

Pay it Forward

NO POVERTY
ZERO HUNGER GOOD
HEALTH AND WELL-BEING
QUALITY EDUCATION GENDER
EQUALITY CLEAN WATER AND
SANITATION AFFORDABLE AND CLEAN
ENERGY DECENT WORK AND ECONOMIC
GROWTH INDUSTRY, INNOVATION AND
INFRASTRUCTURE REDUCED INEQUALITIES
SUSTAINABLE CITIES AND COMMUNITIES
RESPONSIBLE CONSUMPTION AND
PRODUCTION CLIMATE ACTION LIFE
BELOW WATER LIFE ON LAND PEACE,
JUSTICE AND STRONG INSTITUTIONS
PARTNERSHIPS FOR
THE GOALS

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Pay it Forward

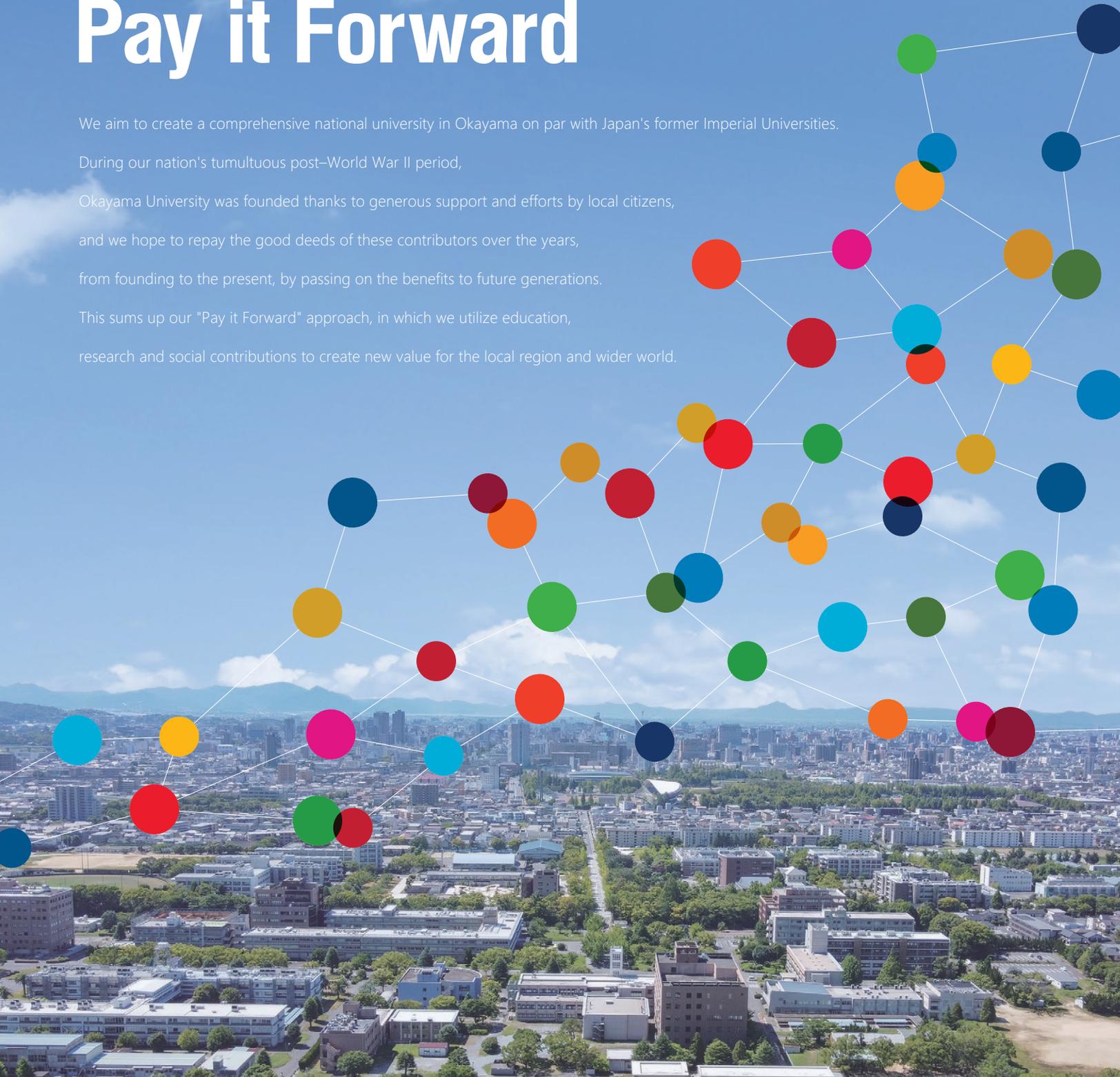
We aim to create a comprehensive national university in Okayama on par with Japan's former Imperial Universities.

During our nation's tumultuous post-World War II period,

Okayama University was founded thanks to generous support and efforts by local citizens, and we hope to repay the good deeds of these contributors over the years,

from founding to the present, by passing on the benefits to future generations.

This sums up our "Pay it Forward" approach, in which we utilize education, research and social contributions to create new value for the local region and wider world.



History of Okayama University

Innate Skills and Traditions that Enable Solving of Society's Problems, Passed Down as Part of Local History

The historical roots of Okayama education can be traced back to the Shizutani School, an institution created by the lord of Okayama Domain IKEDA Mitsumasa that served as Japan's first school for the common people.

Okayama has a long history of cultivating innovation for purposes of solving society's contemporary problems in each era, with past examples including to Tsuyama Western Learning which played a major role in Japan's modernization, the financial and educational reforms implemented by YAMADA Hokoku in the Bitchu-Matsuyama Domain, the Ohara Institute for Agricultural Research established by OHARA Magosaburo, the Takahashi River Valley League organized by OHARA Soichiro, and the Setouchi Triennale created by FUKUTAKE Soichiro as a sea restoration project, among others. The fruits of these efforts have been passed down through the generations as innate Okayama-region skills and traditions that enable solving of society's problems, and today we at Okayama University consider it our mission to cherish and pass these on again to future generations.

1670



Shizutani School for the general public founded by IKEDA Mitsumasa.

The school made its education, which is centered on Confucian principles, available to a wide variety of people and laid the foundations for Okayama-region education.

1949



Okayama University founded through generous local-citizen support and efforts toward university establishment in Okayama.

1922

Okayama Medical College founded.

It has achieved numerous successes as a medical school and is often considered the most prominent such university in western Japan on par with The University of Tokyo in eastern Japan.

1960



Faculty of Engineering established (in response to local aspirations for transformation of Okayama from an agricultural to an industrial prefecture).

1850

Financial and educational reforms implemented by YAMADA Hokoku in the Bitchu-Matsuyama Domain.

1914

Ohara Institute for Agricultural Research founded.

1900



The Sixth Higher School founded.

It promoted free-and-open, independent academic traditions and the pursuit of cultural refinement, and its young graduates went on to study specialized subjects at Imperial Universities and other prominent institutions before becoming leaders in their fields.

1870

Medical Training Place Sponsored by the Lord of Okayama founded.

2004



Okayama University incorporated as National University Corporation Okayama University.

2016

Okayama Round-Table Conference established.

Representatives from industry, government, academia, finance and the media serving as members began efforts to solve regional problems.

2008

Academic Capital concept established.

2019

First year of SDG University Management.

2017



University receives Special Award at the first Japan SDGs Award.



Okayama Global Academic Capital Headquarters established.

Pursues new innovations and societal transformations together with the local region.

2005

Okayama region certified as a Regional Centre of Expertise (RCE) on ESD, making it one of the seven RCEs worldwide.

2007



United Nations Educational, Scientific and Cultural Organization

UNESCO Chair in Research and Education for Sustainable Development, Okayama University, Okayama City, Japan

UNESCO Chair (first in Asia) established at the University.

1994



Faculty of Environmental Science and Technology

established as the first environment-focused department at a national university in Japan.

Going beyond, toward a fruitful academic capital: inheriting and developing the University's academic capital concept

Creating an "academic capital" means creating an international academic city for Okayama. The University established its academic capital vision more than a decade ago, back in 2008. At the start of his second term as University president, CHIBA Kyozo (who served in the position from 2005 to 2010) announced his goal of creating the Okayama academic capital. President CHIBA aimed to utilize the unique characteristics of his large-scale, comprehensive university to position Okayama as the academic capital for the Chugoku-Shikoku region. The next president, MORITA Kiyoshi (who served in the position from 2011 to 2016), strove to make the University into a "beautiful academic capital" that serves as an international center of research and education. To this end, he promoted community development efforts through closely coordinated, seamlessly integrated development involving the University, Okayama City and the local region, which resulted in the creation of numerous venues for exchange. After this, President MAKINO Hirofumi (president since 2017) focused on the "fruitful academic capital" ideal which incorporates pursuit of the Sustainable Development Goals (SDGs). In FY 2019, President MAKINO launched SDG University Management in order to make contributions toward SDG achievement a central part of university operations.

