinions were held between the Executive Directors (in charge of Kasumi Campus, Faculty Personnel, and Public Relations) and 38 researchers (22 women and 16 men). In addition to raising its faculty members’ awareness of the importance of being promoted to higher positions and improving their research capabilities, the University also searched for talented personnel.</li> <li>• To provide faculty members and students with role models for considering career paths as researchers and to raise their awareness, the University posted articles on the careers of researchers (one male and one female) and a female manager (one person) on its website (total number of articles posted: 23 on researchers and eight on female managers).</li> <li>• To expand the base of female researchers, on November 28, with cooperation from the School of Informatics and Data Science, the University held its 20th hands-on science lecture for female high school students, welcoming 30 participants.</li> <li>• At the Personnel Committee meeting held in October 2020, based on the results of the deliberation of the Academy Council, committee members approved of the promotion of three people to positions reserved for women only and reported their decision at the Executive Board meeting (held in November 2020).</li> </ul>
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○ Details of individual items

I Business operation and financial status

(1) Business operation improvement and optimization goals

① Organizational management improvement goals

Medium-term goals	<p>[19] Maximize the strengths and features of the University to develop an effective and transparent administrative system that will maximize its education and research functions.</p> <p>[20] Make organizational changes that strengthen the President's leadership to enable the University to strategically distribute its resources by using its IR indicators.</p> <p>[21] Improve the faculty members' international competitiveness to levels that will raise the quality of the University's education and research efforts to internationally competitive levels.</p> <p>[22] Have staff members develop expertise that will enable them to provide faculty members with greater help for their education and research efforts</p> <p>[23] Promote a better work-life balance for faculty and staff, and actively promote women to decision-making positions in University management.</p>
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Medium-term plan	Annual plan	Progress
[44] Gain a broad perspective from which to autonomously improve business operations, and to do so, seek help from external members of the Administrative Council, including international council members, by asking them to share their ideas on the University's operations; subsequently, before incorporating council members' ideas into the University's operations, present them to the President and the University's Deans/directors for screening.	[44] Ask external stakeholders (including at least one external member of the Administrative Council) to share their ideas on the University's operations and present their ideas to the President and Deans/Directors for screening before incorporating them into the University's operations, and also seek help from the University's third-party Evaluation Committee in asking Deans/Directors for assessments of progress made at their schools/offices in resolving issues underlying them for increasing the effectiveness of its PDCA cycles.	III
[45] Take the following actions to strengthen the University's governance system: 1) Review and revise the University's decision-making process; and 2) have the President and auditors regularly hold meetings to enhance communication between themselves and thereby ensure the independence of auditors, investigate the reliability of the auditor support system, and strengthen the functions of auditors.	[45] Examine the functions of the University's operational organizations, and to strengthen its governance system, revise the functions as necessary. In addition, have the President and auditors regularly meet to apply audit report results to the University's operations, ensure the independence of auditors, investigate the reliability of the auditor support system, and make changes as necessary.	III
[46] Assign personnel strategically in ways that will strengthen the University's education and research efforts, and to do so, develop a system that can centralize the management of instructor labor costs—currently managed by individual schools/offices—by using the University's IR indicators, including the Achievement-motivated Key Performance Indicators (AKPIs), which show the faculty members' levels of performance as instructors and researchers.	[46] Strategically assign personnel under the President's leadership by using the University's IR indicators, including the Achievement-motivated Key Performance Indicators (AKPIs®), which suggest faculty members' levels of performance as instructors and researchers, and the Basic Effort Key Performance Indicators (BKPIs®). In addition, implement improvement measures that reflect the results of the previous academic year's verification.	III
[47] Improve the University's chances of attracting more talented instructors from regions throughout Japan and around the world, and to do so, increase the percentage of instructors paid under the annual salary system to about 21% by promoting the elasticity of the human resources and salary system (e.g., the annual salary and cross-appointment systems).	[47] Improve the University's chances of attracting more talented instructors from regions throughout Japan and around the world, and to do so, increase the percentage of instructors paid under the annual salary system to about 20% by promoting the elasticity of the human resources and salary system (e.g., the annual salary and cross-appointment systems).	III
[48] Invigorate the University's education and research efforts by offering more positions, strategically including tenure-track ones reserved for talented young instructors (under the age of 40), and by doing so, increase the percentage of such instructors to 34%.	[48] Invigorate the University's education and research efforts by instituting measures in accordance with its Teacher Deployment Policy to employ more talented young instructors (under the age of 40) and thereby increase the percentage of such instructors to 33% (including 21.8% eligible for subsidies for severance pay).	III

<p>[49]          Improve human resources by employing, transferring, promoting, and training personnel based on a staff cultivation plan designed with the aim of achieving the following goals: 1) increase the University's potential to carry out work by clarifying the knowledge and skills required at each of its offices and training staff members based on that information, 2) motivate workers by clarifying career paths and promotion criteria, and 3) increase the staff's productivity potential by providing members with opportunities to experience the handling of difficult work.</p>	<p>[49]          Improve human resources by employing, transferring, promoting, and training personnel, based on the staff cultivation plan.</p>	<p>III</p>
<p>[50]          Create a workplace environment that promotes a good work-life balance by making the University's support systems widely known among the faculty/staff through seminars, and also seek approval by the end of AY 2019 for the University's (third-term) General Business Owner Action Plan under the Act on Advancement of Measures to Support Raising Next-Generation Children.</p>	<p>[50]          To maintain a workplace environment that encourages faculty and staff to have a good work-life balance by using its support systems, continue to conduct surveys on the use of the University's support systems. Since the (third-term) General Business Owner Action Plan needs to be submitted for approval during AY 2020 due to the conditions for approval being revised, submit the University's (third-term) General Business Owner Action Plan for approval in accordance with the Act on Advancement of Measures to Support Raising Next-Generation Children.</p>	<p>III</p>
<p>[51]          Increase the percentage of female teachers and managers to about 20% each by employing measures to promote active female faculty/staff workforce participation.</p>	<p>[51]          Employ measures in accordance with the Teacher Deployment Policy to increase the percentage of female instructors to about 18.8% and female managers to about 18%, thereby promoting active female faculty/staff workforce participation.</p>	<p>III</p>

**I Business operation and financial status**  
**(1) Business operation improvement and optimization goals**  
**② Education and research organization improvement goals**

Medium-term goals	[24] Identify the trends and social needs of 18-year-olds and then, based on these, reorganize the University’s education and research organizations in ways that will strengthen the University’s functions and enable it to maximize its capabilities and strengths.
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Medium-term plan	Annual plan	Progress
<p>[52] Identify social needs and then, based on them and the University’s redefined mission statement, promote education and research in ways that maximize the University’s capabilities and strengths, reorganize its education and research organizations, and reset its enrollment limits by detaching teachers’ organizations from education and research organizations so as to reorganize them into a flexible association that will enable strategic assignment of teachers to areas that the University has decided to prioritize.</p>	<p>[52] Maximize the University’s capabilities and strengths to further consider its plan aimed at establishing the Graduate School of Future Cutting-edge Science (i.e., an education and research organization able to also serve as a center for coordinating cross-graduate school programs) and resetting enrollment limits. In addition, establish the Graduate School of Humanities and Social Sciences and the Graduate School of Advanced Science and Engineering—education and research organizations aiming to strengthen the University’s functions of offering humanities and social science programs, science programs, engineering programs, and interdisciplinary programs.</p>	III
<p>[53] Establish education and research organizations that maximize the University’s proven, unique life and biological education and research resources.</p>	<p>[53] Establish a system to verify the programs of the Graduate School of Integrated Sciences for Life and the Graduate School of Biomedical and Health Sciences after the graduate schools welcome students every year to programs that are offered.</p>	III
<p>[54] Reorganize the Graduate School of Education by the end of AY 2016 to include a new program titled the “Professional Development Program for Teachers and School Leaders” to respond to present-day educational issues, including those underlying teacher training programs and the demand for various workers. In addition, after the school welcomes students to the program, evaluate it by comparing students’ achievements with the program’s originally set objective criteria, including the goals described in its curriculum, the type of people it promises to cultivate, and the graduate employment rate.</p>	<p>[54] Take the following action in accordance with the Professional Development Program for Teachers and School Leaders’s self-evaluation accreditation report and the Institute for the Evaluation of Teacher Education’s certified evaluation results, which were produced in the previous academic year: 1) develop strategic measures to maintain and improve the educational quality of the Professional Development Program for Teachers and School Leaders and 2) help it continue developing uniquely.</p>	III

**I Business operation and financial status**  
**(1) Business operation improvement and optimization goals**  
**③ Office work optimization and rationalization goals**

Medium-term goals	[25] Optimize and rationalize office work by reexamining organizations and business systems, and also help staff members improve their skills.
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Medium-term plan	Annual plan	Progress
[55] Take the following actions to optimize and rationalize office work: 1) regularly reexamine organizations and business systems; 2) perform maintenance of ICT systems, including gathering data stored in multiple systems in one place and improving the University's online application system; and 3) help staff members improve their skills by providing them with work-related training and role-based training.	[55] Reexamine education and research organizations and business systems and improve ICT systems as necessary. In addition, recheck whether the University's centralized system under which its data, including its business systems, are managed is working to its advantage and improve the system as necessary. Furthermore, to help staff improve their skills, offer various work-related and role-based training programs.	IV



(1) Points to note regarding efforts put into improving and optimizing business operations

**Strengthening governance**

i) Organizational management improvement efforts [Project No. 44]

- To help schools/offices identify and resolve underlying issues and thereby enhance the quality of their education and research efforts in ways that will strengthen their features and characteristics, as it has been doing every year since AY 2008, the University asked external stakeholders (including at least one external member of the Administrative Council) to assess its schools/offices. After receiving the Administrative Council's assessment, the University's Evaluation Committee performed a follow-up third-party evaluation of progress made by schools/offices in resolving underlying matters, helping the University increase the effectiveness of its PDCA cycles.
- In 2020, the University had its undergraduate education evaluated and received advice on how it could develop its features and characteristics and also resolve its issues (89 suggestions). Subsequently, the University had its schools/offices consider how it should respond to the advice and suggestions it received. Here is an example of how the University made improvements based on the advice and suggestions it received. The School of Law, which received a suggestion that it should offer classes taught by business representatives of private companies, made eight improvements, including the decision to begin offering the following courses in AY 2021: 1) Fukushima Reconstruction and 2) NHK Theory.
- To reflect constructive opinions from students in the management of the University, the University held an opinion exchange meeting between external Administrative Council members and second- and third-year undergraduate students under the theme of "Proposals for post-coronavirus and 'with-corona' times from the viewpoint of students after experiencing online classes." Students offered 45 opinions, and schools/offices subsequently discussed how they would respond to them. Here is an example of how student opinions were reflected in the management of the University. Regarding the University's study abroad system, in the second half of AY 2020, the University introduced the e-START/e-START+ programs, which are online international exchange education programs that do not involve travel. In addition, the University created an environment for offering online orientation camps hosted by its undergraduate schools.

ii) Reviewing and improving the University's management system [Project No. 45]

[Reviewing the University's management system]

To strengthen its educational and research capabilities and corporate management, the University reviewed its management system under the leadership of the President.

- Two external people with outside experience in industries and other educational and research institutions were appointed as part-time Executive Directors.
- To improve university-wide common education and foreign language education, stably operate the Academy, enhance IR functions, and promote diversity, the University newly appointed people to the following positions: 1) Vice Presidents each in charge of "University-wide Education," "Global Education," "Academia-Government-Industry Collaboration," the "Academy of Hiroshima University," "Information and Institutional Research," "Equity, Diversity and Inclusion," "Fields of Humanities and Social Sciences," and "Fields of

Advanced Science and Engineering" and 2) a Senior Vice President in charge of the "Hiroshima University Hospital."

- To promote globalization in education and research, the University appointed an international faculty member as Vice President.
- To promote female participation in the decision-making process of the University's administration, the University appointed one female Executive Vice President and two female Vice Presidents (one of whom is the aforementioned international faculty member).

[Strengthening the University's IR function]

On June 1, 2020, the University established an IR Division for the following purposes: 1) gather, analyze, and visualize a variety of internal and external data and 2) strengthen functions that support efficient university management and decision-making.

[Developing an auditor support system]

To support the independence of the auditors who audit the operations of the University and to enable the auditors to perform their auditing duties fully and appropriately, on April 1, 2021, the University established the Auditor Management Support Office and assigned staff as necessary to improve its auditor support system.

[Strengthening the governance system]

As part of its efforts to strengthen its governance system, the University established the following contact points not only within the University but also at a law firm outside the University on February 1, 2021, as a mechanism for reporting facts that violate compliance or may lead to such violations: 1) whistleblowing in the public interest, 2) reporting misuse of research funds, and 3) reporting misconduct relating to research activities.

iii) Efforts to review the University's overall organization and operations [Project No. 55]

To generally eliminate the need for seals and thereby improve operations in ways that will allow doing business online, after conducting a survey of ① tasks requiring a private seal for internal and external application procedures and ② tasks requiring an official seal for internal and external application and submission procedures, the University decided to eliminate the use of seals in principle for internal procedures and to eliminate the use of seals in principle for external procedures other than those required by laws and regulations or external organizations.

[Results of the survey of internal procedures]

Of the 517 cases surveyed, 435 were reviewed, of which 360 (69.6%) were abolished and 75 (14.5%) were switched to handwritten signatures.

[Results of the survey of external procedures]

Of the 499 cases surveyed, 104 were reviewed and abolished. In addition, the University decided to make any changes as appropriate if laws and regulations or external organizations come to require making any changes in the future.

Furthermore, the University revised its employment regulations to allow telework from home and prepared policies to introduce digitalization and paperless operations in AY 2021 through the following means: 1) an electronic approval process, 2) RPA (mechanization and automation of

operations), 3) electronic payroll statements, and 4) online application for year-end adjustments.

- iv) Strategic on-campus resource allocation [Project No. 46]  
Refer to Highly strategic and ambitious objectives and plans on pp. 38 and 39.
- v) Attracting diverse and talented personnel [Project No. 47]  
Refer to Highly strategic and ambitious objectives and plans on p. 39.
- vi) Expanding the playing field of talented young faculty members throughout the University [Project No. 48]  
Refer to Highly strategic and ambitious objectives and plans on pp. 39 and 40.