A Research University for the Advancement of SDGs and Well-being that Continues to Create and Deliver New Value from Okayama to the World

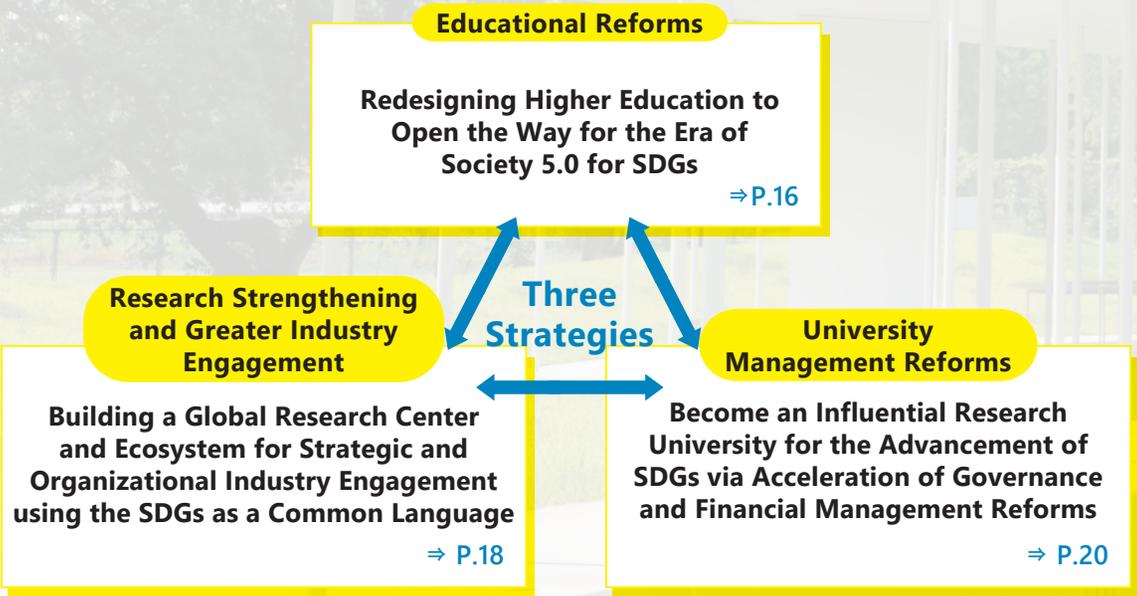
Okayama University Long-term Vision 2030

As a research university that pursues sustainability and well-being, we will train human resources and foster innovations for society to create new value for the local region and wider world.

By working together with various stakeholders, we aim to achieve an international academic capital in Okayama boasting exceptional sustainability and inclusiveness.

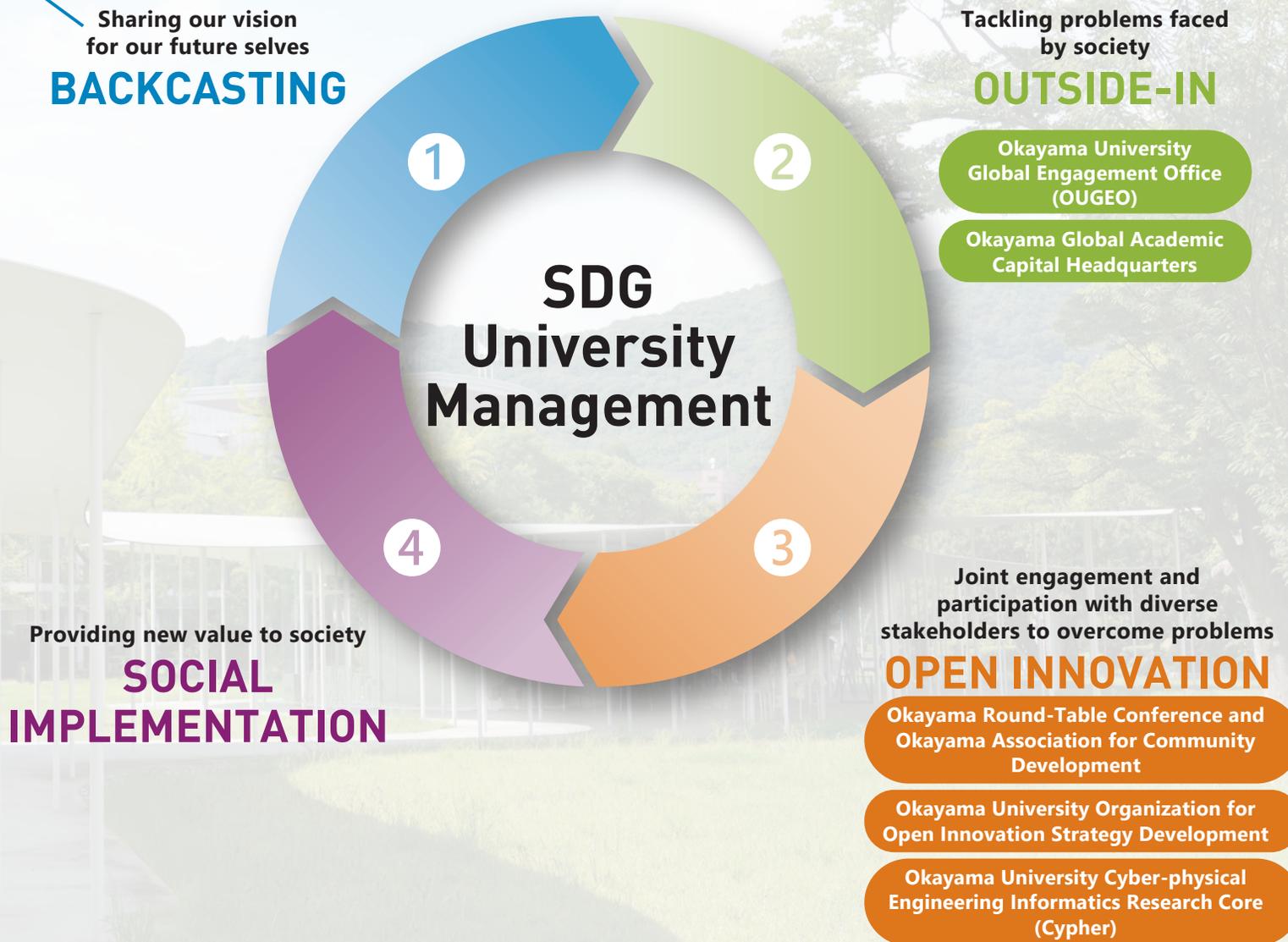


2019-2021
Okayama University Vision 2.0
A Research University for the Advancement of SDGs and Well-being that Continues to Create and Deliver New Value from Okayama to the World: Realization of SDG University Management



https://www.okayama-u.ac.jp/eng/about_okayama_university/ou-vision.html

Positioning FY 2019 as our first year of SDG University Management—a year centered firmly on contributing to the achievement of SDGs—we have established Okayama University Vision 2.0 and Okayama University Long-term Vision 2030 which encompass all University functions including education, research and social implementation. More specifically, by making use of four processes related to these visions and taking advantage of the intellectual resources of the University to earn the trust of society and pursue SDG University Management, we will be able to continue creating new value and, together with everyone, achieve our shared future vision of ourselves.



Message from the President :

SDG University Management and Engagement

When I was formally inaugurated president, I declared my commitment to two things: Carrying on the Academic Capital Plan I inherited at that time and which Okayama University has been pursuing since its incorporation; and striving toward the realization of Okayama University's vision of "Creating a Socially Engaged Academic Center" with the ultimate target of achieving the United Nation's Sustainable Development Goals (SDGs). Since I have taken office, Okayama University has developed a university-wide initiative which resulted in the formulation of the Action Guidelines of Okayama University on the SDGs. This involves building partnerships with various international organizations and key regional stakeholders in industry, government, academia, financial and media sectors, as well as the publication of Selected cases in Okayama University to Promote SDGs. Meanwhile, taking a looking outside of the university, the Okayama Association of Corporate Executives has announced their intention to focus their activities on the SDGs. Moreover, Okayama City along with neighboring local governments, such as Maniwa City, Kurashiki City, and Nishi-Awakura Village have been chosen as SDGs Future City.

At our 70th anniversary in the 2019 fiscal year, Okayama University made the decision as a leading research higher education institution in Japan to launch the implementation of SDG University Management in order to pursue sustainability and well-being—a state of physical, psychological, and social health. SDG University Management means that Okayama University has integrated the SDGs into our institutional vision, places them in the center of our strategic development plan, and is incorporating the SDGs into society through our whole-university enterprise in education, research, and social implementation. In other words, we aim to earn trust from various stakeholders in larger society by utilizing our university resources of academic knowledge and wisdom following a four-step process: First, "back-casting"; second, "outside-in"; third, "open innovation"; and finally, "social implementation". In a three-year action plan designed under Okayama University Vision 2.0, Okayama University implemented back-casting to create an image of what we want our organization to look like according to the Okayama University Long-term Vision 2030.