#### **Human resource development of staff members**

- i) Staff international competitiveness improvement efforts [Project Nos. 49, 55]
  - To improve the percentage of staff members with English proficiency qualifications, such as TOEIC scores of 800 or higher, to 20% by May 1, 2023, and thereby increase their international competitiveness as part of the Ministry of Education, Culture, Sports, Science and Technology's Super Global University Creation Support Project, which the University was selected as a participant in AY 2014, the University offered skill development training programs (online English conversation) and foreign language training programs (TOEIC preparation). Consequently, the percentage of staff members with TOEIC scores of 800 or higher reached 17.1% as of March 31, 2021.
- ii) Staff development plan implementation efforts [Project No. 49]
  - To identify and employ people who truly want to work at Hiroshima University and who have diverse perspectives, since AY 2013, the University has been administering an original staff employment examination, in addition to the Standardized National-University-Staff Employment Examination. In AY 2020, the University revised its interview evaluation form so that it could evaluate whether applicants had the aptitude needed to join the University's staff and were adaptable, and consequently, the University hired six diverse personnel, including former teachers.

#### **Promotion of work-life balance**

- i) Diversified research environment creation efforts [Project No. 50]
  - The University submitted a General Business Owner Action Plan (for the third term) to the Labour Bureau for approval under the Act on Advancement of Measures to Support Raising Next-Generation Children.
  - Since elementary schools were all closed at once due to the need to prevent the spread of the novel coronavirus infection, the University offered temporary afterschool childcare services for schoolchildren in the Higashi-Hiroshima area (welcoming 17 children between April 16 and April 21) and the Hiroshima area (welcoming 208 children between April 15 and June 5).
  - During the Common Test for University Admissions, the University offered afterschool childcare services for schoolchildren in the Higashi-Hiroshima area (welcoming three children between January 16 and January 17) and also offered temporary childcare services at

Himawari Nursery School in the Higashi-Hiroshima area, welcoming one child on January 17. (There was no need for such services in the Hiroshima area).

- As support for foreign guardians using on-campus childcare facilities (Himawari Nursery School and Cosmos Nursery Room) and afterschool childcare services, the University translated the following guides into English: 1) the procedural guide for free-of-charge early childhood education and childcare and 2) the User's Guide for afterschool childcare services.
- To prevent the spread of the new coronavirus infection by having contractors managing the on-campus childcare facilities (Himawari Nursery School and Cosmos Nursery Room) implement monthly PCR testing of employees, the University developed a flow chart showing how to respond if any employees test positive (and began implementation in February 2021).
- Individual exchanges of opinions were held between the Executive Directors (in charge of Kasumi Campus, Faculty Personnel, and Public Relations) and 38 researchers (22 women and 16 men). To raise awareness and provide information, the Executive Directors interviewed researchers on the following matters: 1) career paths, 2) research environments, 3) work-life balance, and 4) use of the University's support system for balancing work and life.
- On February 18, 2021, the Gender Equality Promotion Office and the Initiative for Realizing Diversity in the Research Environment (Collaboration Type) co-organized a seminar on the theme of "Thinking about Work-life Balance," welcoming 49 participants, including the University's faculty members and students and members of the Industry-Academia-Government Council on Promoting Diversity. To deepen awareness of the need to review work styles, create a comfortable work environment, and raise awareness, two lecturers, who promote gender equality from male perspectives, were welcomed from the Chugoku region (a professor at the Prefectural University of Hiroshima and a Chugoku region representative of the NPO Fathering Japan).
- The University continued to appoint research assistants to help its researchers balance research with life events and hired 10 research assistants.
- To promote the University's work-life balance support system and create a comfortable work environment, the University revised its leave system for part-time contract employees, making the following types of leave, which had been unpaid leave, paid leave: 1) nursing care leave, 2) leave to attend the birth of a child, 3) leave to care for a child immediately after birth, 4) leave to take a child to and from a nursing room or nursery, 5) leave for pregnancy checkups, and 6) leave to maintain the health of the mother and fetus.

- ii) Efforts to appoint female managers [Project No. 51]  
Refer to Highly strategic and ambitious objectives and plans on pp. 40 and 41.

## Reviewing education and research organizations

i) Education and research organization improvement efforts [Project No. 52 & 53]

To respond to diverse social needs, after reviewing in April 2020 graduate-school functions and enrollment limits and assigning instructors strategically, under its unified decision-making system for the employment and assignment of teachers, to areas that it had decided to prioritize based on its Achievement-motivated Key Performance Indicators (AKPI®), which show the level of performance of faculty members as instructors and researchers, as well as an IR-indicator-based analysis, the University established the following graduate schools for the following reasons: the Graduate School of Humanities and Social Sciences, to strengthen its functions of offering humanities and social sciences programs, as well as interdisciplinary programs; and the Graduate School of Advanced Science and Engineering, to do the same with its science and engineering programs.

The Graduate School of Humanities and Social Sciences fosters human resources who can create the human world of the future in collaboration with specialists in other fields, including natural and life sciences, with a deep insight into people and society, a strong interest in fields other than their own, with the two missions of 1) pursuing various sciences for people and society and 2) building a sustainable and peaceful world through education.

The Graduate School of Advanced Science and Engineering fosters human resources who not only have a vast and deep knowledge but also the ability to understand and integrate multiple fields in science, engineering, information science, and related research areas with a high level of expertise at the core as leaders of the next generation able to responsibly promote world-class academic research and create innovation.

In addition, in October 2020, the University established the following programs, which became the University's first joint degree programs: 1) The Joint International Master's Program in Sustainable Development (Hiroshima University – University of Graz and 2) The Joint International Master's Program in Sustainable Development (Hiroshima University – Leipzig University).

The Joint International Master's Program in Sustainable Development (Hiroshima University – University of Graz), established in the Graduate School of Humanities and Social Sciences, aims to cultivate human resources of the following type: 1) has the ability to conduct research and practical work on urgent regional and global issues to help achieve the SDGs, especially poverty reduction, by taking social science approaches based on the theory of international cooperation in development studies; 2) has high communication skills to collaborate with others at universities, research institutes, governments and international organizations, private companies, and NGOs; and 3) has high employability in the international labor market.

The Joint International Master's Program in Sustainable Development (Hiroshima University – Leipzig University), established in the Graduate School of Advanced Science and Engineering, aims to cultivate human resources of the following type: 1) has the ability to conduct research and practical work on urgent regional and global issues to help achieve the SDGs, especially development issues centering on environmental issues associated with rapid urbanization in developing countries, by taking science and engineering approaches based on sustainable development theory in environmental studies; 2) has high communication skills to collaborate with others at universities, research institutes, governments and international organizations, private companies, and NGOs; and 3) has high employability in the international labor market.

In addition, in preparation for the 4th mid-term target period, the University prepared a document titled “Development of the Graduate School Educational Organization of Hiroshima University in the 4th Mid-term Target Period,” and on September 15, 2020, Deans/Directors held an opinion exchange meeting to exchange opinions on the document. Based on the preceding meeting, at another meeting held on the same day by the Education and Research Council, council members decided to establish an Educational New Degree Program Concept Review Committee.

In addition, since the Graduate School of Integrated Sciences for Life and the Graduate School of Biomedical and Health Sciences, which were established in April 2019, will be graduating their master's program students in March 2021, to monitor whether students developed into the targeted types of people and whether the graduate schools' three policies were met, the Graduate School of Integrated Sciences for Life and the Graduate School of Biomedical and Health Sciences set evaluation items in the Self-Inspection and Evaluation Committee and the Dean's Office Meeting and Board of Education, respectively.

As described above, the University is promoting a review of its education and research organizations to maximize its capabilities and strengths.

ii) Efforts put into establishing and subsequently verifying the Professional Development Program for Teachers and School Leaders [Project No. 54]

To maintain and improve the level of educational activities and promote the unique development of the Professional Development Program for Teachers and School Leaders (Graduate School of Education), the University has formulated and partially implemented the following strategic measures.

- ① The University conducted New Public Relations Activities Using Online Systems, including the creating of public relations videos and holding online (TV conference system and on-demand) information sessions to publicize the Program's human resource development efforts and educational activities.
- ② The University implemented a Practical Skills Improvement Project aimed at enhancing the practical educational skills of graduate students and helping undergraduate students understand the educational activities of the Program.
- ③ In addition to visiting schools or other workplaces where graduates are employed to interview them and conduct surveys as it does every year, the University implemented a project titled “Improving Educational Activities Based on a Follow-up Survey of Graduates,” where the University conducted a follow-up survey of graduates after the passing of three years since graduation to verify the results of the Program's educational activities and make improvements.
- ④ To contribute to the development of school leaders in Hiroshima Prefecture and further improve the education and research activities of the Program, the University collaborated with the Hiroshima Prefectural Board of Education, the Higashi-Hiroshima City Board of Education, and other city and town boards of education in implementing a project titled “School Leader Development Training Based on Cooperation with Educational Administrative Organizations.”

**I Business operation and financial status**  
**(2) Financial status improvement goals**  
**① External research funding, donation collection, and other goals for increasing income**

Medium-term goals	[26] Strengthen the University's financial base so that it can maintain the quality of its education and research at a level internationally expected of comprehensive research universities.
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Medium-term plan	Annual plan	Progress
<p>[56]            Increase the average amount of external funding secured by each instructor to about 1.5 times that secured at the end of the second medium term, and to do so, examine domestic and international trends of competitive funding and then develop a more effective strategy for securing external funding.</p>	<p>[56]            Examine the University's performance of securing external funding in the previous academic year, as well as domestic and international trends of competitive funding, and based on that examination, review the University's plan for securing funding.</p>	IV
<p>[57]            Regularly examine whether donation methods and public relations efforts are producing the desired effects, and based on that examination, improve strategies for attracting funding to continue the expansion of the Hiroshima University Fund.</p>	<p>[57]            To expand the Hiroshima University Fund, review the new recruitment strategy and verification method formulated in the previous academic year as necessary.</p>	IV

<b>I Business operation and financial status</b> <b>(2) Financial status improvement goals</b> <b>② Cost control goals</b>
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Medium-term goals	[27] Visual financial indicators to efficiently reduce administrative expenses.
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Medium-term plan	Annual plan	Progress
[58] Perform financial analyses of individual segments, and based on those analyses, set the reduction goal of the budget for back-office consumables costs at about -2% of those incurred last academic year to encourage staff to regularly put effort into reducing the general and administrative expense rate.	[58] Perform financial analyses of individual segments, and based on those analyses, set the reduction goal of the budget for back-office consumables costs at about -2% of those incurred last academic year to encourage staff to put effort into reducing the general and administrative expense rate.	III



**I Business operation and financial status**  
**(2) Financial status improvement goals**  
**③ Asset management goals**

Medium-term goals	[28] Maximize the use of assets (i.e., facilities, equipment) from a University-wide perspective and regularly reexamine whether assets are used to the full.
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Medium-term plan	Annual plan	Progress
[59] Regularly keep track of the usage status of the University's assets (i.e., facilities, equipment), verify the accuracy of such data, promote shared use, and maximize the use of assets by making them available to the public.	[59] Keep track of the use of the University's assets (i.e., facilities, equipment), verify the accuracy of such data, promote shared use, and maximize the use of assets by making them available to the public.	III

**(2) Points to note regarding efforts put into improving the University's financial status**

**Efforts to increase external research funding and other self-income**

- i) Formulating and implementing measures based on the External Funding Acquisition Strategy [Project No. 56]

Based on the results of the previous academic year's external funding acquisition and under the External Funding Acquisition Strategy policy formulated in AY 2016, the University conducted research and analysis of trends of domestic and international competitive funds. Subsequently, based on those results, the University reviewed its funding acquisition plan prepared in AY 2019 and then prepared an external funding acquisition plan for AY 2020 and AY 2021. To promote these plans promptly, the following efforts were made to change existing systems and develop new fund-raising measures that will lead to increasing the amount of external funding acquisition: 1) the University reviewed its system that forms the basis for industry-academia collaboration, and in AY 2021, it decided to change its indirect cost system for joint research from the current hourly rate to an indirect cost rate system of 30% and 2) the University introduced a naming rights system, and to expand its means of soliciting donations, it further promoted Hiroshima University's crowdfunding program. Consequently, the amount of external funding received per full-time faculty member increased by 800,000 yen from 7.44 million yen in the previous academic year to 8.24 million yen (total amount of external funding received: 14.758 billion yen/1,792 full-time faculty members), which is about 1.4 times the amount received at the end of the 2nd mid-term target period (5.95 million yen per full-time faculty member in AY 2015).

- ii) Cost control [Project No. 58]

Based on its financial statements for AY 2019, the University calculated its general administrative expenses by individual segment (or accounting unit) and analyzed financial fluctuations. The results were explained to all accounting staff members of the University, and accounting staff members were also thoroughly informed of the need to select appropriate classification categories based on purpose when executing the budget. In addition, to reduce the percentage of general administrative expenses by establishing awareness of budget allocation and budget execution, in its initial budget for AY 2020, the University set a budget reduction target of 2% compared to that of the previous academic year for consumables and other items related to administrative departments.

Regarding the electricity supply and demand contracts that were concluded on a long-term basis, compared to before the contract review, in AY 2020, the University saved 43.341 million yen. Regarding the management-included ESCO service the University decided to begin using throughout the Kasumi area in AY 2017, compared to the average between AY 2014 and AY 2016, which is before the University began using the ESCO service, the University saved 75.648 million yen on utilities per year.

- iii) Promoting effective asset management [Project No. 59]

With the approval of third-party lending of land, as stipulated in Article 34-2 of the National University Corporation Act, in March 2020, the University began lending its land as a parking lot, and in AY 2020, it received income of 3.74 million yen.

In April 2020, to improve the education and research environment and effectively use its facilities, the University introduced a naming rights system. In AY 2020, project contracts were

concluded for three facilities on the Higashi-Hiroshima Campus, resulting in income of 1.137 million yen.

In October 2020, for the first time for the Higashi-Hiroshima Campus, the University started to place advertisements on the walls of the Experimental Research Building of the School of Engineering, and from the advertisements, it received income of 665,000 yen.

Regarding the goods it began producing and selling in collaboration with Hiroshima Toyo Carp in AY 2017, in AY 2020, the University renewed its designs and added new products to its lineup, and it also began offering its goods as return gifts to people who donated through the Hometown Tax Donation Program offered by Higashi-Hiroshima City. To foster unity among students, faculty members, staff members, and alumni and also improve its brand image, in AY 2019, the University created a school logo, featuring a phoenix, and also mascot goods, and when the sales of the goods produced and sold in collaboration with Hiroshima Toyo Carp are added to those relating to the school logo and mascot goods, in AY 2020, the University generated sales of 1.596 million yen and a gross profit margin of more than 20%.

**Donation solicitation efforts**

- i) Strategically promoting the Hiroshima University Fund's fundraising efforts [Project No. 57] Regarding its fundraising strategy, the University depicted its donor acquisition process in a pyramid fashion, and to expand this pyramid, efforts were made for each level of the pyramid (comprising potential donors, first-time donors, multiple-time donors, and high-value donors). In approaching potential donors, although the impact of the new coronavirus infection prevented the University from carrying out the initiatives it had initially planned, by specifying donation purposes and setting donation periods, the University launched a new donation campaign to seek support from the general public, establishing the following funds: 1) emergency student support fund to support students in financial need due to the spread of the new coronavirus infection (1,162 donations worth 66.306 million yen), 2) student support project fund using crowdfunding (102 donations worth 3.11 million yen), and 3) new coronavirus research grant fund that collaborates with Sumitomo Mitsui Trust Bank (558 donations worth 15.359 million yen). In addition, to attract donations from overseas countries, the University created an English version of its Fund's website. In addition, to turn potential donors into first-time donors, the University enclosed donation pamphlets in its public relations magazines and alumni association newsletters. In approaching first-time donors, to win their understanding of how funds were used and thereby motivate them to make new donations, the University compiled a booklet of reports on the results of fund use and sent booklets to about 4,000 first-time donors. Consequently, the University successfully turned first-time donors into multiple-time donors, receiving new donations from the recipients of its booklets (84 donations worth 21.194 million yen). In addition, in approaching multiple-time donors, to expand its initiatives to turn multiple-time donors into high-value donors, in AY 2021, the University plans to collaborate with Sumitomo Mitsui Trust Bank in running a medical support donation trust, which will allow making donations regularly, and a donation trust for wills, which will require less complicated procedures.

ii) Fundraising activities of the Fund for Uplifting Hiroshima University and Energizing the Local Communities of Hiroshima

[Project No. 57]

In early celebration of its upcoming 75th anniversary in AY 2024, in AY 2017, the Hiroshima University Fund began promoting fund-raising activities of its Fund for Uplifting Hiroshima University and Energizing the Local Communities of Hiroshima. The Fund Promotion Committee (comprising about 300 members), organized in AY 2018 in collaboration with the local Chamber of Commerce and other organizations, held its third general meeting in December 2020, where it carefully explained the purpose of the Fund and called for support. These efforts helped promote donation requests to companies, and since December, the University has received donations from 17 companies, worth 71.2 million yen. In addition, in September 2020, the University received a donation from Higashi-Hiroshima City in the amount of 500 million yen, and subsequently began constructing an International Exchange Center Facility for the following purposes: 1) facilitating exchanges between top overseas researchers, international students, and the University's students and 2) demonstrating the University's ability to develop innovations in Higashi-Hiroshima City.

(Fund acceptance record: 416.814 million yen [AY 2019] → 846.049 million yen [AY 2020])

iii) Establishing a new Research Support Project Fund using tax reforms [Project No. 57]

Since research support project funds became eligible for tax credits due to a tax reform in AY 2019, in January 2021, the University established a Research Support Project Fund as a project to support research by students and young researchers, and it announced this fact on the Fund's website, emphasizing the benefits of tax credits. In addition, regarding donation results of the Emergency Aid for Hiroshima University Students fund, established at the time of the tax reform in AY 2016, there was an increase in donations to students in financial need, such as the emergency student support fund. (Emergency Aid for Hiroshima University Students fund acceptance record: 13.728 million yen [AY 2019] → 80.256 million yen [AY 2020])

**I Business operation and financial status**  
**(3) Self-inspection/evaluation and information disclosure goals**  
**① Evaluation quality improvement goals**

Medium-term goals	[29] Self-inspect/evaluate whether the quality of the University's education and research meets the level expected of a comprehensive university; subsequently, have self-inspection/evaluation results externally assessed to stimulate the University's education and research efforts.
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Medium-term plan	Annual plan	Progress
<p>[60]            Take the following actions to maintain the quality of the University's education and research: 1) first, develop cross-departmental evaluation criteria and also have schools/offices define their own criteria needed to evaluate practices unique to their divisions; 2) then, have schools/offices perform self-inspections/evaluations every year; and 3) subsequently, ask external non-Japanese and Japanese members of the Administrative Council to assess the self-inspection/evaluation results. In addition, ask the Student Experience in the Research University (SERU) Consortium to conduct a screening as to whether the University's educational quality meets international standards.</p>	<p>[60]            Take the following actions to maintain the quality of the University's education and research: 1) self-inspect/evaluate education and research efforts based on cross-departmental and school/office-specific evaluation criteria; and 2) subsequently ask external stakeholders (including at least one external member of the Administrative Council) to assess the self-inspection/evaluation results. In addition, verify the reliability of the University's evaluation checklist, criteria, and system and improve these as necessary. Furthermore, based on the verification results of the internal quality assurance system for education, formulate improvement measures from the perspective of international compatibility.</p>	IV

**I Business operation and financial status**  
**(3) Self-inspection/evaluation and information disclosure goals**  
**② Information disclosure and self-promotion goals**

Medium-term goals	<p>[30] Release self-inspection/evaluation results at a steady pace to fulfill the University's role as a responsible corporate citizen.</p> <p>[31] Promote the University to make it more widely recognized as a reputable school both within Japan and overseas.</p>
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Medium-term plan	Annual plan	Progress
<p>[61] Release self-inspection/evaluation results in easy-to-understand formats online via the University website and the Japanese College and University Portraits website to fulfill the University's role as a responsible corporate citizen.</p>	<p>[61] Release school/office self-inspection/evaluation results online via the University website and the Japanese College and University Portraits website to fulfill the University's role as a responsible corporate citizen. In addition, regularly examine whether self-promotion efforts are producing the desired effects and improve these as necessary.</p>	III
<p>[62] Promote the University's educational, research, and medical achievements, as well as community service participation, through its website and social media accounts, and in doing so, present information in viewer-friendly ways to increase the University's domestic and international recognition as a reputable school.</p>	<p>[62] Based on the verification results of the effectiveness of information dissemination using social media, make improvements and enhancements as necessary. In addition, examine whether efforts put into disseminating research findings through the Hiroshima University Institutional Repository and Hiroshima University Press are producing the desired effects and further promote efforts, which were improved in the previous academic year.</p>	III
<p>[63] Publish more papers in international academic journals and more articles in educational and research information magazines, and issue more news releases directed at international media sources, and thereby enhance the University's excellent reputation.</p>	<p>[63] Continue publishing the University's excellent research results in overseas journals and publicize them in overseas media through the University's information dissemination system, and expand the University's information dissemination functions.</p>	III

### (3) Special notes on self-inspection/evaluation and information disclosure

#### Self-inspection/evaluation

- i) Improving the University's self-inspection/evaluation system for the revision/improvement of educational quality  
[Project No. 12]  
Refer to Highly strategic and ambitious objectives and plans on pp. 31 and 32.
- ii) The University's initiatives for inspection and evaluation from a university-wide perspective by external parties  
[Project No. 60]
- Schools/offices self-inspected/evaluated their efforts and then asked external stakeholders (including at least one external member of the Administrative Council) to assess their self-inspection/evaluation results (i.e., received school/office organization evaluations)—a practice continued every academic year since AY 2008. In response to the results of the evaluation on education and research, according to schools/offices' characteristics (including advice for enhancing characteristics and features and suggestions for resolving issues), schools/offices made plans on how to resolve any underlying issues and implemented them. The progress made at schools/offices in implementing the measures were reviewed by the President and the University's Evaluation Committee, who provided schools/offices with (89 pieces of) feedback on improving their efforts and resolving any underlying issues. Here is an example of how the University made improvements based on the advice and suggestions it received. The School of Law, which received a suggestion that it should offer classes taught by business representatives of private companies, made eight improvements, including the decision to begin offering the following courses in AY 2021: 1) Fukushima Reconstruction and 2) NHK Theory.
  - Details on the items below were conveyed to all participants of the thought-sharing session with external members of the Administrative Council, including all Officers and Deans/Directors: 1) school/office self-inspection/evaluation results; 2) external assessments of the results (i.e., school/office organization evaluations); and 3) actions that were taken based on the assessments.
- iii) Conducting continuous evaluation of teachers' education and research activities [Project No. 60]
- In accordance with the Basic Policy on Personal Evaluation of Teachers (established by the Education and Research Council), the University continuously implemented personal evaluations of teachers by scoring their activities.
  - By referring to the Guidelines for Personnel and Salary Management Reform, issued by the Ministry of Education, Culture, Sports, Science and Technology (February 25, 2019), as a system that is consistent with previous personnel system reforms, the University considered a new annual salary system and a method of reflecting performance evaluations in benefits and decided to introduce a new university-wide unified teacher evaluation system in AY 2021, verify it and review it as necessary by AY 2022, and implement it in AY 2023. Regarding the reflection of performance evaluations in salaries and benefits other than salaries, the University decided to first sufficiently explain relevant matters to the University's faculty and staff members to deepen their understanding and then begin reflecting performance evaluations in AY 2024. In the new teacher evaluation system, the University set items and points to be distributed uniformly throughout the University so that it can understand the characteristics of each

faculty member's activities (degrees of contribution). In addition, in evaluating faculty members, the University used IR data and built a system for having the Academy Council centrally manage faculty member performance throughout the University.

#### Providing information

- i) Disseminating information on measures against the novel coronavirus infection [Project No. 61]
- In response to the novel coronavirus infection, the University set up a special website to promptly disseminate relevant information in a timely manner and disseminated information both inside and outside the University. In addition, through a website where it posts relevant information for guardians, the University put effort into disseminating information related to student life (class implementation, extracurricular activities, health management guidance, etc.).
- ii) Developing official multilingual websites [Project Nos. 61, 62]
- To enhance the dissemination of information on its official websites available in multiple languages (English, Chinese, Arabic, and Spanish), the University updated its websites the following numbers of times: 1) its English website was updated at least three times a week, 2) Chinese website at least 1.8 times a week, and 3) Arabic and Spanish websites at least once a month.
- The University's English websites were accessed 810,000 times (780,000 times in the previous academic year), and its Chinese websites were accessed about 103,000 times (102,000 times in the previous academic year).
- iii) Using external public relations monitors [Project No. 62]
- To fulfill its accountability to society and proactively disclose and disseminate information in an easy-to-understand manner, the University used its external public relations monitors (38 people), recruited by public call, to gather external opinions on its PR magazines and official website. Based on the results of a survey, the University redesigned its website for guardians and published special features in its public relations magazine "HU-Plus."
- To incorporate students' perspectives into its public relations activities, as it did in the previous academic year, the University appointed 13 students as its 4th-period student public relations directors. Student public relations directors applied their own perspectives as students to writing the following kinds of easy-to-relate-to articles and posted them on the University's website: 1) interviews with students, intended for high school students; 2) alumni interviews to be published in the alumni introduction section of the public relations magazine "HU-Plus"; and 3) introduction of students active in the local community and researchers unique to Hiroshima University).
- iv) Producing a promotional video [Project Nos. 61, 62]
- A promotional video titled "Welcome to Hiroshima University," which the University began producing in late November 2020, was released at the end of January 2021 in Japanese, English, and Chinese. The promotional video became the first of its kind, conveying the appeal of not only Hiroshima University but also Hiroshima City and Higashi-Hiroshima City, where the University is located. On YouTube, the video was viewed 4,800 times in Japanese, 630 times in English, and 170 times in Chinese. On Facebook, there were 6,200 views, 785 likes, and 118 shares in Japanese, and in English, there were 2,350 views, 290 likes, and 40 shares. The promotional video likely helped many viewers feel closer to the University.



v) Constructing a researcher search system [Project No. 61]

To promote media exposure of researchers by expediting the matching of researchers with the media, to facilitate the connection between researchers in Japan and abroad and to help the public approach the University's educational and research achievements, the University began constructing a new "Researcher Guidebook" (tentative name). To make it easier for the public to use, the new system will allow searches by research genre and SDG, and the University expects it to be operational in June 2021.

vi) Actively using SNS for public relations activities [Project No. 62]

To visualize public relations, the University promoted the in-house production of PR videos, including eight 2-minute videos introducing research results and six campus PR videos co-produced with students, and effectively disseminated them through the active use of SNS. In addition, as an effort to adapt to the novel coronavirus pandemic, the University posted videos of highlights of various events, messages of support for students by the cheering squad, an event titled "The 100 Greatest Lectures of Hiroshima University to Strengthen Your Knowledge," and other unique initiatives on SNS, increasing its number of followers on Facebook by 1.2 times in Japanese and by 1.8 times in English. (Compared to those of the previous academic year) The numbers of followers by account are as follows. The University is steadily increasing the number of its followers.

Facebook Japanese 17,655 (16,326 at the end of the previous academic year)

Facebook English 3,025 (1,928 at the end of the previous academic year)

Twitter Japanese 15,888 (14,748 at the end of the previous academic year)

Twitter English 139 (opened in September 2020)

Instagram 6,100 (4,745 at the end of the previous academic year)

LinkedIn 6,281 (opened in September 2020)

vii) Efforts to disseminate information using mass media [Project No. 62]

The University actively promotes students' activities and scholars' education and research efforts on radio programs. In a program mainly listened to by high school and junior high school students, the University has a section called "Hirodai Radio Campus" (which airs twice a month for about 5 minutes), in which students and researchers make an appearance to provide information on their everyday activities, such as extracurricular activities and research results. Regarding press release information on research results, on October 26, the University began sending direct mail to all faculty members once a week.

viii) Proactive international public relations efforts [Project No. 63]

To actively promote its research findings and other activities, the University published articles in international newsletters. The University continually submitted articles to QS News-2-Wow-U Newsletter (which was renamed "QS Global Education News" [QS-GEN] in August) and the Japan Society for the Promotion of Science San Francisco Research Liaison Center's Newsletter (QS: 7 submissions, 4 accepted; JSPS: 1 submission, 1 accepted). In addition, the University posted and thereby made 10 posts public on the portal site operated by QS Quacquarelli Symonds.