In addition to this move by Okayama University management, I have created a new executive leadership position, the Vice President for Global Engagement Strategy, who was also appointed to represent Okayama University as the UNESCO Chair in Research and Education for Sustainable Development.

Since implementing these changes, Okayama University has been pushing forward with its global engagement strategy, which applies and expands the resources of the university's education and research as well as those of the local community to global-scale issues. All of this is accomplished in direct collaboration with various stakeholders, including international organizations. In recent years, global engagement that is responsible, meaningful, and provides mutual benefits through collaboration with the entire world has been promoted at universities worldwide. This strategy aims to make the strengths and characteristics of the university and the local community valuable assets and to drive the university as a global gateway to the region by direct collaboration with like-minded international organizations.

Today, private firms are pushing toward the SDGs, which are comprised of more ethical elements evolved from the previous Corporate Social Responsibility (CSR) model. Similarly, universities were also required to pursue the goal of University Social Responsibility (USR); however, now many universities are now developing their own SDGs activities. If it is safe to say that conventional university community services management is "seeds-oriented USR", then SDG University Management could be defined as "needs-oriented USR" that focuses on regional and global issues and aligns university functions to provide creative solutions for them. As the term Environmental, Social, and Governance (ESG) investment is widely used in society as a measure of sustainability, Okayama University utilizes the name SDG University Management in the sense that it conducts university management to tackle issues in both the region and the world in an integrated way. The goal of SDG University Management is to strengthen university autonomy by increasing and diversifying financial resources as a result of the integrated reform of education and research and the development of industry-academia cooperation. This will be accomplished through centering the SDGs mission in the core of university management and strengthening multi-stakeholder engagement.

Recently, at the review meeting regarding National University Corporation management reform, the Ministry of Education, Culture, Sports, Science, and Technology advocated the engagement management model and urged national university corporations to infuse this model into their strategic management plans. The bottom line of the recommendation was that the engagement management model, based on the active process of working together with various stakeholders outside and inside the nation, makes it possible for higher

education institutions to continue growing and maximizing value creation since new investment can be attracted through expanded university functions. For precisely this reason, SDG University Management is strengthened by integrating it with the global engagement strategy – that is, Okayama University Engagement Management.

I believe that in order to connect the community and the world, it is necessary for Okayama University to work together with multiple stakeholders to envision what our engagement style ought to be. In this sense, we can showcase two remarkable partnership achievements as a leading world class university. The first is that through our designation as the Japanese language training institution for the Critical Language Scholarship Program by the U.S. Department of the State, we offered not only a Japanese language program for eight weeks but also provided the opportunity for participants to “learn SDGs” in communities in Okayama. The second is that Okayama University and the United Nations Conference on Trade and Development (UNCTAD) signed the world’s first Memorandum of Understanding (MoU) to foster human resources within the framework of “science, technology, and innovation for sustainable development goals” (STI for SDGs). In addition to these two achievements, another milestone is that we concluded an agreement on the SDGs industry-to-university partnership with local companies which aim to contribute to the region and the world through the achievement of the SDGs.

This year, global disasters such as the crisis of the new coronavirus threatened the normality of our daily lives. In addition, various factors related to social instability, for example, the concentration of national functions and operations in large cities, have become apparent risks. Now that we feel global issues as our own, we are required to change our behavior to form a new normal daily life. Moreover, as global issues require global responses based on multilateralism, it is necessary to promote the concept of “build back better” in an integrated multi-stakeholder partnership while taking the complementary action of pursuing the SDGs and achieving recovery from the coronavirus disaster. In particular, the direction that Japan should aim for is the Regional Circular and Ecological Sphereⁱⁱ (local SDGs) that embodies transformation to a sustainable and resilient economic society by transitioning to a decarbonized society, a circular economy, and a decentralized society based on digital transformation (DX).

We believe that this integrated report is an internal and external communication tool for branding and creating a common image of Okayama University SDGs. This image is important not only outside the university but inside as well. That is, “inner branding” instilled in students, faculty, and staff who are stakeholders in the university is also important. As a result of this branding and common image creation, each person’s aspirations and motivation will increase, which reinforces the engagement power of the organization and leads to further engagement with the region and the world.

Through SDG University Management and the Global Engagement Strategy, I would like to empower the region and the university, promote a Regional Circular and Ecological Sphere concept, and create the driving force for a new paradigm of co-creation that will realize local decentralized societies. We will continue to work with you on these initiatives, and we look forward to your continued guidance and support.

ⁱ Global Engagement: Committed, meaningful interaction with the world as a whole. A quote defined by Dr. Sheila M. Embleton of the Department of Languages, Literatures and Linguistics, Faculty of Liberal Arts & Professional Studies, University of York, Canada.

ⁱⁱ Regional Circular and Ecological Sphere: The idea is to create a self-sustaining and decentralized society while maximizing the use of regional resources at the foot of each region, while complementing and supporting resources according to the characteristics of the region, aiming to maximize the vitality of the environment, economy, and society; and to practice the SDGs in the region (local SDGs) (Ministry of the Environment website).



Hiroyuki Matsuda, President of Okayama University

Paradigm Shift in the Field of Teaching and Learning: Graduate School Reform and the Future

While focused on SDGs, Okayama University is taking campus-wide action on university management. Graduate school reform is one strategic area. Why address the restructuring of graduate school now? What changes will occur? What is the future of academia? President MAKINO Hirofumi, Vice Executive Director for Education, ISHIDA Mamoru, Assistant Professor Aubra BULIN, who play a key role in reforming graduate schools, and Assistant Professor KODERA Yuta, a graduate of Okayama University who became a faculty member in April, sat down and discussed these concerns.



Vice Executive Director
for Education
Center for Teaching
Excellence
Professor

ISHIDA Mamoru



President

MAKINO Hirofumi



Center for Teaching
Excellence
Assistant Professor

Aubra BULIN



Graduate School of
Natural Science and
Technology
Assistant Professor

KODERA Yuta

Promoting needs-driven graduate school reforms that address the challenges of the 21st century

Ishida: The challenge of graduate school restructuring is being taken up by Okayama University. President Makino, please share why graduate school reform is necessary from your perspective.

Makino: Since becoming president, I have had several conversations with individuals in the region regarding SDGs. When I asked about graduate school, I learned about the unique challenges of working people who "don't have enough time" and "find it difficult to attend for long periods of time." I also heard about people who "want very much to learn at graduate school, but they can't find a theme to study."

Ishida: So, you discovered a gap between the education offered by graduate schools and the expectations of companies and people in the community?

Makino: It is our duty to fulfill our social obligation as a Research University for the Advancement of SDGs and Well-being. The field of education and research at the graduate level requires cooperation with various stakeholders and implementation in society. To that end, by developing distinctive degree programs that consider social needs and encouraging online support for non-traditional student programs, we must carry out graduate school reforms. These changes will be led by the Center for Teaching Excellence (CTE), which



is made up of experts including Professor Ishida and Professor Bulin.

Ishida: Thank you for introducing the CTE. The CTE has also held meetings with local businesses and has learned that they are searching for creative employees capable of generating new ideas. We need to consider transitioning away from conventional education that focuses on what faculty can teach and more towards "Learner-centered education." The philosophy of the CTE is to support "Learner-centered education" and "Internal Quality Assurance for Education"^{*1}. We are developing a process of curriculum design and administration with young researchers like Professor Bulin to achieve these objectives.

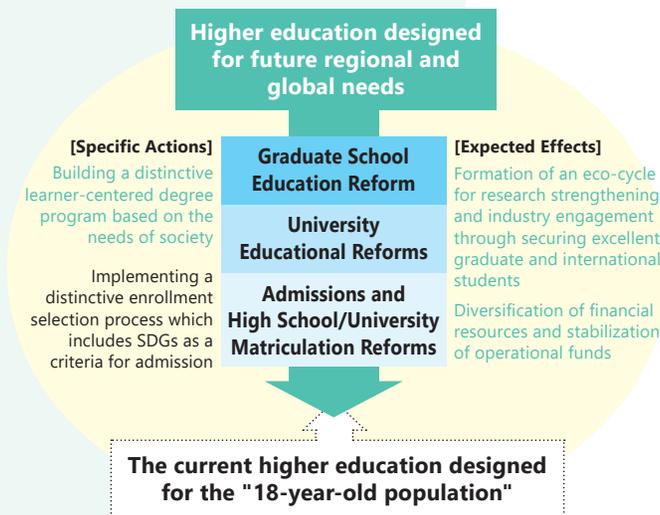
Makino: Another issue with graduate school is that, because of uncertainty about their career path, many students hesitate to go on to doctoral programs. If these reforms result in more working adults coming to our university, students may come into contact with local needs and role models while at university. This will be part of the active exchange between the local community and the university and will provide more opportunities to integrate local needs with the knowledge, technology, and research of our university and co-create new value.

Ishida: It sounds like you're talking about the 'Academic Capital Concept,' where Okayama University plays a critical role in the rejuvenation of Okayama. Professor Kodera, you have graduated from Okayama University and you are now a faculty member. What are your views on the graduate school reform?

Kodera: I agree that graduate schools are in a transitional phase at the moment. I expect to see an interesting improvement if students and working adults will learn together using the Internet and other instruments. If, as a research university, we can encourage research while still giving back to local businesses and the local community, I want to be a part of that type of reform.

^{*1} Continuous inspection and evaluation to assure the quality of degrees while working to improve them

Expected effects from needs-driven graduate school reform



Outcomes-based education is exactly what our university should pursue as a Research University for the Advancement of SDGs and Well-being

Ishida: What improvements can we make to shift to "Learner-centered education"?

Bulin: First, I think we must transform the mindset of the faculty. We need to reconsider the role of faculty when collaborating with the local community as a Research University for the Advancement of SDGs and Well-being. In addition, although university faculty



members are specialists in their respective academic fields, they often are not trained in teaching methods. Faculty development is indispensable for promoting constructive dialogs between faculty and implementing changes. For those dialogs, it is important to collaborate with various stakeholders involved in local companies and organizations as well as educational and research institutes. Students eventually graduate from the university and enter the local community. Therefore, education design must be based on outcomes that take into account what abilities are required for success in the local community.

Ishida: So you could say that outcomes-based education that anticipates social needs, rather than the conventional education designed for the 18-year-old population, is exactly what our university should pursue as a Research University for the Advancement of SDGs and Well-being. In that case, how can we design outcomes-based education, one of the pillars of graduate school reform?

Bulin: For example, suppose you are planning a trip somewhere. What mode of transport is best and what to bring will depend on where you go. So, you have to pick the destination – the end point – first. With learning, there are also different destinations, that is, the goals or knowledge and abilities a student needs to acquire and we must take into account what they need to acquire them. We also need a way to correctly measure whether or not the skills have been acquired – we call this assessment. Learning activities must be designed with all that in mind.

Ishida: It sounds like faculty need to use the "backcasting" curriculum design after identifying the skills we want students to obtain. I believe we must use global standards and internationally recognized methods to pursue this process. From a global viewpoint, what skills can our students acquire?

Bulin: Several skills should be considered, but it is especially important to have the ability to evaluate problems and implement solutions. For example, as Okayama University took actions against COVID-19, we enhanced our student support. Students initiated a project to promote local shops and restaurants in the area and provided lunch boxes to students in need. Students solved a problem. It is critical for the university to actively provide opportunities like this for students to participate in problem solving in order for students to improve problem solving skills.



Ishida: So that means developing an environment that encourages people to take on challenges is essential. What Professor Bulin is saying is similar to the idea that students should acquire the ability to find needs, match them with seeds of research or learning, and transform them into new ideas or products. What are your thoughts on the matter Professor Kodera?

Kodera: I agree. By increasing the number of Project Based Learning (PBL) exercises through graduate school reform, students will acquire the skills necessary for problem solving. I think it is important to allow students to practice those skills over and over again. I would have liked to have had such an opportunity when I was a student.

Ishida: What were your impressions of the faculty when you were studying at our university?

Kodera: There were many interesting teachers. The faculty had a wide range of personality types. Some teachers, like my mentor Professor Nogami², actively encouraged me to try out things and while other theoretical minded teachers stressed the importance of fundamental research.

Ishida: In educational terms, promoting constructive learning is known as "coaching" or "facilitating." The role of university faculty is changing from "teaching" to "coaching" or "facilitating" student's learning. As an instructor, how do you want to improve?

Kodera: Currently, I am overseeing experiments 3-4 times a day in online classes, but I have not had many chances to communicate face-to-face with students. I am worried about how to teach when communication is difficult and I can't see the other person's face. At the very least, by putting myself out there and greeting the students,

I tried to let them know that they can approach me even a little bit.

Ishida: I see that you are trying to build rapport with your students. President Makino, what do you want to see from the students and faculty at Okayama University going forward?

Makino: I believe "backcasting" is crucial. I want each student to have a dream for what kind of person they want to become in the future. I want our faculty to think about what they can do for each student's dreams and goals in order to realize "Learner-centered education" and to deepen various forms of learning for that purpose.

Ishida: Students that master this idea can play an active role in any profession and on any stage in society or the world. For our graduate school reform, the CTE is creating reform phases for education, design, implementation, and evaluation, starting from the types of students we will cultivate.

*2 Professor NOGAMI Yasuyuki Okayama University Graduate School of Natural Science and Technology

Moving online will change the concepts of "classroom", "faculty", and "learning style"

Ishida: The introduction of ICT in educational settings has progressed rapidly in response to the COVID-19 pandemic. Online education will play a particularly important role in graduate school reform. Professor Bulin, what challenges do you see as a researcher and a CTE faculty member regarding online education?



Bulin: Typically, designing an online course requires several months of preparation, but now we have been forced to prepare content in a limited period of time. That said, the introduction of online teaching has gone relatively smoothly, partly because the university already provided online educational tools such as "Moodle" and "Microsoft Teams". Going forward, Learning Management Systems (LMS) that are easy for users to use will be important. In addition, continuous improvement of the online education environment needs to be considered. Teacher to student ratio in a class must be improved to increase interactions. We urgently need to increase student support and faculty support to continue effective online education and provide rich content.

Ishida: There are some challenges, but we have received many positive comments from students and faculty who want to continue having online classes in some capacity. For the future of graduate school reforms, I think that online education will be indispensable for expanding non-traditional student programs, increasing the number of international students, and developing the ability to survive in the Society 5.0 era. What are your thoughts on implementing quality online education?

Bulin: Online education should provide a quality learning experience in addition to effective content. Creating a sense of community in the online course is important to support student motivation. Providing active learning opportunities is also a critical element. Active learning online is about students thinking independently and actively about "why they learn." LMS interfaces and visual effects are also important factors. SNS and other media have evolved to a high degree, and I think many students expect excellent visual design. Online courses can use visual elements to guide students through the coursework.

Ishida: You could say that the ability to incorporate visual effects into content creation and online lessons is a strength of online education. President Makino, what do you think about the future shift to online education at Okayama University?

Makino: We had no choice but to use online education now and it appears that this situation will continue for a while. We are fortunate to have had an online education specialist like Professor Bulin come to us, so I want us to build a system that can provide even better education. I also want to create high-quality content in English so that people in other countries will want to participate in our online



education.

Ishida: Professor Kodera, you are conducting research in fields very closely related to online education such as Internet of Things (IoT), AI, and security for the era of Society 5.0. What are your thoughts on how online education will progress in the future?

Kodera: While the so-called digital native generation will be able to transition smoothly to online education, it is thought that the threshold is somewhat high for people in their 30s and 40s who do not use computers very often. However, by using Video On Demand (VOD) and other tools, we can provide a wide range of basic to applied learning content according to the level of the learner. Also, by preparing course material kits for PBL exercises together with VODs, even people who have difficulty taking time out of the working day for non-traditional student programs will be motivated to try watching videos after returning home.

Ishida: That means that in addition to video content, we will provide students with course material kits for their learning. This is a change of thinking that moves the classroom outside the university walls. How will the role of faculty change in that case?

Kodera: I think they will develop course material kits. I think there is a role for researchers to support the matching of needs and seeds of research through interviews with learners and companies.

Ishida: You mean they will take on the role of the facilitator and become a person who organizes learning with companies and the community rather than just teaching.

Makino: This is precisely what putting the SDGs into practice looks like.

Ishida: That is right. President Makino, what are your thoughts after hearing what Professor Kodera said?

Makino: It is surely the educational style of the future. There is high mutual affinity between PBL exercises and online learning in particular. For non-traditional student programs, being able to learn at home or in the office without coming to university removes one of the barriers to working people. As a faculty member, being a facilitator to a local community or company, or discussing challenges with each other will lead to solutions and the development of new technology. This is needs-driven problem solving.

Working together with the people of Okayama as a university that delivers new value to the world

Ishida: It is said that the COVID-19 pandemic is triggering a paradigm shift from the concentration of industries in Tokyo to

decentralization. Regarding this paradigm shift, what is your vision for Okayama University?

Makino: The spread of COVID-19 has shown us the danger of overcrowding in Tokyo. I do not think there is a place as fortunate as Okayama, both geographically and geopolitically. Okayama is a typical rural region and by working with people in the region to find and solve the problems of the SDGs and spreading this wisdom, we will be able to connect with the world. To accomplish that, we will utilize our faculty's research into IoT, AI, etc. to further improve the quality of online education, and provide "Learner-centered education". This is a very difficult time, but I think it is also a turning point for us. I want to transform the charm of this place called Okayama into a strength and continue on as a university that delivers new value to the world.

Ishida: Thank you for taking time out of your busy schedules today.

Everyone: Thank you.



*This round table discussion was held outdoors (Junko Fukutake Terrace) on August 6, 2020.