To introduce the University's research results and latest topics in English, HU UPDATE (mail introducing the University) was sent out three times a year (in July, October, and February). To improve its reputation, the University actively conducted public relations activities, including sending HU UPDATE to about 300 overseas inter-university partner universities and 46 presidents of overseas universities. In addition, the University also asked its faculty members to

send HU UPDATE to their fellow researchers overseas. Starting with its October issue, the University improved HU UPDATE's communicativeness by having international public relations specialists, who are native speakers of English, write articles so that their contents will have more originality than translations of articles written in Japanese.

To improve its international reputation by strengthening its ability to disseminate information internationally, the University published English press releases of its research results on "EurekAlert!," "AlphaGalileo," and "Asia Research News," which are international online press release platforms. The University doubled its numbers of releases compared to those of the previous academic year.

(EurekAlert!: 19 releases)

(AlphaGalileo: 24 releases)

(Asia Research News: 25 releases)

In addition, the University strategically disseminated timely topics, such as the results of research on the novel coronavirus, written in English. Thanks to the high-quality articles and strategic information dissemination by its international public relations specialists, the University was able to disseminate its research capabilities to the world through the media, such as "News Week" and "The Japan Times," the web magazine of the Smithsonian Institution, and "The Guardian," a major web medium in the UK.

ix) Promoting the University through its naming rights project [Project No. 61]

In April 2020, to improve the education and research environment and effectively use its facilities, the University introduced a naming rights project. In AY 2020, naming rights contracts were concluded with three companies for three facilities on the Higashi-Hiroshima Campus.

**I Business operation and financial status**  
**(4) Other business management goals**  
**① Facility/equipment maintenance and usage goals**

Medium-term goals	[32] Manage facilities comprehensively, based on the Campus Master Plan for Maintaining Facilities, and thereby maintain the appeal of the University's campuses.
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Medium-term plan	Annual plan	Progress
[64] Prepare venues for student-instructor interactions, including active-learning lessons. In addition, find out the amount of funding the central government will be providing, and with that amount in mind, renovate old facilities, implement measures to make facilities more energy-efficient, and conduct maintenance work to ensure safe and worry-free education and research environments.	[64] Conduct maintenance work on the University's education and research facilities, including renovating the Department of Biology's Research Building B, and also prepare venues for student-instructor interaction, including active-learning lessons, based on the action plan for executing the Campus Master Plan for Maintaining Facilities. In addition, renovate old facilities, implement measures to make facilities more energy-efficient, conduct maintenance work to ensure safe and worry-free education and research environments, and also perform inspection and evaluation of the implementation during the relevant period based on the annual plan for managing facilities.	III
[65] Maximize the use of existing facilities, and to do so, reallocate space currently assigned to education and research purposes, and secure about 1.5 times more space for communal use.	[65] Optimize the allocation of space to education and research purposes, expand space for communal use, secure more space for the reorganization of education and research organizations, and also perform inspection and evaluation of the implementation during the relevant period, and to do so, implement the instructor research-space request system, study users' purposes and usage patterns of facilities, and use the space charge system.	III

**I Business operation and financial status**  
**(4) Other business management goals**  
**② Safety management goals**

Medium-term goals	[33] Create a safety culture, and to do so, strengthen the University's safety management system and help faculty and staff increase their awareness of risk management, as well as safety and health.
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Medium-term plan	Annual plan	Progress
[66] Help faculty and staff increase their awareness of risk management, as well as safety and health, and to do so, inspect and evaluate the University's safety management system and also provide faculty and staff with training and lectures on safety and health periodically every year.	[66] Improve the University's safety and health management practices based on the results of the inspection and evaluation of the University's safety and health management system—including its legality—completed in the previous academic year. Provide faculty, staff, and students with better safety education and thereby help them increase their awareness of risk management, as well as safety and health.	III

**I Business operation and financial status**  
**(4) Other business management goals**  
**③ Legal compliance goals**

Medium-term goals	[34] Ensure reliable, transparent, healthy, and proper administration of the University with full compliance with the law, and thereby fulfill the University’s role as a responsible corporate citizen.
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Medium-term plan	Annual plan	Progress
<p>[67]            Take the following measures to prevent scientific misconduct and the misuse of research funds: 1) provide those who intend to conduct research at the University and those who want to use its research funds with education on research ethics, laws related to research, and prevention of the misuse of research funds; and 2) require those who use its research funds to submit a fund-use statement each relevant year.</p>	<p>[67]            Provide faculty and students with education on research ethics and legal compliance, and to do so, implement the University’s plan for systematically preventing scientific misconduct and the misuse of research funds. In addition, take measures to ensure that those who use the University’s research funds will submit a fund-use statement confirming that they fully understand they are legally responsible for observing applicable laws and would be subject to disciplinary action should any violation occur.</p>	III
<p>[68]            Take the following actions to maintain the legality, integrity, and reliability of the University’s operations: 1) provide faculty and staff with training on personal information protection to maintain excellent information protection standards and 2) provide students and faculty members with periodic seminars on legal compliance.</p>	<p>[68]            To increase the effectiveness of its practices regarding the protection of personal information containing individual identifiers, the University will examine its practices regarding internal audits, as well as student, faculty, and staff training programs employed the previous academic year, and improve them as necessary. In addition, conduct verification in preparation for the next academic year.</p>	III
<p>[69]            Take the following actions to reduce system vulnerability and ensure business continuity in the event of a disaster: 1) complete cloud migration of main office servers, 2) manage information security, and to do so, follow the information security policy and its implementation procedures that were revised as part of the second medium-term plan, as well as the University’s cloud service use guidelines.</p>	<p>[69]            Evaluate and analyze the operational status of the cloud migration of the main office servers, completed in the previous academic year. In addition, begin implementing the revised version of the Hiroshima University Basic Information Security Measures Plan, starting with items with a higher order of priority.</p>	IV

**(4) Other points to note about business operations**

**Facility and equipment management efforts**

As a system for addressing facility management, the University has a Facility Management Council, which comprises faculty members selected from various research fields throughout the University, established under the direction of the Executive Director (Financial and General Affairs), and the Council formulates and promotes specific measures for facility maintenance, effective use of facilities, and maintenance management from a university-wide perspective.

In AY 2020, the Facility Management Council inspected and evaluated the implementation of the previous period and took the following measures.

i) Maintaining, managing, and optimizing the use of facilities (including preventive maintenance) [Project Nos. 64, 65]

① Visualization of education and research space

To improve the imbalance in researchers' education and research space, secure communal space for the entire University to meet new needs, and effectively share and resolve issues related to space, the University expanded its facility information, which it had only partially disclosed before, and partially visualized education and research space in ways that will allow faculty members to freely view and update room information (184 rooms). The system is currently under development.

② Keeping track of users' purposes and usage patterns of facilities

Based on the results of a survey on users' purposes and usage patterns of facilities relating to the Graduate School of Education, conducted in AY 2019, the Chairperson of the Facility Management Council requested the Dean to make improvements, and accordingly, the Dean improved the imbalance of space by allocating infrequently used spaces within the Graduate School.

In AY 2020, the University conducted a survey on users' purposes and usage patterns of facilities relating to the Graduate School of Biomedical and Health Sciences and subsequently reported to the Dean issues concerning the effective use of space and requested improvements. Consequently, after recognizing that student space was imbalanced between laboratories, the Dean improved the situation by securing in the Graduate School space exclusively reserved for students, resulting in more effective use of space.

③ The University's space-charge system

The University implemented its space charge system, as it did in the previous academic year, and secured 45.653 million yen as funds for renovations needed to maintain facilities.

④ Expanding communal space

The University expanded its communal space area by 1.68 times from 7,689 m<sup>2</sup> at the end of AY 2015 to 12,931 m<sup>2</sup> at the end of AY 2019. In AY 2020, by securing another 569 m<sup>2</sup> as industry-academia joint research office space, the University further expanded its communal space area by 1.75 times compared to that of AY 2015 to 13,500 m<sup>2</sup>, far surpassing its mid-term plan goal of expanding communal space area by 1.5 times that compared to AY 2015.

⑤ Efforts relating to the Hiroshima University Infrastructure Life Extension Plan

In accordance with its Hiroshima University Infrastructure Life Extension Plan (individual facility plan), formulated in AY 2019, the University carried out the following repairs and improvements as its life extension promotion project: 1) maintenance of the performance and repair of the Synchrotron Radiation Research Building, 2) waterproofing of the roof of the General Research Building (Kasumi), 3) waterproofing of the roof of the School of Applied Biological Science's Lecture Building C (Higashi-Hiroshima), 4) repair of the elevators in the General Research Building (Kasumi), and 5) repair of the air conditioning system in the Advanced Science General Research Building (Higashi-Hiroshima).

ii) Campus Master Plan-based facility maintenance [Project No. 64]

In accordance with its Hiroshima University Campus Master Plan 2016, the University renovated the School of Engineering's Lecture Room Buildings B2 and B3 (Higashi-Hiroshima) and the School of Applied Biological Science's Research Building B (Higashi-Hiroshima), and it thereby secured an area of 365 m<sup>2</sup> for active-learning lessons. In addition, the University carried out the following construction works: 1) construction of a new experimental research building (Kasumi; Research Institute for Radiation Biology and Medicine), 2) revitalization of critical infrastructure (Higashi-Hiroshima; extra-high-voltage substation equipment), 3) construction of a new experimental and training building (Higashi-Hiroshima; biological sciences), and 4) core and environmental maintenance (Midori and other areas; hygiene measures).

Consequently, the University maintained a safe and secure education and research environment, and it inspected and evaluated the implementation of its action plan of the Hiroshima University Campus Master Plan 2016 in relation to the relevant period, confirming that the implementation rate was 95.2% (79 items out of 83 items).

In addition, under the leadership of the Executive Director (Financial and General Affairs) in charge of Facilities Management, the Campus Master Plan 2022 Study Subcommittee was established under the Facility Management Council to prepare the next Campus Master Plan under a system of faculty-staff cooperation that will allow the following types of people of both genders to exchange opinions: 1) faculty members and students in the diverse fields of architecture, urbanism, environment, transportation, community, and medicine and 2) staff members in charge of facilities.

iii) Maintaining facilities with help from various funding sources [Project No. 64]

With a donation of 500 million yen from Higashi-Hiroshima City, on an area of 3.955 m<sup>2</sup>, the University began construction of an international exchange center facility to welcome world-class international researchers and students. (To be completed: September 2021)

In addition, the University received a donation of 10 million yen from its Alumni Association and its Supporters' Association to develop a space (public space, pergola on an area of 24 m<sup>2</sup>) at the School of Engineering primarily for relaxation.

Furthermore, the University's naming rights project allowed it to renovate and improve the KATO OMOSHIRO LAB, located on an area of 119 m<sup>2</sup>, without causing any financial burden on the University.

iv) Promoting environmental preservation measures and active energy management [Project No. 64]

The University took the following energy efficiency measures: 1) replaced 19 200 W outdoor light bulbs with LED bulbs; 2) replaced 58 air-conditioners with more energy-efficient ones; 3) replaced 769 fluorescent lamps, including those in the School of Applied Biological Science's Research Building B (Higashi-Hiroshima), with LED bulbs; 4) replaced transformers used in the School of Engineering with more energy-efficient ones; and 5) changed window glass to multi-layered glass as part of building renovations. Through these efforts, the University was able to reduce electricity consumption by about 230,479 kWh per year.

In addition, the management-included ESCO service provided to all areas of the Kasumi Campus enabled the reduction of energy (in terms of heat) by 12,000 GJ in AY 2020 compared to that of AY 2019, which allowed reducing CO<sub>2</sub> emissions by 637 tons.

The University as a whole reduced CO<sub>2</sub> emissions by 7,368 tons from 55,489 tons in AY 2019 to 48,121 tons in AY 2020.

### Safety management efforts

- i) Improving the University's safety and health management system [Project No. 66]
- The University inspected the safety and health practices it employed in the previous academic year, and based on that inspection, it established safety and health goals, and policies, for this academic year and announced them subsequently in April.
  - The University completely banned smoking on its campuses in January 2020, and it implemented follow-up measures to promote smoking cessation. (The main measures taken were as follows.)
    - ① The University provided consultation and welcomed opinions and information from students and faculty members through its passive smoking consultation desk available on its campus portal site, and it subsequently used such opinions and information to promote complete smoking cessation.
    - ② In response to concerns about people smoking on the streets around the University's campuses following the abolition of designated smoking areas, the Finance and General Affairs Office led efforts to regularly patrol the streets around the campuses to ask anyone smoking to stop and cooperate.
  - Regarding safety and health education, which has previously been conducted mainly in person, to expand the number of participants, the University made it available in multiple languages and posted contents on its online learning management system (Bb9).
    - ① For students / common edition (Japanese / English)
    - ② For students / experiment edition (Japanese / English)
    - ③ For faculty and staff members (Japanese)

### Efforts related to legal compliance

- i) Efforts to prevent scientific misconduct [Project No. 67]
- The University revised the operation of detailed regulations and bylaws regarding ethics education for research activities at Hiroshima University, and to expand opportunities to take its ethics education course, it changed its deadline for faculty and staff members to take the course from five years to three years. Furthermore, while the University has previously conducted research ethics education as an FD course, to improve the convenience of faculty members, it switched to delivering research ethics education online so that faculty members can take the course without being restricted by time and place.
- Regarding research ethics education for students, the University administered a standard program of research ethics education to be taken at the time of admission and prior to the preparation of graduation theses and dissertations, and to provide basic education on research activities, it also established a chapter on research ethics in its undergraduate liberal arts education course titled "Introduction to University Education." The University made its research ethics education for graduate students (Graduate Student Basic) and undergraduate students (Introduction to University Education) available online, and to ensure their quality, it developed comprehension tests. In addition, to further raise awareness of the need to prevent misconduct, the University is reviewing teaching materials for faculty members, staff members, and students, and as research ethics education materials, it is preparing and distributing booklets of case studies of misconduct that occurred at the University in the past.
- Furthermore, in addition to the existing on-campus contact point for reporting misconduct related to research activities, the University established a contact point at an external law firm.

- ii) Efforts to prevent the misuse of research funds [Project No. 67]

In response to cases of misuse of research funds, for which a final report was submitted in AY 2019, based on the results of a mobile investigation, conducted in AY 2019, which was based on the Guidelines for Management and Audit of Public Research Funds in Research Institutions (Implementation Standards), in AY 2020, the following measures were taken.

Regarding compliance education to prevent misuse of research funds, the University reviewed its educational materials and created a new comprehension test, and in AY 2020, it began implementing compliance education and comprehension tests through e-learning.

To prevent duplicate receipt of travel expenses from the University and other institutions, the University revised its application form for requesting and permitting dual employment to confirm whether travel expenses are paid by other institutions. In addition, the University revised its travel report form to require providing example descriptions of duties so that details regarding business trips can be verified afterwards. Subsequently, on April 1, 2020, the University switched to using the new forms.

In November 2020, based on an analysis and understanding of the causes of improper use of research funds, which was based on incidents of improper use of research funds that had occurred at the University, comprehension tests, and internal audit results, the University revised its Plan for the Prevention of Improper Use of Research Funds and Other Resources at Hiroshima University and thoroughly informed faculty members, staff members, and students of its revised plan.

In February 2021, in addition to the existing internal contact point at the Audit Office, an external contact point for reporting misuse of research funds was established at a law firm.

The University will continue its efforts to prevent recurrence in the next academic year and after.

- iii) Personal information protection training [Project No. 68]

The University provided its faculty and staff members with training on the protection of personal information and conducted ongoing educational activities.

- Training for newly hired faculty and staff members (April and October)

Note: Due to the need to deal with the novel coronavirus infection, training programs were implemented by distributing materials.

- Personal information protection training (September)

Higashi-Hiroshima area: 141 participants, Kasumi area: 105 participants

In addition, the University reviewed whether the contents of its portal site for faculty and staff members regarding the protection of personal information were accurate and timely, and it renewed its portal site so that users will have an easier time searching for information and reading information.

Students were provided with video-based lectures on personal information protection before the Qualified Teaching Assistant Qualification test preparation seminar.

- iv) Personal information / corporate document audit [Project No. 68]

Regarding the status of personal information and corporate documents in schools/offices, the Audit Office and related organizations collaborated to conduct audits (October–November, target: 16 schools/offices). Schools/offices found not to be properly handling personal information and corporate documents were instructed to immediately improve their practices, and whether schools/offices improved their practices as instructed was subsequently confirmed.

### Information security improvement efforts

The following is based on the Ministry of Education, Culture, Sports, Science and Technology's notice about Tightening University and Other Institutional Cyber Security Measures (published on



May 24, 2019, in Vol. 59 of the former Ministry of Education, Culture, Sports, Science and Technology, Higher Education Bureau Chief's Notice).

- i) Establishing an effective incident response system [Project No. 69]
  - ① The University provided its Computer Security Incident Response Team (CSIRT) with education and training on how to respond when notified of unauthorized access attempts and what procedures to follow in the event of an information security incident (attendance: 100% [AY 2020]). The University will continue to provide the CSIRT with such education and training so that it can help the University minimize any damage in the event of an incident.
- ii) Education and training on cybersecurity [Project No. 69]
  - ① The University regularly provided faculty, staff, and students with information security compliance training; consequently, no serious information security incidents occurred. Freshman training (online lecture): 3,163 new-student participants (86%; AY 2020) Follow-up training: 16,664 participants (87.7%; AY 2020) In addition, faculty and staff were provided with 12 information security seminars designed to help increase participants' knowledge and awareness of information security (participants: 909 [AY 2019] → 1,397 [AY 2020]). The seminars were followed by a satisfaction survey, according to which 97.1% of respondents found them participant-friendly.
  - ② The University regularly provided executive officers, faculty, and staff (excluding part-timers and those on leave) and students (excluding part-timers, those on leave, and those studying abroad) with information security incident response training. Consequently, no serious information security incidents occurred (participants: 20,287 [AY 2020]). Unlike most training programs of this sort, which send participants suspicious email and count the number of recipients who open them (with the aim being the achievement of 0%), the University aims to help participants become able to quickly respond to information security incidents themselves. Accordingly, the focus of its training programs has been, and will continue to be, the achievement of a 100% implementation rate of initial response procedures. 1st half of program (lecture): 4,263 faculty/staff (76.7%; AY 2019) → 4,812 (83.9%; AY 2020); 5,864 students (40.2%; AY 2019) → 9,035 (62.1%; AY 2020) 2nd half of program (drill): 4,234 faculty/staff (76.2%; AY 2019) → 4,906 (85.5%; AY 2020); 5,825 students (39.9%; AY 2019) → 9,889 (68%; AY 2020)
- iii) Self-inspecting and auditing information security measures [Project No. 69]
  - ① The University self-inspected/evaluated its information security practices (participants: 16,821 [84.9%; AY 2020]).
  - ② It also conducted an internal audit of its hospital's information system (in December 2020). The internal audit confirmed that the University's financial accounting system was being operated properly
  - ③ The University also conducted an internal audit of its financial accounting system (in November 2020). The internal audit confirmed that the University's financial accounting system was being operated properly in accordance with the University's rules.
  - ④ In addition, internal/external audits of the Information Security Management System (ISMS) and the ISMS cloud security certification were conducted. The internal audit confirmed that the University's ISMS measures were implemented without delay. The external audit also confirmed that the University's committees, including its ISMS office, were properly and effectively implementing ISMS measures in accordance with the ISMS manual and other

documents that were revised in AY 2018. Accordingly, the University passed the renewal review (in March 2021).

- iv) Collaboration/cooperation with other organizations
  - ① In AY 2020, the University received 291 notifications from the NII-SOCS and responded to all of them; consequently, no serious information security incidents occurred.
  - ② The University welcomed trainees from the Hiroshima Prefectural Police, and both shared their knowledge through daily CSIRT operations. (February 2021)
- v) Technical measures
  - ① In AY 2019, the University upgraded its office information system, disconnected its critical office information system from the Internet, and equipped all office terminals (1,420 units) with terminal virtualization technology to disconnect office information systems handling critical information from the Internet, and it also used VPN technology to enable access to office information systems without location restrictions. Full-scale operation started in AY 2020, and all operations that handle critical information are now performed in a secure virtual environment. In addition, the University made telework from home via the Internet possible, contributing to the promotion of telework. (Implemented by 443 (83.4%) out of 531 general employees)
  - ② The University completed cloud migration of its educational affairs servers, which had been the last of its core business servers yet to have had switched to cloud computing. (October 2020) In addition, regarding the main office servers that have been completed to cloud migration, the University achieved stable operation of the systems by continuously evaluating and analyzing their operational status.
- vi) Implementing security measures in disaster recovery plans and business continuity plans
  - ① As an information system operation continuity plan (IT-BCP), the University formulated a Manual for Business Continuity Planning of Hiroshima University's Critical Systems (Draft) (March 2021).
- vii) Formulating a Hiroshima University Basic Plan for DX Promotion
  - ① With an eye on the development of the information environment and digital technology a decade from now, to promote digital transformation that will transform education and research, support operations, and create new value, the University formulated the Hiroshima University Basic Plan for DX Promotion, which comprises basic policies and important university-wide matters that need to be implemented with priority. (January 2021)

#### Response to issues in the AY 2019 evaluations

- i) Misconduct in research activities  
See special notes [Project No. 67] on p. 62.
- ii) Inappropriate accounting of research funds  
See special notes [Project No. 67] on p. 62.

### Efforts to deal with the novel coronavirus infection

- i) Establishing a system, led by the president, for responding to the new coronavirus infection
- On February 4, 2020, the University established a Committee on Countermeasures for the Novel Coronavirus Infection, directed by the Executive Director (Financial and General Affairs), and the Committee held meetings to prepare a University Policy on the Novel Coronavirus Infection, confirm the travel history and safety of the University's faculty members, staff members, and students, and decide how the University will handle visitors (eight meetings were held.). (The Committee on Countermeasures for the Novel Coronavirus Infection was dissolved due to the establishment of the following Crisis Management Countermeasures Headquarters.)
  - On April 2, 2020, the University established a Crisis Management Countermeasures Headquarters, directed by the President, and on April 20, 2020, the Headquarters formulated a set of action guidelines to serve as a guide for action within the University. Regular weekly meetings were held to formulate and implement measures for resuming classes, preventing the spread of the novel coronavirus infection, and supporting students (51 meetings were held [as of the end of March 2021].).
  - After recognizing that the number of PCR test takers had increased, in anticipation of a cluster outbreak on campus, on August 24, 2020, the University established a Novel Coronavirus Infection Control Office.

ii) Efforts to resume classes

- To continue providing students with learning opportunities, on April 8, 2020, the University began delivering online classes using its online learning management system (LMS) and video on demand (VOD) system. In addition, to allow students to take online classes on campus, the University secured classrooms that students can use freely, and it also lent Wi-Fi routers free of charge to students who did not have Internet access at home.
- While paying attention to actions being taken by the national and prefectural governments, after taking sufficient infection prevention measures, the University gradually resumed face-to-face classes.

For instance, classes were conducted by maximizing the features of face-to-face and online classes in the following ways, depending on the characteristics of each course and the content of each lecture: ① Off-campus students participated in face-to-face classes online (real-time); ② Face-to-face classes were relayed to other classrooms by real-time online delivery; ③ Face-to-face classes were visually and audibly recorded and delivered on demand; ④ Students were divided into two groups, and each group attended face-to-face classes every other week; ⑤ Experiments and practical training courses were also conducted online; and ⑥ Since first-year undergraduate students were feeling anxious about student life due to their insufficient opportunities to come to campus, the University proactively taught specialized courses in a face-to-face manner.

In conducting classes, the University took measures to prevent infection, such as by distributing face shields to those who said they wanted to use them and installing carbon-dioxide concentration measuring devices in lecture rooms used by many people.

Term	Percentage of face-to-face lessons	Courses taught through face-to-face lessons
Second term (From June 16, 2021)	About 10%	Experiments and practical training courses involving practical work
Third term (From October 2, 2021)	About 60%	Specialized subjects for first-year undergraduate students
Fourth term (From December 1, 2021)	About 65%	Liberal arts education courses

iii) Providing student support

- To help Japanese and international students who are in need of financial help due to a drastic decrease in their income from part-time jobs and other sources, the University has begun implementing an emergency student support system. With support from the local community and alumni, the University received 66.31 million yen in donations (1,162 donations), and on April 23, 2020, it began providing emergency scholarships (30,000 yen per person, paid out continuously every month).
- Regarding the money international students need while waiting to be allowed back into the country after returning to Japan from abroad, the University received support of up to 100,000 yen per student from Higashi-Hiroshima City, and together with the City, it provided support for the re-entry of international students.
- On November 26, 2020, the University concluded an agreement with Izumi Co., Ltd. for Cooperating in the Delivery of Emergency Supplies, and before other national universities in Japan, it established a system for delivering emergency supplies, such as food, from the nearest Izumi store to minimize the trouble that students, faculty members, and staff members may have in their daily lives while staying at home after having come into contact with infected people.
- To help guardians deepen their understanding of the University's learning environment and study support, the University held Hiroshima University Community Meetings, which have been held since AY 2018, and explained its measures against the novel coronavirus pandemic and created opportunities for guardians to exchange opinions with Executive Directors, Vice Presidents, and Deans/Directors. The University had participants answer a survey at the end of each Hiroshima University Community Meeting, and the University received many responses, including the following: "While I do not have many opportunities to come to Hiroshima due to the novel coronavirus pandemic, the meeting gave me an idea of what the University is like" and "While the novel coronavirus causes much anxiety and worry, I was pleased to be given this opportunity." On the other hand, there were many opinions requesting face-to-face classes. Based on these opinions, while giving top priority to the health and safety of the faculty members, staff members, and students, face-to-face classes were expanded in the third term, and in the fourth term, while taking advantage of online classes, face-to-face classes were conducted in principle for liberal arts courses.
- For new students, who are feeling anxious about not being able to participate in face-to-face classes or extracurricular activities on campus, such as club and circle activities, due to the novel coronavirus pandemic, the University prepared cheering messages from faculty and staff members and upperclassmen of all undergraduate schools and released them in May 2020. In addition, the University held a joint briefing session for extracurricular activity groups sponsored by the University (on May 23 and 24), where 100 groups introduced their activities online, welcoming about 450 new student participants.

iv) Measures to prevent the spread of novel coronavirus infection

- By using the University's emergency communication system, which is used every year in implementing safety confirmation drills to raise awareness of risk management, the University checked the physical conditions of all students, faculty members, and staff members, identified people who were not feeling well at early stages, and helped them.
- The University actively promoted telework in response to the national government's declaration of a state of emergency to help avoid the three Cs (closed spaces, crowded places, and close-contact settings) in the workplace. In addition, based on the results of the telecommuting system in response to the 2018 Japan floods and the telework system in response to the need to prevent the spread of the new coronavirus infection, to support flexible work styles of staff members and business continuity planning (BCP) in emergencies, in November 2020, the University introduced the Hiroshima University Telework System. To transform the organization into one that can adapt to the new normal world, in addition to reviewing various work processes, the University notified its faculty members, staff members, and students that it encourages the systematic implementation of telework.
- In March 2021, to detect people who are not feeling well due to fever, the University installed an infrared thermography camera for screening people with fever at the entrance of each undergraduate school building.
- Efforts to create a diversified research environment  
Since elementary schools were all closed at once due to the need to prevent the spread of the novel coronavirus infection, the University offered temporary afterschool childcare services for schoolchildren in the Higashi-Hiroshima area (welcoming 17 children between April 16 and April 21, 2020) and the Hiroshima area (welcoming 201 children between April 15 and June 5, 2020).
- To have the contractors managing the on-campus childcare facilities (Himawari Nursery School and Cosmos Nursery Room) implement monthly PCR testing of employees, the University developed a flow chart showing how to respond if any employees test positive and began implementation in February 2021.

v) Providing medical support

- Establishing a cooperative system within the University for the implementation of PCR testing  
In response to the fact that Hiroshima Prefecture was designated as an infection spread alert area on April 13, 2020 due to the spread of the novel coronavirus infection, as part of the University's crisis management, the Kasumi School/Office Liaison Council requested all laboratories on the Kasumi Campus to cooperate in establishing an organization that can conduct COVID 19-PCR testing in preparation for future outbreaks. With cooperation from 27 laboratories (71 researchers), the University created an on-campus cooperative system for PCR testing of the novel coronavirus, and on April 17, 2020, it established the system as the Hiroshima University COV-PEACE-PROJECT 2020. Subsequently, the University signed a contract with Hiroshima Prefecture and conducted an administrative inspection. In addition, the main laboratories of the Hiroshima University COV-PEACE-PROJECT 2020 were commissioned to conduct tests for the Hiroshima Prefecture Project for the Establishment of a COVID-19 Testing and Research System through Government-Academia Collaboration. With cooperation from the Hiroshima University COV-PEACE-PROJECT 2020, the University's medical laboratories relating to the development of prophylactic vaccines and therapeutic agents against the new coronavirus, epidemiological surveys to understand the status of infection, genetic analyses, and genomic analyses

collaborated in promoting diagnoses, drug discovery, countermeasures, and virological research.