Pay it Forward + SDGs Story 1

Encouragement for Current Students from Past Okayama University Graduates

As the COVID-19 (2019 novel coronavirus) pandemic drags on, numerous Okayama University graduates have generously provided support for currently enrolled students. The following was written in a letter included along with a donation to current students:

"Okayama University often uses the phrase 'pay it forward'; personally, this phrase has deep meaning for me. Once, back when I was a university student, my family was late sending money and I didn't have enough savings left to get by. To help me out, the landlord at our boardinghouse helped me find a part-time job, for which I was truly grateful. Although the included donation may be a more direct approach, I have decided to do what I can to pay it forward and help the university's current students. I hope it will be of some use. Please tell your students to stay calm and focused, as they still have long lives ahead of them. There will be more times of scarcity in the future, so take it at a slow and steady pace. Also, when you have the chance, I encourage you to pay it forward to the generations that come after you."

We hope that today's students will appreciate these words of encouragement and the sentiment behind them, and pass the same along to the generations that follow.



A photograph of a row of tall, mature trees with dense green foliage, likely a street tree canopy. The trees are planted along a paved road on the left. In the background, a building with a light-colored roof and a fence are visible. The sky is bright and clear.

III. Strategies

Higher Education Reforms to Lead the Way Toward SDGs Society 5.0

Pursuing outcomes-based education redesigned with a focus on learner-centered teaching and quality improvement.



Looking Back: Efforts Thus Far

In preparation for the emergence of the Society 5.0, people expect university education to cultivate human resources who not only possess specialized knowledge and skills, but who are also equipped with the wide-reaching cultural refinement and logical thinking capabilities necessary to improve our society.

Okayama University started the PRIME program, which is part of the Top Global University Project being implemented by the Ministry of Education, Culture, Sports, Science and Technology (MEXT). This program enables students to acquire three core powers (liberal arts strength, linguistic ability and professional knowledge) and gain experience across three areas (across disciplines, across societies, and across cultures). Through the promotion of 3x3 education in all academic programs, Okayama University seeks to work toward the goal of developing all-round achievers who can contribute to international progress.

In FY 2019, we began offering an SDG guidance course for all new students titled "OKAYAMA UNIVERSITY x SDGs" to give these students an opportunity to pursue their own personal SDG-related efforts. In addition, we have established an endowed course to foster both entrepreneurship and intrapreneurship (entrepreneurial-style thinking and actions within an existing corporate organization) as a new learning project at our university in pursuit of our goal of becoming an international base to study the SDGs. Moreover, we utilize a learning management system (LMS), media-based class sessions, and other "EdTech" that makes use of ICT and other such approaches to promote self study. We have even



Endowed course to foster entrepreneurship and intrapreneurship

shortened class times from 60 to 50 minutes and each academic quarter from 8 to 7 weeks in order to ensure sufficient time for independent learning by students.

In order to focus on learner-centered education and quality improvement for education, we established the Center for Teaching Excellence (CTE), a new unit of specialists with experience in global higher-education. The CTE began working in coordination with all departments to revise three policies—the diploma policy, curriculum policy and admission policy—and reexamine educational targets for all bachelor course programs while also providing support for development of faculty abilities (faculty development).

Pursuing outcomes-based education with a focus on learner-centered teaching and quality improvement. Center for Teaching Excellence (CTE)

● Creation of a process of curriculum development and administration based on global standards

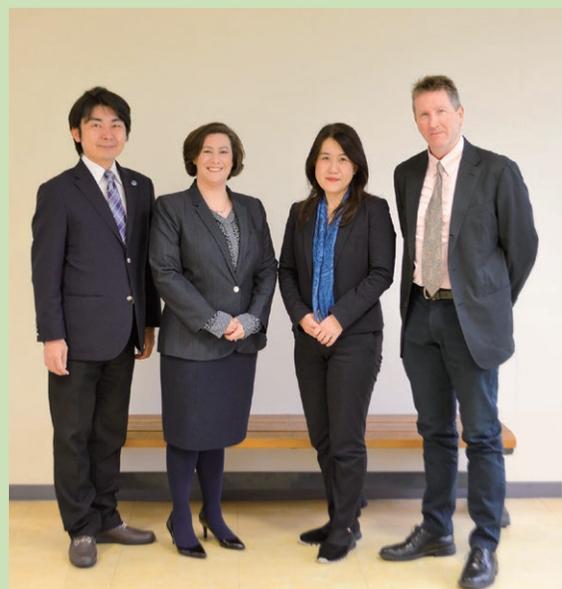
Leading the transition to outcomes-based education

● Faculty development support to promote the growth of faculty as educators

- (1) Consultations by planning/improvement stage in areas related to classes and curricula
- (2) Implementation of higher education workshops
- (3) Collaborations among faculty and between faculty and students

● Creation of an EdTech teaching material development system

- (1) Taskforce development of teaching material and content
- (2) Establishment of an EdTech support office and implementation of faculty certification training
- (3) Infrastructure coordination with the Center for Information Technology and Management
- (4) Assessments and evaluations based on online education frameworks



Members from Japan and abroad with deep-reaching knowledge in the field of higher education

Efforts Moving Forward: Goals and Plans

As a research university for the advancement of SDGs and well-being, Okayama University strives to foster human resources with unique skills tailored to meet the needs of the Society 5.0 era. We will build degree programs that meet global standards in pursuit of reforms in graduate school education, all with the aim of realizing true learner-centered education.

Furthermore, we will also develop high-quality education programs operated through an online learning framework that we can continue to use even after the COVID-19 (2019 novel coronavirus) pandemic has ended. In the area of SDG studies, we will add to existing education programs the cultivation of entrepreneurial thinking that enables people to create new and innovative methods of solving problems, with the aim of cultivating human resources equipped with high-level creative abilities.

In addition, we are considering the introduction of SDGs admissions to strengthen links between high school and university education. This enhancement clearly conveys our goal of educating human resources capable of contributing toward future SDG achievement, while also ensuring that the "all-round achievers" who graduate from our institution will be able to perform in practical ways to realize SDG ideals throughout society.

By pursuing cross-disciplinary practical social collaborative education, outcomes-based education and other such efforts expected of a research university for the advancement of SDGs and well-being, we will provide opportunities for self-driven independent learning and study through regional and global SDG-related activities in order to foster "all-round achievers for the SDGs" who are capable of responding to problems with real innovation.

Specific Measures Moving Forward

1. Develop unique degree programs designed to meet society's needs (especially in graduate school education)
2. Under CTE leadership, work together as a university to implement outcomes-based education (reform the three policies, target competencies, curriculum maps, etc.)
3. Under CTE leadership, work together as a university to carry out faculty development with the goal of enhancing learner-centered education
4. Reform our education system in pursuit of learner-centered education (change class times from 60 to 50 minutes and the academic quarter from 8 to 7 weeks, make other changes as necessary)
5. Build an online education system and develop high-quality education programs
6. Develop and implement educational programs aimed at cultivating the entrepreneurial thinking needed to pursue SDG-related efforts
7. Foster campuses where people can experience diversity & inclusion (D&I)
8. Introduce SDGs admissions to strengthen links between high school and university education



Center for Teaching Excellence (CTE) online joint faculty development training session at the Center for Education in Medicine and Health Sciences



Student taking an online class (Practical social collaboration education)



Efforts to create, operate and improve online education using media (Yasuo Kuniyoshi Memorial Art Education Research Project and Regional Creation Seminar)

Strategies Moving Forward: Okayama University Vision 2.0

- 1 Cultivation of independent study environments for the sake of learner-centered education in the Society 5.0 era
- 2 University-wide promotion of Society 5.0 for SDGs education
- 3 Society and learning process development through acceleration of graduate-school-education internationalization and use of non-traditional student programs
- 4 Visual representation and public release of study and learning results in pursuit of learner-centered education

Strategic and Organizational Industry Engagement with Global Research Center Formation and SDGs as a Common Language

Aiming to become a research university that ranks among the best in the world, we are enhancing our strengths, improving the research environment, fostering young researchers, expanding our industry engagement ring, and continuing to provide new value and services to society.