- Creating a response manual  
Based on a university-wide policy, the University created the Manual for Responding to the Novel Coronavirus Infection (COVID-19) for faculty and staff members working at the University Hospital and updated it as necessary
- Handling of critically ill patients  
Being a priority medical institution, the Hospital secured four beds for critically ill patients. In addition, it used subsidies related to the novel coronavirus to upgrade its bronchoscope and CT imaging equipment.
- Providing afterschool childcare services for schoolchildren in response to temporary school closures  
In response to the temporary closure of elementary schools due to the new coronavirus infection, the University opened an emergency afterschool childcare center on campus to help medical staff raising children continue to work. In addition, to make up for the shortage of afterschool childcare instructors, the administrative staff of the University took turns working as instructors to maintain a system that allows the continued provision of afterschool childcare services during the school closure period.
- Holding of workshops on artificial respiration management and ECMO therapy  
To cultivate personnel who can provide artificial respiration management and ECMO therapy to critically ill patients infected by the novel coronavirus, on June 27, 2020, in collaboration with the Ministry of Health, Labour and Welfare and related academic societies, the University held a training course for doctors, nurses, and clinical engineers working at medical institutions in Hiroshima Prefecture. About 40 people, including doctors, nurses, and clinical engineers working at medical institutions in Hiroshima, Fukuyama, Miyoshi, and other cities, participated in the training course.
- Helping prevent the spread of the novel coronavirus infection in cooperation with Hiroshima Prefecture  
At the time of a cluster outbreak, a professor at the University's Hospital provided help as the leader of the Medical Support Team for Infectious Diseases, a unique medical team dispatched by Hiroshima Prefecture to welfare facilities and hospitals, which comprised 17 members. The University also helped DMAT establish accommodation facilities for patients lightly infected by the novel coronavirus. In December 2020, when the novel coronavirus infection was spreading rapidly across the prefecture, the University dispatched doctors, nurses, and radiologists to the triage outpatient clinic set up by the prefecture, contributing to the prevention of the spread of the infection in the midst of tight medical conditions.
- Acceptance of medical supplies and other support  
As the novel coronavirus infection continued to spread, the University Hospital received many medical supplies, such as masks and protective clothing, as well as beverages and food for doctors, nurses, and staff members. To thank service organizations, companies, and individuals who supported the University Hospital, the University Hospital posted on its website the names of the service organizations, companies, and individuals who agreed to be acknowledged publicly.

vi) Taking up challenges posed by the “with-corona” and post-coronavirus worlds

<Education>

- Sharing courses as “The 100 Greatest Lectures of Hiroshima University” before other universities in the nation  
Interesting lectures by leading faculty members of the University were made available internally and externally in both Japanese and English via the official YouTube site of Hiroshima University.
- Fostering international exchange online  
In the second semester of AY 2020, the University established e-START/START+ programs, online international exchange programs that do not involve travel.
- Introducing COIL-type education  
The University introduced COIL (Collaborative Online Inter-national Learning) type education, providing students with opportunities for discussion and exchange with overseas students.

<Research>

- AMED technology development project for countermeasures against infectious diseases, including viruses  
The University was the only entity in the nation to be selected to undertake projects in all four research support areas (of demonstration, improvement, validation, and basic research).
- Making COVID-19 pneumonia a survivable disease  
The University provided intensive extracorporeal membrane oxygenation (ECMO) therapy for acute respiratory failure, including cases related to COVID-19, and pursued more effective and safer ways to apply ECMO.
- Developing an inexpensive 3D printable ventilator model  
To solve the shortage of ventilators, the University aims to develop inexpensive ventilators to meet the needs of clinical practice.
- Applying small molecule RNA analysis technology to the diagnosis and drug discovery of the novel coronavirus infection  
The University will work on the development of diagnostic technology that takes into account the sensitivity, specificity, and simplicity of diagnosis by the qRT-PCR method and also work on the construction of a genetic analysis database that can be applied to drug discovery.
- Aiming to acquire antibodies to develop vaccines and discover drugs  
The University is working on the development of technology to extract from the body antibody genes that bind strongly to viruses and also the development of technology to artificially generate immune responses outside the body.
- Project to establish a testing and research system for COVID-19 through government-academia collaboration  
The Graduate School of Biomedical and Health Sciences will primarily collaborate with Hiroshima Prefecture in ① expanding the inspection system for the prevention of the novel coronavirus infection, ② improving the epidemiological investigation system by understanding the infection situation in a timely manner, and ③ understanding the actual situation of the infection by genome analysis.

vii) Developing information systems

- Telework support for office terminals  
In AY 2019, the University upgraded its office information system, disconnected its critical office information system from the Internet, and equipped all office terminals (1,420 units) with

terminal virtualization technology to disconnect office information systems handling critical information from the Internet, and it also used VPN technology to enable access to office information systems without location restrictions. Full-scale operation started in AY 2020, and all operations that handle critical information are now performed in a secure virtual environment. In addition, the University made telework from home via the Internet possible, contributing to the promotion of telework. (Implemented by 443 (83.4%) out of 531 general employees)

- Enhancing the online learning management system (LMS)  
The LMS (Bb9) was enhanced for stable and continuous operation in response to the rapid increase in use due to the promotion of university-wide remote classes and active learning as countermeasures against the new coronavirus infection.  
Number of faculty members, staff members, and students using LMS: 97.1% (at the time of confirmation of use and annual renewal: 22,719 accounts/23,243 accounts) (March 2021)  
Number of courses offered by LMS: 25,738 (including 19,857 new courses) (Reference: Number of R1 courses: 6,183 [including 1,219 new courses]) (March 2021)

viii) Risk management and initiatives against the spread of the novel coronavirus

- To dispel the concerns of the University's various stakeholders and to establish a system that will allow the University to carry out its essential duties, the University sent out messages in a timely manner through the President's Message for students, faculty members, and staff members and through the Hiroshima University Community Meetings with guardians to share information on the direction in which the University is aiming to advance and the current status of its efforts against the new coronavirus infection.

<b>II Budget (includes labor cost estimates); income and expenditure plan and funding plan</b>
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Note: Please also refer to the University's financial statements and account settlement records.

<b>III Short-term borrowing limit</b>
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Medium-term plan attachment	Annual plan based on the medium-term plan attachment	Actual amount borrowed
1. Short-term borrowing limit 6,222,074 billion yen 2. Possible reason for borrowing Subsidy payments for covering operating costs could be delayed and/or unexpected expenses could arise due to accidents.	1. Short-term borrowing limit 6,222,074 billion yen 2. Possible reason for borrowing Subsidy payments for covering operating costs could be delayed and/or unexpected expenses could arise due to accidents.	None

<b>IV. Plans to transfer valuable assets to other entities or use any as collateral</b>
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Medium-term plan attachment	Annual plan based on the medium-term plan attachment	Actual amount borrowed
1. Plans to transfer valuable assets (1) Part of the Amamizuyama housing estate (located at 4-226-101 Ushita-shinmachi, Higashi Ward, Hiroshima City, Hiroshima Prefecture [117.63 m <sup>2</sup> ]) (2) The Hatsukaichi housing estate (located at 5-2585-9 Jigozen, Hatsukaichi City, Hiroshima Prefecture [332.73 m <sup>2</sup> ]) (3) Part of the Kasuga housing estate (located at 5-315-1 Kasugacho, Fukuyama City, Hiroshima Prefecture [216 m <sup>2</sup> ]) 2. Plans to use valuable assets as collateral The University's land/building will be used as collateral to secure a long-term loan to cover costs incurred for maintaining Hiroshima University Hospital's facilities and equipment.	None	None

<b>V. Use of surplus</b>
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Medium-term plan attachment	Annual plan based on the medium-term plan attachment	Actual amount borrowed
If any surplus is calculated at the end of any academic year, seek approval from the Minister of Education, Culture, Sports, Science and Technology for use as funds for improving the quality of the University's education and research and the operation of its organizations.	If any surplus is calculated at the end of the academic year, seek approval from the Minister of Education, Culture, Sports, Science and Technology for the use of surplus as funds for improving the quality of the University's education and research and the operation of its organizations.	The AY 2019 budget ended with a surplus of 1,605,774,724 yen; this amount is to be used in AY 2021 to maintain education and research and clinical environments.





		<ul style="list-style-type: none"> <li>• (Higashi-Hiroshima) Disaster recovery project</li> <li>• (Higashi-Hiroshima) Research Building renovation (biology)</li> <li>• Small-scale renovation</li> </ul>	maintenance grant (72)
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○ Plan implementation status

- (Higashi-Hiroshima) Regarding the critical infrastructure improvement (extra-high-voltage substation equipment) project, office expenses were not incurred. Accordingly, the estimated and actual amounts differed by 550,000 yen.
- (Kasumi) The Experiment Research Building (Research Institute for Radiation Biology and Medicine) project was rescheduled for AY 2021. Accordingly, the estimated and actual amounts differed by 9.537 million yen.
- (Higashi-Hiroshima) Due to the bid/ask spread on the lecture building project, the estimated and actual amounts differed by 41.966 million yen.
- Due to a change in the on-campus communication network maintenance project, the estimated and actual amounts differed by 14.437 million yen.
- (Higashi-Hiroshima) Due to the bid/ask spread on the Comprehensive Research Building renovation (biology) project, the estimated and actual amounts differed by 9.154 million yen.
- (Higashi Hiroshima) The Experimental Training Building (Bioscience) project was implemented and completed as planned.
- (Higashi-Hiroshima) Due to the bid-ask spread on the critical infrastructure improvement (electrical equipment) project, the estimated and actual amounts differed by 2.36 million yen.
- (Higashi-Hiroshima) The longevity promotion project was implemented and completed as planned.
- (Midori and other areas) The University received a 30.91 million yen grant for its core/environmental equipment (sanitary measures) project, which was unexpected at the time its annual plan was formulated, and due to the bid/ask spread, the estimated and actual amounts differed by 3.07 million yen.
- The University received a supplementary grant of 87.78 million yen for its (Kasumi) University Hospital multipurpose triage space maintenance project, which was unexpected at the time its annual plan was formulated, and this was incorporated into its AY 2020 budget, with the entire amount being carried over to its AY 2021 budget.

- (Higashi-Hiroshima) The University received a 1.038 million yen grant for a disaster recovery project, which was unexpected at the time its annual plan was formulated, and this was incorporated into its AY 2020 budget, within which the project was funded and completed.
- (Higashi-Hiroshima) The University received a supplementary grant of 687.66 million yen for the (Higashi-Hiroshima) Research Building renovation (biology) project, which was unexpected at the time its annual plan was formulated, and this was incorporated into its AY 2020 budget, with the entire amount being carried over to its AY 2021 budget.
- The small-scale renovation project was implemented and completed as planned.

**VI. Miscellaneous: 2. Human Resources**

Medium-term plan attachment	Annual plan based on the medium-term plan attachment	Actual amount borrowed
<p>(1) Strategic allocation of the University's resources Centralize the management of instructor labor costs—currently managed by individual schools/offices—and do so under the leadership of the President and also by using the University's IR indicators, including the Achievement-motivated Key Performance Indicators (AKPIs)—which suggest the level of performance of faculty members as instructors and researchers—to strategically assign personnel and thereby strengthen the University's education and research capacities.</p> <p>(2) Attracting diverse and talented personnel</p> <p>① Improve the University's chances of attracting more talented instructors from regions throughout Japan and the world to strengthen its education and research capacities, and take the following actions to do so: 1) increase the number of instructors paid under the annual-salary and cross-appointment systems by promoting the elasticity of the human resources and salary systems; and 2) increase the number of instructors who hold international citizenship, have taught or conducted research abroad, and/or are under the age of 40.</p> <p>② Strengthen the University's capacity to support education and research activities, and to do so, implement a staff cultivation plan designed to improve human resources by employing, transferring, promoting, and training personnel, such as to increase the number of staff who hold international citizenship and/or have worked abroad.</p> <p>(3) Promoting gender equality</p> <p>① Receive approval for the University's (third-term) General Business Owner Action Plan from the Ministry of Health, Labour and Welfare by the end of AY 2019, and to do so, promote a good work-life balance for faculty and staff in ways that comply with the following rules and regulations: 1) the basic policy of the Hiroshima University Gender Equality Declaration and 2) the Act on Advancement of Measures to Support Raising Next-Generation Children.</p> <p>② Actively promote female faculty and staff to decision-making positions in University management, and to do so, increase the number of female instructors and managers.</p>	<p>(1) Strategic allocation of the University's resources Continue to strategically assign personnel by centralizing the management of faculty personnel expenses under the President and using the University's IR indicators, including the Achievement-motivated Key Performance Indicators (AKPIs®), which suggest faculty members' levels of performance as instructors and researchers, and the Basic Effort Key Performance Indicators (BKPIs®). In addition, implement improvement measures that reflect the results of the previous academic year's verification.</p> <p>(2) Attracting diverse and talented personnel</p> <p>① Improve the University's chances of attracting more talented instructors from regions throughout Japan and the world to strengthen its education and research capacities, and take the following actions to do so: 1) increase the number of instructors paid under the annual-salary and cross-appointment systems by promoting the elasticity of the human resources and salary systems; 2) strategically assign personnel based on the Teacher Deployment Policy; and 3) increase the number of instructors paid under the annual-salary system who hold international citizenship, have taught or conducted research abroad, and/or are under the age of 40.</p> <p>② Improve human resources, based on a staff cultivation plan that includes the following measures: 1) employ, transfer, promote, and train personnel; 2) increase the number of staff who hold international citizenship and/or have worked abroad, and to do so, employ staff with international citizenship and provide existing staff with overseas training programs.</p> <p>(3) Promoting gender equality</p> <p>① To maintain a workplace environment that encourages faculty and staff to have a good work-life balance by using its support systems, continue to conduct surveys on the use of the University's support systems. Since the (third-term) General Business Owner Action Plan needs to be submitted for approval during AY 2020 due to the conditions for approval being revised, submit the University's (third-term) General Business Owner Action Plan for approval in accordance with the Act on Advancement of Measures to Support Raising Next-Generation Children.</p> <p>② Actively promote female faculty and staff to decision-making positions in University management, and to do so, increase the number of female instructors and managers based on the Teacher Deployment Policy.</p>	<p>Refer to "3. Highly strategic and ambitious objectives and plans" on pp. 38 and 39.</p> <p>Refer to "3. Highly strategic and ambitious objectives and plans" on pp. 37, 39 and 40.</p> <p>Refer to "3. Highly strategic and ambitious objectives and plans" on p. 37. Refer to "(1) Points to note regarding efforts put into improving and optimizing business operations" on p. 47.</p> <p>Refer to "(1) Points to note regarding efforts put into improving and optimizing business operations" on p. 47.</p> <p>Refer to "3. Highly strategic and ambitious objectives and plans" on pp. 40 and 41.</p>