Looking Back: Efforts Thus Far

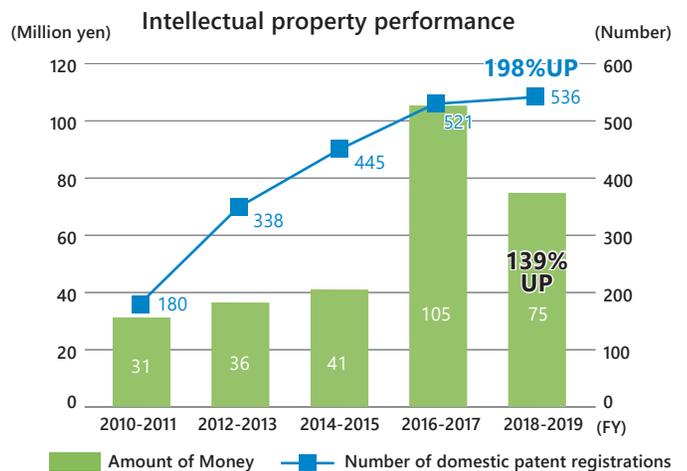
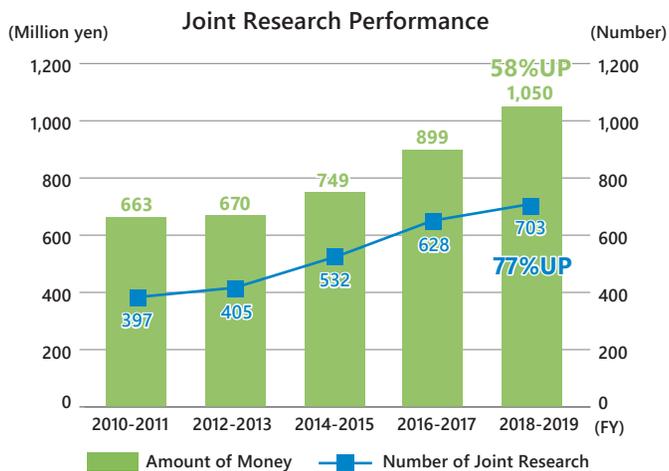
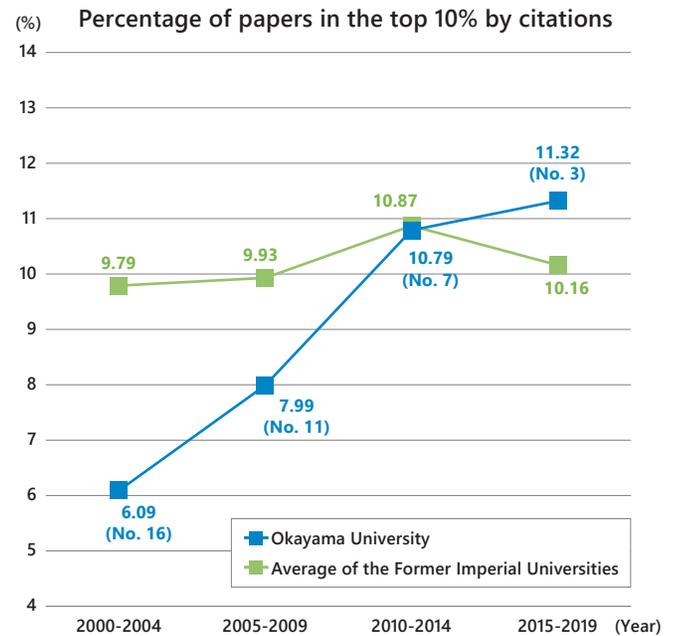
In recent years, the environment surrounding researchers has become extremely severe in Japan, and a relative decline in international competitiveness has become a problem. In order to discover and cultivate new research, it is necessary to enhance the environment surrounding research and innovation by securing posts for young researchers and time for research, to build an organizational support system, and to foster a culture that tolerates failure.

Okayama University has established a system to support young researchers by setting up the "Research Professor Program" (P.32) to support the research of young researchers with a proven research track record and the "Tenure Track Junior System" to promote the recruitment of excellent young researchers. Additionally, in order to improve the international competitiveness of our university, we have strategically utilized research IR for analysis, developed the "Program to Support the Formation of Next-Generation Research" and the "International Research Center Formation Program to Accelerate Okayama University Reform (RECTOR)", and have worked to enhance and cultivate highly competitive and unique research projects. As a result of these efforts, the ratio of the Top 10%^{*1} of our papers was 11.32% during the period 2015-2019 (third among national universities that selected important support framework number three^{*2}).

We also developed strategic and systematic industry engagement activities centered on the "Organization for Open Innovation Strategy Development" whose mission is to accelerate societal implementation, and the "Organization for Research Strategy and Development" which is in charge of enhancing fundamental research and developing research support systems. These activities led to the conclusion of Memoranda of Understanding (MoU). As a result, our joint research performance for the last two years (2018-2019) has steadily increased to 1.05 billion yen (up 58% compared to 2010-2011). With regard to intellectual property performance, together with an increase in the number of patent prosecutions, the number of licenses and assignments of rights has increased, contributing to an increase in intellectual property income. Intellectual property income for the last two years (2018-2019) was 75 million yen (up 139% compared to 2010-2011).

*1 Percentage of papers in the top 10% based on citations by category, year, and document type. The larger this number, the higher the percentage of high-quality (or impactful) papers. Numerical values are aggregates of articles and reviews using InCites benchmarking (Clarivate Analytics) as of July 2020.

*2 Hokkaido University, Tohoku University, University of Tsukuba, Chiba University, The University of Tokyo, Tokyo University of Agriculture and Technology, Tokyo Institute of Technology, Hitotsubashi University, Kanazawa University, Nagoya University, Kyoto University, Osaka University, Kobe University, Hiroshima University, Kyushu University, Okayama University (16 universities)



Efforts Moving Forward: Goals and Plans

The Organization for Open Innovation Strategy Development, which was established in FY 2019 with its own financial resources, manages industry engagement activities by "Organization-to-Organization" with companies etc. in the university's competitive areas and aims to produce many large-scale joint research projects and become a profit center at Okayama University. Through collaboration with the Organization for Research Strategy and Development, which oversees non-competitive areas, we have built a system that provides a system that consistently supports the process from strengthening fundamental research to implementing it in society. Both organizations will play a central role in promoting open innovation to solve problems with diverse stakeholders and strengthening industry engagement.

In addition, we have launched three new systems for the young researchers who will lead the next generation towards the discovery and development of new research with our "Incentive and Support Package for Young Researchers".

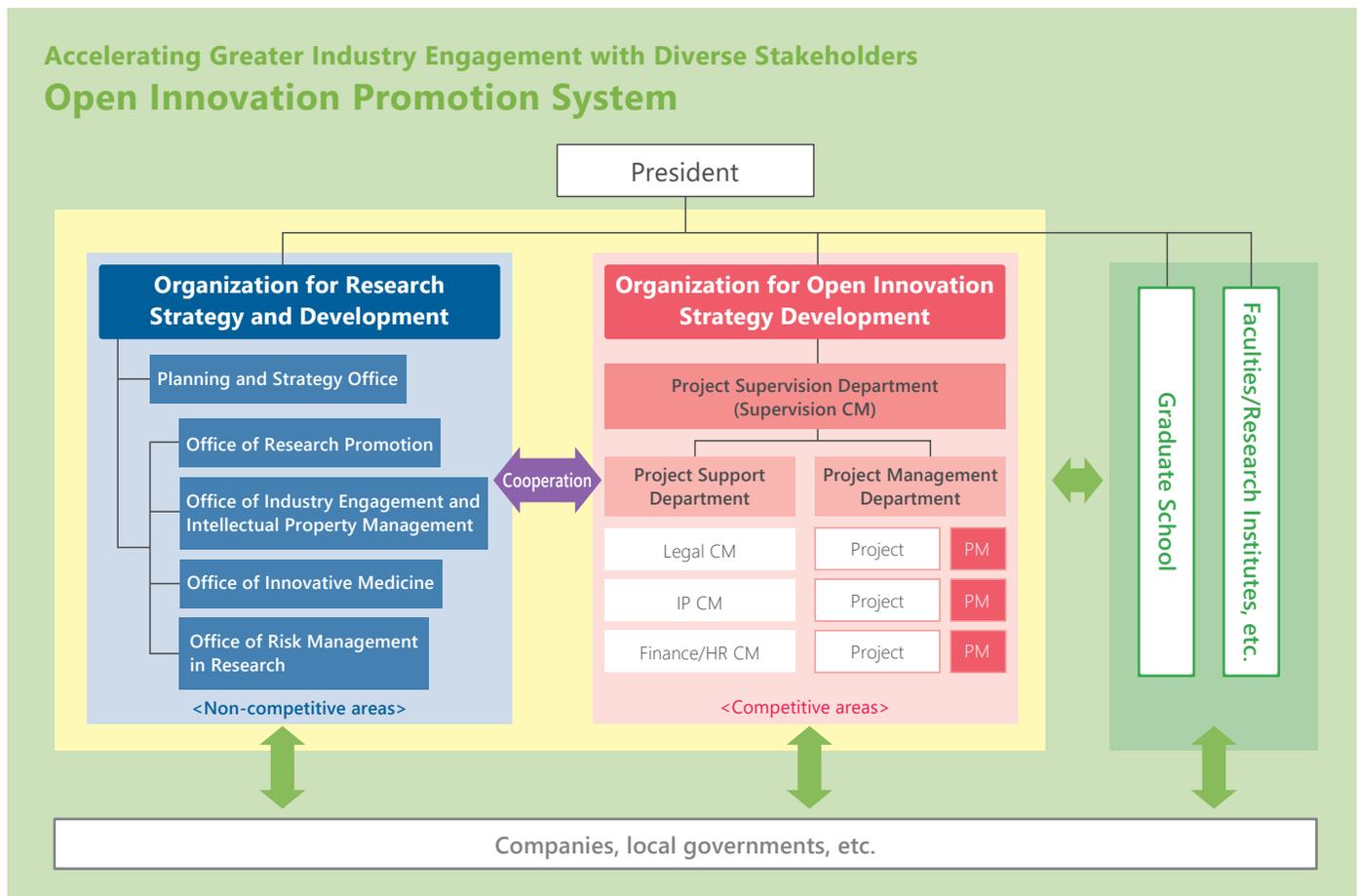
In the program of "RECTOR", we are developing three projects to

form an international research base by inviting prominent overseas researchers (overseas principal investigators) in our university's fields of strength: Physics, life sciences, and medicine. With this program, we will add two new projects, continue expanding our fields of strength, and work to foster young researchers.

Through these activities, we will improve living environments for society and enhance our presence as a research university that continues to create new value.

Incentive and Support Package for Young Researchers

1. **Academic Research Support Staff Project:** Subsidizes hiring expenses for support staff required for research activities
2. **Research Incentive Grant Project:** Supports tackling challenges with free thinking
3. **Young Academy:** Promotes horizontal collaboration between leading researchers



Strategies Moving Forward: Okayama University Vision 2.0

1 Accelerate research strengthening to further expand strengths and "Atsumi"

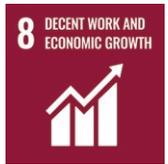
- 1) Expansion of Global Research Center Formation Program (RECTOR Program)
- 2) Development of Next-generation Research Center Formation Support System

2 Accelerate implementation in society by strengthening Strategic and Organizational Industry Engagement

- 1) Establish and globally develop "Organization for Open Innovation Strategy Development"
- 2) Cultivate next-generation social implementation bases in non-competitive areas
- 3) Develop and reform industry engagement support system

Becoming an Influential Research University for the Advancement of SDGs and Well-being

Okayama University continues to create new value through SDG University Management in order to realize the creation of a fruitful "Okayama Global Academic Capital".



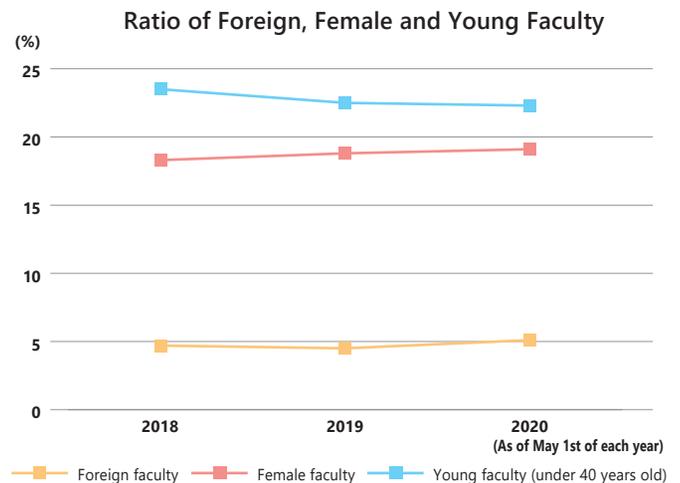
Looking Back: Efforts Thus Far

In FY 2019, the 70th anniversary of our founding, together with holding various events to commemorate our founding, we further accelerated the ongoing promotion of university management reforms which we positioned as the "first year of SDG University Management" to reflect contributions to SDGs across all university functions including education, research, and implementation in society.

Through governance reforms, we changed perspective from operation to management, appointed a provost and part-time outside director for the role of executive director for strategic management, and established the University Management Strategy Council to respond flexibly to the various challenges facing management of the university. Young faculty, staff and students also participated in the Okayama University Future Sessions to promote collaborative governance (P. 46). The University Reform Division, which operates through the Institutional Research and Effectiveness Office and the Quality Assurance Center in an integrated manner, was established and published the "Okayama University Integrated Report 2019 -Pay it Forward-" to encourage dialogs with stakeholders inside and outside the university.

In our personnel and salary management reforms, we introduced a new annual salary system, established the Personnel Strategy and Evaluation Committee to manage strategic personnel, and reviewed the faculty evaluation system (P.45) in order to promote the mobility of faculty and revitalization of organizations. The annual salary system introduction rate was 48.2% as of May 2020. In addition, the Ministry of Education, Culture, Sports, Science and Technology (MEXT) "Initiative for Realizing Diversity in the Research Environment (Advanced Type)" has adopted our university's "SHINE Program" to strengthen support for female researchers.

We accelerated financial and facility management reforms and pushed forward the "visualization" of on-campus costs. While working to diversify financial resources to strengthen our financial base, we promoted facility development based on the campus master plan, the infrastructure life extension plan and the environmental measures preparation plan and through this, established a new research building at the Research Institute for Interdisciplinary Science.



Efforts Moving Forward: Goals and Plans

Through our SDG University Management, on top of promoting "Diversity & Inclusion (D&I)" that allows diverse talented individuals to work energetically, we are aiming to build a university organization that is resistant to change through inner branding under a shared long-term vision (recognizing a common image of the organization) and collaborative governance. In FY 2020, we

appointed female professors in scientific faculties with a special post-up system for female faculty, and also established the Diversity & Inclusion Planning Promotion Committee to formulate a new "Okayama University D&I Policy" and to consider initiatives for the further evolution of D&I.

Transforming diversity into a strength of the organization Diversity & Inclusion Planning Promotion Committee



Chairman

In 2009, Okayama University formulated the "Okayama University Diversity Policy" and has been working to promote diversity over the years. D&I is said to be a keyword that connects the 17 goals of the SDGs. Going forward, I want all of us to think over the D&I challenges that Okayama University should tackle as a Research University for the Advancement of SDGs and the D&I challenges to be shared as the culture and values of the university.

Vice President for Legal Affairs, Compliance and Diversity & Inclusion /
Professor, Graduate School of Law
KANREI Yasuhiro



We are taking steps towards becoming a university where all members can demonstrate their value and personality.

Gender Equality Office
Director/Okayama University
Hospital Center for Diversity
and Inclusion Professor
KATAOKA Hitomi



I hope we can crack the shell of convention and create a university of various folks as well as a better gender ratio.

Gender Equality Office Vice
Director/Graduate School of
Natural Science and
Technology Professor
IMAMURA Koreyoshi



I hope that our discussions will be the first step towards greater happiness for the faculty, staff and students at Okayama University.

Seniors Support Office
Director/General Affairs and
Planning Department
Personnel Section Manager
TAKAHASHI Shinji



I hope we can become a university where diversity is "normal" and everyone is able to be who they are and is respected by one another.

Institute for Education and Student
Services
Center for Enrollment Management
Department of Student Support
Services Student Advice Department
Director/Associate Professor
MATSUI Megumi



Let's create a society that does not require the phrase "Diversity and Inclusion" where it is natural that everyone is as they are.

Institute for Education and Student
Services
Center for Enrollment Management
Department of Student Support Services
Disability Resources Department
Lecturer
IKETANI Kosuke



I would like to create a motivating workplace where everyone is accepted for who they are and is able to do what they do best.

General Affairs and Planning
Department Personnel Section
Good Job Support Center
General Leader
OKAMOTO Mutsumi



Let's co-create sustainable and inclusive society for well-being of all life on Earth!

Vice President for Global
Engagement Strategy/
UNESCO Chair Holder in
Research and Education for
Sustainable Development
YOKOI Atsumi



In an era of "super-diversity", I certainly find it essential to promote inclusion at our university.

Discovery Program for Global
Learners
Director/Graduate School of
Humanities and Social Sciences
Professor
NAKATANI Ayami



I am focusing on creating an environment where everyone can work and learn in their own way.

Health Service Center Assistant
Professor
HIGUCHI Chigusa



I want to support international diversity at the university by improving the lives of foreign faculty members.

Graduate School of Natural
Science and Technology
Associate Professor
Zeynep YÜCEL



As a lawyer, I want to think about D&I from the perspective of fairness and justice.

General Affairs and Planning
Department Legal and
Compliance Measures Office
Special Operations Personnel
(Legal Affairs)/Lawyer
YAMAMOTO Ryohei

Strategies Moving Forward: Okayama University Vision 2.0

- 1 System development and organizational reform for university management
- 2 Promotion of Diversity & Inclusion
- 3 Personnel and salary management reform and optimal resource allocation
- 4 Building a sustainable campus