**○ Attachment 1 (enrollment capacity fulfillment rates by undergraduate school/department and graduate school/program)**

Schools, departments, graduate schools, and programs	Capacity	Enrollees	Enrollment capacity fulfillment rate
[Undergraduate schools]	(a)	(b)	(b) / (a) × 100
	(student)	(student)	(%)
School of Integrated Arts and Sciences, Department of Integrated Arts and Sciences	490	571	116.5
Department of Integrated Global Studies	120	127	105.8
Total	610	698	114.4
School of Letters, Humanities	550	604	109.8
School of Education, Cluster 1 (School Education)	631	651	103.1
Cluster 2 (Science, Technology, and Society Studies Education)	334	361	108.0
Cluster 3 (Language and Culture Education)	303	331	109.2
Cluster 4 (Lifelong Activities Education)	331	356	107.5
Cluster 5 (Fundamentals for Education and Human Development)	211	232	109.9
Total	1,810	1,931	106.6
School of Law, Department of Law, Day Program	580	617	106.3
Evening Program	150	161	107.3
Total	730	778	106.5
School of Economics, Department of Economics, Day Program	610	676	110.8
Evening Program	205	221	107.8
Total	815	897	110.0
School of Science, Department of Mathematics	188	204	108.5
Department of Physics	264	300	113.6
Department of Chemistry	236	262	111.0
Department of Biological Science	136	149	109.5
Department of Earth and Planetary Systems Science	96	108	112.5
Third-year school-internal transfer	20	11	55.0
Total	940	1,034	110.0
School of Medicine, Program of Medicine	718	734	102.2
Program of Health Sciences	480	498	103.7
Total	1,198	1,232	102.8
School of Dentistry, Program of Dentistry	318	328	103.1
Program of Oral Care Science	160	166	103.7
Total	478	494	103.3

Schools, departments, graduate schools, and programs	Capacity	Enrollees	Enrollment capacity fulfillment rate
	(a)	(b)	(b) / (a) × 100
	(student)	(student)	(%)
School of Pharmaceutical Sciences, Program of Pharmaceutical Sciences	228	240	105.2
Program of Medicinal Sciences	88	98	111.3
Total	316	338	106.9
School of Engineering cluster 1 (Mechanical Systems, Transportation, Material and Energy)	455	463	101.7
Cluster 2 (Electrical, Electronic and Systems Engineering)	273	284	104.0
Cluster 3 (Applied Chemistry, Biotechnology and Chemical Engineering) (Note 1)	464	488	105.1
Cluster 4 (Civil Engineering and Architecture)	273	291	106.5
Cluster 1 (Mechanical Systems Engineering) (Note 2)		136	
Cluster 2 (Electrical, Electronic and Systems Engineering) (Note 2)		176	
Cluster 4 (Civil Engineering and Architecture) (Note 2)		145	
Total	1,465	1,526	104.1
School of Applied Biological Science, Department of Applied Biological Science	380	425	111.8
School of Informatics and Data Science, Department of Informatics and Data Science	245	264	107.7
<b>Undergraduate school total</b>	<b>9,537</b>	<b>10,221</b>	<b>107.1</b>
<b>[Master's programs]</b>			
Graduate School of Humanities and Social Sciences, Division of Humanities and Social Sciences	257	154	59.9
Division of Educational Sciences	163	169	103.6
Joint International Master's Programme in Sustainable Development (Hiroshima University and University of Graz)	2	0	0.0
Total	422	323	76.5
Graduate School of Advanced Science and Engineering, Division of Advanced Science and Engineering	449	476	106.0
Joint International Master's Programme in Sustainable Development (Hiroshima University and Leipzig University)	2	0	0.0
Total	451	476	105.5
Graduate School of Integrated Sciences for Life, Department of Integrated Sciences for Life	340	317	93.2
Graduate School of Biomedical and Health Sciences, Division of Integrated Health Sciences	152	143	94.0
Graduate School of Integrated Art and Sciences, Department of Integrated Arts and Sciences (Note 2)		89	
Graduate School of Letters, Department of Integrated Humanities (Note 2)		113	

Schools, departments, graduate schools, and programs	Capacity	Enrollees	Enrollment capacity fulfillment rate
	(a)	(b)	(b) / (a) × 100
	(student)	(student)	(%)
Graduate School of Education, Program in Learning and Curriculum Development	(Note 2)	33	
Program in Curriculum and Instruction Sciences	(Note 2)	102	
Program in Teaching Japanese as a Second Language	(Note 2)	18	
Program in Educational Studies	(Note 2)	18	
Program in Psychology	(Note 2)	22	
Program in Higher Education	(Note 2)	8	
Total		201	
Graduate School of Social Sciences, Department of Law and Politics	(Note 2)	44	
Department of Economics	(Note 2)	62	
Department of Management Studies	(Note 2)	39	
Total		145	
Graduate School of Science, Department of Mathematics	(Note 2)	17	
Department of Physical Science	(Note 2)	36	
Department of Chemistry	(Note 2)	39	
Department of Biological Science	(Note 2)	6	
Department of Earth and Planetary Systems Science	(Note 2)	11	
Total		109	
Graduate School of Advanced Sciences of Matter, Department of Quantum Matter	(Note 2)	37	
Department of Molecular Biotechnology	(Note 2)	1	
Department of Semiconductor Electronics and Integration Science	(Note 2)	26	
Total		64	
Graduate School of Biomedical & Health Sciences, Medicinal Sciences Major	(Note 2)	1	
Health Sciences Major	(Note 2)	10	
Medical and Dental Sciences Major	(Note 2)	2	
Total		13	
Graduate School of Engineering, Department of Mechanical Systems Engineering	(Note 2)	37	
Department of Mechanical Science and Engineering	(Note 2)	50	
Department of System Cybernetics	(Note 2)	63	
Department of Information Engineering	(Note 2)	61	
Department of Chemical Engineering	(Note 2)	41	
Department of Applied Chemistry	(Note 2)	39	
Department of Civil and Environmental Engineering	(Note 2)	35	
Department of Transportation and Environmental Systems	(Note 2)	32	
Department of Architecture	(Note 2)	34	
Total		392	

Schools, departments, graduate schools, and programs	Capacity	Enrollees	Enrollment capacity fulfillment rate
	(a)	(b)	(b) / (a) × 100
	(student)	(student)	(%)
Graduate School of Biosphere Science, Department of Bioresource Science	(Note 2)	4	
Department of Biofunctional Science and Technology	(Note 2)	6	
Department of Environmental Dynamics and Management	(Note 2)	2	
Total		12	
Graduate School of International Development and Cooperation, Division of Development Science	(Note 2)	122	
Division of Educational Development and Cultural and Regional Studies	(Note 2)	87	
Total		209	
<b>Master's program total</b>	<b>1,365</b>	<b>1,259</b>	<b>92.2</b>
<b>[Doctoral programs]</b>			
Graduate School of Humanities and Social Sciences, Division of Humanities and Social Sciences	85	46	54.1
Division of Educational Sciences	50	54	108.0
Total	135	100	74.0
Graduate School of Advanced Science and Engineering, Division of Advanced Science and Engineering	128	53	41.4
Graduate School of Integrated Sciences for Life, Department of Integrated Sciences for Life	140	55	39.2
Graduate School of Biomedical and Health Sciences, Division of Biomedical Sciences	194	207	106.7
Division of Integrated Health Sciences	50	41	82.0
Total	244	248	101.6
Graduate School of Integrated Art and Sciences, Department of Integrated Arts and Sciences	(Note 2)	70	
Graduate School of Letters, Department of Integrated Humanities	(Note 2)	99	
Graduate School of Education, Program in Education and Learning Science	(Note 2)	204	
Program in Learning and Curriculum Development	(Note 2)	4	
Program in Arts and Science Education	(Note 2)	16	
Program in Education and Human Science	(Note 2)	19	
Total		243	
Graduate School of Social Sciences, Department of Law and Politics	(Note 2)	12	
Department of Economics	(Note 2)	10	
Department of Management Studies	(Note 2)	37	
Total		59	
Graduate School of Science, Department of Mathematics	(Note 2)	12	
Department of Physical Science	(Note 2)	30	

Schools, departments, graduate schools, and programs	Capacity	Enrollees	Enrollment capacity fulfillment rate
	(a)	(b)	(b) / (a) × 100
	(student)	(student)	(%)
Department of Chemistry	(Note 2)	32	
Department of Biological Science	(Note 2)	7	
Department of Earth and Planetary Systems Science	(Note 2)	8	
Department of Mathematical and Life Sciences	(Note 2)	9	
Total		98	
Graduate School of Advanced Sciences of Matter, Department of Quantum Matter	(Note 2)	8	
Department of Molecular Biotechnology	(Note 2)	7	
Department of Semiconductor Electronics and Integration Science	(Note 2)	5	
Total		20	
Graduate School of Biomedical & Health Sciences, Biomedical Sciences Major	(Note 2)	337	
Oral Health Sciences Major	(Note 2)	9	
Medicinal Sciences Major	(Note 2)	7	
Health Sciences Major	(Note 2)	88	
Total		441	
Graduate School of Engineering, Department of Mechanical Systems Engineering	(Note 2)	19	
Department of Mechanical Science and Engineering	(Note 2)	30	
Department of System Cybernetics	(Note 2)	31	
Department of Information Engineering	(Note 2)	19	
Department of Chemical Engineering	(Note 2)	19	
Department of Applied Chemistry	(Note 2)	12	
Department of Civil and Environmental Engineering	(Note 2)	23	
Department of Transportation and Environmental Systems	(Note 2)	19	
Department of Architecture	(Note 2)	15	
Total		187	
Graduate School of Biosphere Science, Department of Bioresource Science	(Note 2)	20	
Department of Biofunctional Science and Technology	(Note 2)	12	
Department of Environmental Dynamics and Management	(Note 2)	9	
Total		41	
Graduate School of Biomedical Sciences, Programs for Biomedical Research	(Note 2)	4	
Programs for Applied Biomedicine	(Note 2)	2	
Total		6	
Graduate School of International Development and Cooperation, Division of Development Science	(Note 2)	50	
Division of Educational Development and Cultural and Regional Studies	(Note 2)	47	
Total		97	

Schools, departments, graduate schools, and programs	Capacity	Enrollees	Enrollment capacity fulfillment rate
	(a)	(b)	(b) / (a) × 100
	(student)	(student)	(%)
<b>Doctoral program total</b>	<b>647</b>	<b>456</b>	<b>70.4</b>
<b>[Professional degree program]</b>			
Graduate School of Humanities and Social Sciences, Professional Development Program for Teachers and School Leaders	30	24	80.0
Graduate School of Humanities and Social Sciences, Division of Law School	20	18	90.0
Graduate School of Education, Professional Development Program for Teachers and School Leaders	(Note 2)	21	
Hiroshima University Law School, Program in Law	(Note 2)	27	
<b>Professional degree program total</b>	<b>50</b>	<b>42</b>	<b>84.0</b>
<b>[Advanced Course]</b>			
Special Education Major Program	30	23	76.6
<b>Advanced Course total</b>	<b>30</b>	<b>23</b>	<b>76.6</b>

Schools, departments, graduate schools, and programs	Capacity	Enrollees	Enrollment capacity fulfillment rate
	(a)	(b)	(b) / (a) × 100
	(student)	(student)	(%)
<b>[Attached schools]</b>			
Hiroshima University Elementary School; number of classes: 12	384	382	99.4
Hiroshima University Elementary School, Shinonome; number of classes: 18	456	427	93.6
Hiroshima University Elementary School, Mihara; number of classes: 12	384	376	97.9
Hiroshima University Junior High School; number of classes: 9	360	379	105.2
Hiroshima University Junior High School, Shinonome; number of classes: 9	264	254	96.2
Hiroshima University Junior High School, Mihara; number of classes: 6	240	240	100.0
Hiroshima University Junior High School, Fukuyama; number of classes: 9	360	365	101.3
Hiroshima University Senior High School; number of classes: 15	600	603	100.5
Hiroshima University Senior High School, Fukuyama; number of classes: 15	600	598	99.6
Hiroshima University Kindergarten; number of classes: 3	80	69	86.2
Hiroshima University Kindergarten, Mihara; number of classes: 3	80	80	100.0
<b>Attached school total</b>	<b>3,808</b>	<b>3,773</b>	<b>99</b>

(Note 1) The names of the majors that comprise the School of Engineering's cluster 3 (i.e., Chemistry, Biotechnology and Process Engineering) were changed in AY 2018 to Applied Chemistry, Biotechnology and Chemical Engineering, respectively.

(Note 2) Departments (of both undergraduate and graduate schools) not on the list have been reorganized and are no longer accepting applications.



## ○ Plan implementation status

### (1) Enrollment capacity fulfillment rates (as of May 1)

The enrollment capacity fulfillment rates of undergraduate schools averaged a generally satisfactory 107.1%.

The enrollment capacity fulfillment rates of master's programs averaged a generally satisfactory 92.2%.

The enrollment capacity fulfillment rates of all doctoral courses averaged 70.4%—unsatisfactorily below the limit.

The enrollment capacity fulfillment rates of professional degree programs averaged 84%—unsatisfactorily below the limit.

The enrollment capacity fulfillment rates of advanced courses averaged 76.6%—unsatisfactorily below the limit.

### (2) Main reasons enrollment capacity fulfillment rates averaged below 90%

#### [Doctoral programs]

##### Graduate School of Humanities and Social Sciences

###### (Reason)

① The Graduate School was established in April 2020, and as of May 1, 2020, the enrollment capacity fulfillment rate for the Division of Educational Sciences reached 108%, while the rate for the Division of Humanities and Social Sciences was only 54.1%. In the Division of Humanities and Social Sciences, 7 out of 8 of its programs have a selection schedule for students who will enter in October. In addition, the Division mainly targets international students, so its programs are characteristic of having a high percentage of students who enter in October.

The enrollment capacity fulfillment rate of the Division of Humanities and Social Sciences, including students admitted in October, has improved to 76.5% as of November 1, and the percentage for the entire Graduate School has improved to 94.8%.

② The spread of the novel coronavirus infection has limited examination opportunities, and this is especially so for international students who came to be unable to travel to Japan to take examinations.

③ The Graduate School could not sufficiently convey the appeal of its educational philosophy and curriculum, which is to foster interdisciplinary and transdisciplinary human resources with great expertise. Therefore, in the case of some potential applicants, the anxiety about the dilution of expertise must have exceeded the expectation of the added benefit of fostering interdisciplinary and transdisciplinary human resources. In addition, being a new graduate school, the Graduate School lacked a track record of post-graduation career paths, which also must have worked to its disadvantage.

###### (Measures)

The following efforts have improved the Graduate School's enrollment capacity fulfillment rate, including students enrolled in October, and the Graduate School will continue to improve and strengthen these efforts to increase the ratio of applicants and the number of students enrolled.

① To increase the number of applicants for the October 2020 entrance examinations, the Graduate School enhanced its website, created and distributed recruitment flyers on and off campus, created a presentation video for the "Online Study Abroad Information Session with Chinese Partner Institutions," and held entrance examination guidance and consultation sessions (including online sessions). In addition, to make it widely known that its curriculum is designed for students entering in October, including international students, the Graduate School completely digitized both its student handbook and application guidebook and posted them on its website.

② As a countermeasure against the novel coronavirus infection, the Graduate School previously began to shift from examinations in person to online examinations, and for the entrance examinations held in February, it further promoted this shift. In addition, regarding screenings that require applicants to submit proof of language qualifications obtained through external examinations, the Graduate School expanded the scope of such external examinations and the expiration dates of such qualifications to ensure fairness between applicants and opportunities for examination.

③ To make its educational philosophy widely known to the public, the Graduate School made an electronic version of its graduate-school brochure available on its website (in Japanese and English). In addition, to communicate the appeal of the Graduate School to international students and also dispel their concerns about the coronavirus infection, the Graduate School created a video message from its Dean with English and Chinese subtitles and posted it on its website.

④ The Graduate School was selected by the Ministry of Education, Culture, Sports, Science and Technology as an organization to undertake its Fellowship Founding Project for Innovation Creation in Science and Technology. Accordingly, in AY 2021, it began certifying and supporting talented doctoral students as research fellows.

##### Graduate School of Advanced Science and Engineering

###### (Reason)

① The Graduate School was established in April 2020, and the enrollment capacity fulfillment rate as of May 1, 2020 was 41.4%. However, since the Graduate School had a selection schedule designed for students to enter in October and mainly targeted international students, the enrollment capacity fulfillment rate as of November 1, 2020, including students who entered in October, improved to 82%.

② The spread of the novel coronavirus infection made it practically impossible for international students to come to Japan, causing enrollment to be sluggish, which likely was one of the reasons the enrollment capacity was not fulfilled.

###### (Measures)

The following measures will be taken to fulfill the enrollment capacity of the doctoral course. From here on, the Graduate School will make the following measures widely known to attract talented doctoral students from Japan and abroad.

The number of students enrolled in April 2021 increased by 11, compared to the previous year, and reached 64.

① The Graduate School will establish a system to provide fair and continuous support to doctoral students in the Graduate School of Advanced Science and Engineering and will begin implementing the system in AY 2021. [Graduate School of Advanced Science and Engineering Scholarships: 300,000 yen per year for all doctoral students except those receiving scholarships totaling more than 100,000 yen per month]

② The Graduate School was selected by the Ministry of Education, Culture, Sports, Science and Technology as an organization to undertake its Fellowship Founding Project for Innovation Creation in Science and Technology. Accordingly, in AY 2021, it began certifying and supporting talented doctoral students as research fellows.

##### Graduate School of Integrated Sciences for Life

###### (Reason)

① The Graduate School was established in April 2019, and at the time of its inception, the Graduate School expected to fulfill its enrollment capacity by establishing a Program of Biomedical Science, for which there was a high demand according to a survey of science-major undergraduate students. However, the number of internal students who entered the doctoral course by AY 2020 was limited to those who had completed the master's course of the former Graduate School, which is the parent school of the current Graduate School. Therefore, the number of students who enrolled in the doctoral course was limited to the small number of graduates of the master's course, and the number of students who actually proceeded to the doctoral course after completing the master's course was limited as well, which is likely why the Graduate School was unable to fulfill its enrollment capacity. However, in April 2021, when the first-year graduates of the Graduate School proceeded to the doctoral course, the number of internal students who entered the doctoral course increased, and the Program of Biomedical Science attracted more students than the standard capacity.

② The number of international students was 15 in both AY 2019 and AY 2020, and in AY 2020, the spread of the novel coronavirus infection made it practically impossible for international students to come to Japan, causing enrollment to be sluggish, which likely was one of the reasons the enrollment capacity was not fulfilled. The number of international students accounts for 20% of the Graduate School's enrollment capacity. Therefore, from here on, the Graduate School needs to strengthen the recruitment of international students in all of its programs. In addition, the Graduate School was not able to attract working adult students, which is also likely one of the reasons it was unable to fulfill its enrollment capacity.

###### (Measures)

① To increase the number of internal students proceeding to the doctoral course and students entering from other universities, the Graduate School launched a support program that will enable students to obtain an amount equivalent to their full cost of tuition by working as RAs and receiving scholarships. In AY 2021, when the Graduate School's internal students who completed its master's course proceeded to its doctoral course, the number of doctoral-course enrollees increased. Therefore, the Graduate School believes that the enhancement of support measures that were taken this academic year will bring a future increase in the number of the following types of students to proceed to the Graduate School's doctoral course: 1) internal students who completed its master's course and 2) Japanese students from other universities.

② The number of "Special Programs for Priority Placement of Government-Sponsored International Students" was increased as an initiative to increase the number of international students. Therefore, the number of government-sponsored international students can be expected to increase. This increased quota of government-sponsored international student candidates for admission in October 2021 includes a number of candidates for programs that previously only welcomed few international students. In addition, the Graduate School could serve as a host school of international students dispatched by their country's government.

The Graduate School decided to actively implement the preceding project, and it established a student support program that will provide full tuition support to privately financed international students. By making these efforts, the Graduate School aims to attract international students to all of its programs. In addition, to attract working adult students to all of its programs, the Graduate School is currently preparing a booklet summarizing each faculty member's research activities, which it plans to distribute to joint research institutions.

③ The Graduate School was selected by the Ministry of Education, Culture, Sports, Science and Technology as an organization to undertake its Fellowship Founding Project for Innovation Creation in Science and Technology. Accordingly, in AY 2021, it began certifying and supporting talented doctoral students as research fellows.

#### [Professional degree program]

##### Graduate School of Humanities and Social Sciences, Professional Development Program for Teachers and School Leaders

(Reason)

This program was transferred from the Graduate School of Education to the Graduate School of Humanities and Social Sciences due to the reorganization of graduate schools in AY 2020. The following facts likely affected the Graduate School's performance: ① The enrollment capacity was increased by 10 from 20 to 30. ② As was the case in AY 2019, the enrollment capacity of graduate schools of teacher education has increased nationwide, making it difficult to secure students nationwide. (The enrollment capacity increased by 645 students in AY 2019 and by 196 students in AY 2020. In addition, the national average enrollment capacity fulfillment rate was 80.3% in AY 2019 and 81% in AY 2020.)

③ The number of undergraduate students hired as teachers immediately after graduation has been on the rise recently, and an increasing number of students therefore are choosing to work as teachers rather than enter a graduate school of teacher education. ④ There has been a decrease in the number of in-service teachers dispatched by boards of education (decreased by 2 teachers compared to AY 2019). ⑤ There has been insufficient promotion of the existence of the University's Professional Development Program for Teachers and School Leaders. (Although the numbers of applicants and admitted students were 26 and 24, respectively, which are the highest numbers since the establishment of the Professional Development Program for Teachers and School Leaders in AY 2016, the enrollment capacity fulfillment rate itself has still decreased.)

(Measures)

To inform the public of the type of person the Professional Development Program for Teachers and School Leaders aims to cultivate and the educational activities it conducts, the Graduate School newly created a publicity video in AY 2020 and has made it permanently available on the University's website (Professional Development Program for Teachers and School Leaders). In addition, to make it easier for prospective students from all over the nation to participate in the Program's entrance examination briefings, the Program is systematically holding entrance examination briefings online (TV conference system). (In AY 2020, the Program held six online entrance examination briefings and set up opportunities for individual consultations according to the needs of individual applicants.) In addition, to enhance the educational practice skills of graduate students and also inform undergraduate students of the educational activities conducted at the Professional Development Program for Teachers and School Leaders, the Program systematically and strategically carried out Practical Skills Improvement Projects. (The projects were carried out five times in the first semester and six times in the second semester, welcoming 88 participants [10 graduate students and 78 undergraduate students].) The results of in-service teachers' studies are reported to the Hiroshima Prefectural Board of Education, the Hiroshima City Board of Education, the Higashi-Hiroshima City Board of Education, and other relevant organizations through presentations at the Professional Development Program for Teachers and School Leaders and liaison meetings. In addition, as it has been doing in the past, the Program is requesting dispatch of in-service teachers. As a result of these efforts, the Program's AY 2021 entrance examination welcomed one more in-service graduate-student teacher, dispatched from a board of education, and the total number of applicants for the Professional Development Program for Teachers and School Leaders surpassed its admission capacity (with 31 applicants).

#### [Advanced Course] Special Education Major Program

##### Special Education Major Program

(Reason)

① Municipalities currently cannot afford to allow boards of education to provide as many teachers with graduate school education as they used to. ② Because municipalities currently hire a larger number of both full-time and part-time teachers than they used to—in preparation for an impending large number of retirees—opportunities to teach are even available to first-year teachers just out of undergraduate school. ③ The self-promotion efforts of the Special Education Major Program were likely not sufficient to reach those interested in obtaining a Special Support Education Teaching License. ④ The Special Support Education Teaching License (for teaching the mentally handicapped, the physically handicapped, and the sick) has also become obtainable at private universities.

The University's Special Education Major Program is not the only one unable to fulfill its enrollment capacity; other national universities with Advanced Courses also face this issue.

On the other hand, in response to the following trends, municipalities are currently trying to improve Special Support Education, such as by giving priority to applicants with Special Support Education Teaching Licenses in addition to other teaching licenses for particular subjects and also by employing those who are endeavoring to obtain a Special Support Education Teaching License on the condition that they first obtain the license before they actually begin teaching: 1) increase in the number of children in need of special support education; 2) sharp increase in the number of special support education classes; 3) request that special support education providers obtain a Special Support Education Teaching License; 4) introduction of mainstreaming into high school education, which began in AY 2018; and 5) the central government's decision to make obtaining a Special Support Education Teaching License the goal of all special support education providers.

(Response)

As it did last academic year, regarding the field of special support education, the Special Education Major Program will continue to ask boards of education of Hiroshima Prefecture, Hiroshima City, and municipalities in the Prefecture and western Japan to encourage their teachers to endeavor to obtain Special Support Education Teaching Licenses in the Program. The Special Education Major Program will also strengthen its self-promotion efforts in the following ways: 1) update its website and 2) produce flyers and post them on bulletin boards and circulate them both on and off campus. In addition, it will ask special support schools in Hiroshima Prefecture for help in handing out the flyers to students they welcome in nursing training programs. Regarding graduates completing the Program in AY 2020, 18 (including one existing teachers) out of a total of 22 graduates who graduated from the Program that year found jobs at special support education schools and elementary, junior high, and high schools before graduating, reflecting the trend that Special Support Education Teaching Licensees have an advantage over those without licenses in finding teaching jobs.

Therefore, the Program is confident that promoting its one-year program for helping participants obtain the Type-One Special Support Education Teaching License will raise its enrollment capacity fulfillment rate to satisfactory levels. In AY 2020, ① to increase the number of in-service teachers, every time course instructors had the chance, they introduced the Program to the prefectural board of education and municipal boards of education and requested boards of education to dispatch in-service teachers. In addition, ② the Program prepared an A4-size leaflet and sent it to major universities with teacher training courses in western Japan and requested all special support schools in the prefecture offering nursing care training to distribute the leaflet to all students they welcome, including those from other universities. Furthermore, ③ instructors who teach the Program held two briefing sessions (Higashi-Hiroshima). In AY 2021, the Program plans to hold an online briefing session on Saturdays to facilitate the participation of in-service teachers, including those who have been temporarily hired. In the future, the Program will also consider delivering some of its courses online to reduce the burden on students.

Students who have enrolled in the Program so far have found out about the Program through website searches, leaflets, and referrals from teachers. Therefore, the Program will continue to put effort into updating its website, distributing leaflets, and asking students for promotional help. In addition, the Program recognizes that the number of enrollees from Hiroshima University is increasing, and accordingly it will distribute leaflets to students taking the core teaching curriculum course "Special Support Education" (a course to be offered officially beginning in AY 2021), which all students pursuing a teaching license must take. In addition, the Program will continue to post flyers on campus, and in doing so, instead of only posting them on the walls along the hallways and on bulletin boards of its own building, it will ask other schools/departments to do the same in their own buildings, including their study rooms.