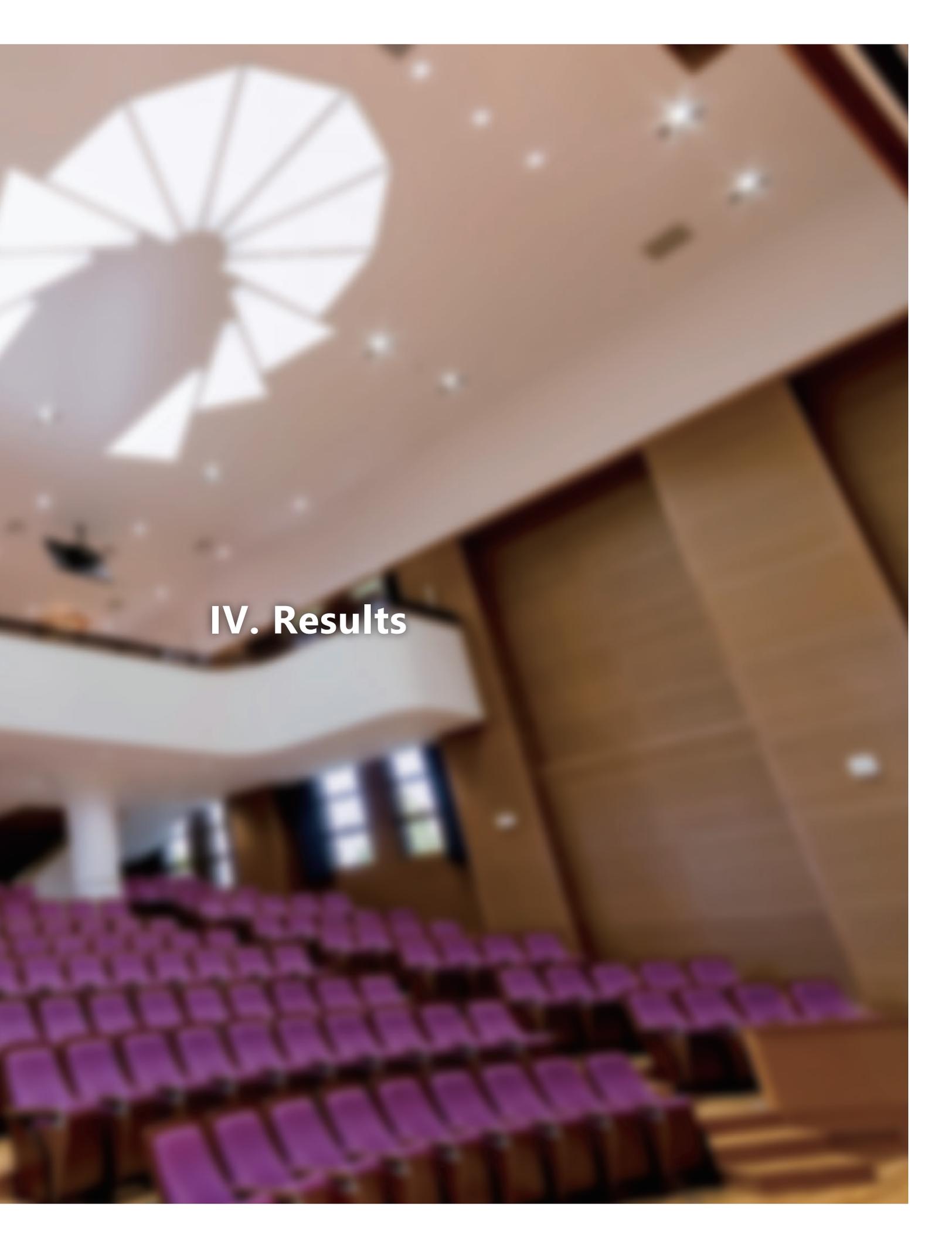
Pay it Forward + SDGs Story 2

Ties with the Local Community

Since 2012, Okayama University and Yakage Town, Okayama Prefecture have engaged in continual exchanges through SDG studies programs and venues such as the International Student Community Development Project. Through these exchanges over the years, the local community and the University have deepened their mutual ties. In response to the torrential rains and floods of July 2018, University faculty, staff and student volunteers went to disaster-struck Yakage to assist with recovery and restoration efforts. In June 2020, Yakage Town donated one ton of rice—which the University gratefully accepted—as a gesture of appreciation for exchanges and support over the years and as a way to help exchange students facing financial challenges amid the COVID-19 (2019 novel coronavirus) pandemic.

Both the University and the local community place great importance on this partnership moving forward, as it enables the building of a more sustainable society in which all parties participate in the cycle of contributions.



A photograph of a modern auditorium. The ceiling is a light beige color with several recessed spotlights. A large, octagonal skylight with a radial pattern is visible in the upper left. The walls are a warm, wood-grain brown. In the foreground, rows of purple upholstered seats are visible, arranged in a tiered fashion. The text "IV. Results" is overlaid in the center of the image.

IV. Results

The New Faculty of Engineering: Building Our Future

In April 2021, the new Faculty of Engineering will be born through merging and reorganization of the existing Faculty of Engineering and the Faculty of Environmental Science and Technology, with the aim of fostering pioneers capable of building a better future.



Background behind faculty merging and reorganization

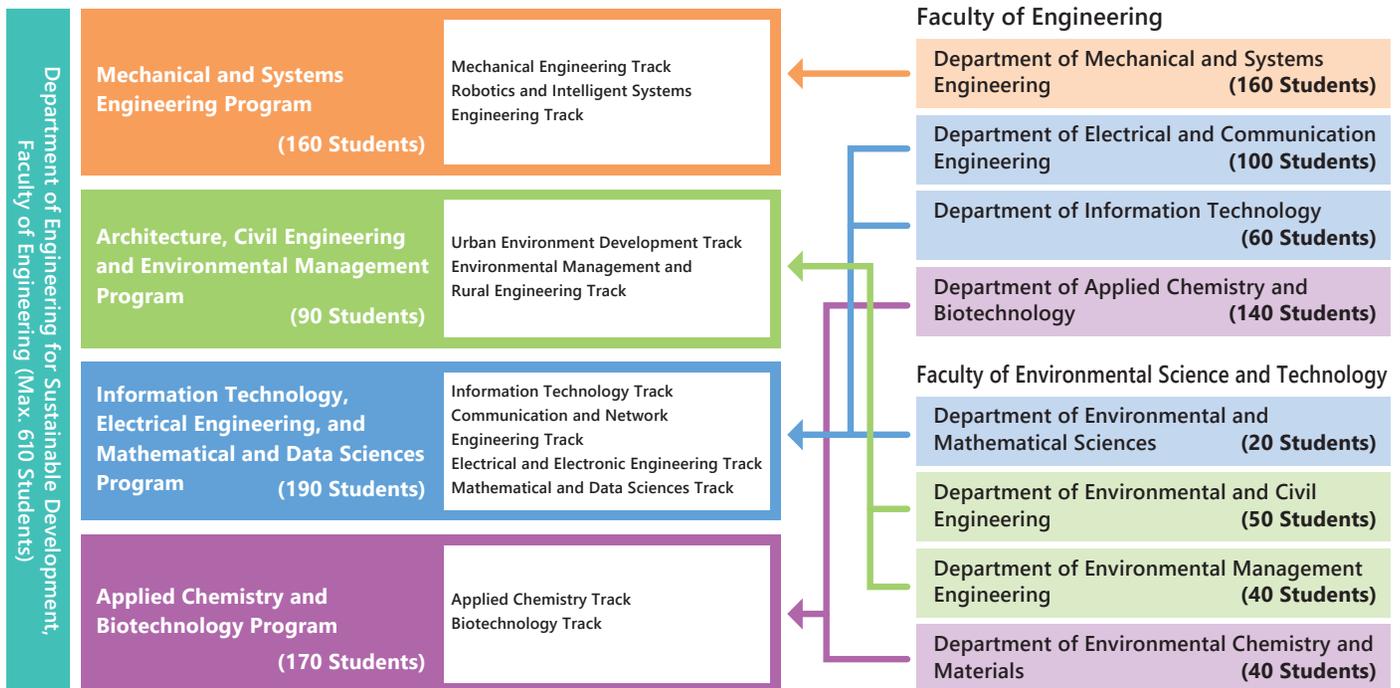
The Okayama University Faculty of Engineering was originally founded in 1960 to lead local efforts to foster professional engineers in response to demand from relevant industries as well as local financial circles and Okayama Prefecture citizens. Later on, additional new faculties were founded and existing faculties reorganized on multiple occasions while the University continued to provide engineering education consistently tailored to contemporary needs over the next six decades. Furthermore, Okayama University established the Faculty of Environmental Science and Technology in 1994, becoming the first national university in Japan to create an environment-focused department, and through this faculty the University has cultivated human resources capable of addressing increasing numbers of environmental problems faced by society and fostering enriched, comfortable environments in harmony with Mother Nature. Rapid advances in telecommunication technologies in recent years have transformed industrial and societal structures, in response to which demand has been growing for engineering experts capable of creating new value for society in order to successfully realize Society 5.0 and meet the needs of the society that develops thereafter. In light of these needs, the University has decided to merge and reorganize the Faculty of Engineering and the Faculty of Environmental Science and Technology to establish a new Faculty of Engineering in FY 2021. The new faculty will utilize the strengths and unique characteristics of both former faculties while cultivating creative human resources in the engineering field who have wide and broad perspectives, the attitude to challenge society's issues, and ability to develop self-motivated solutions. Starting in FY 2021, the new Faculty of Engineering will strive to provide practical education that realizes Society 5.0 for SDGs, which contributes toward the achievement of SDGs by making Society 5.0 a reality.

<https://www.engr.okayama-u.ac.jp/en/>



Full-page advertisement for the new Faculty of Engineering in The Nikkei newspaper on July 9, 2020

New Faculty of Engineering to Include Ten Academic Tracks in Four Programs



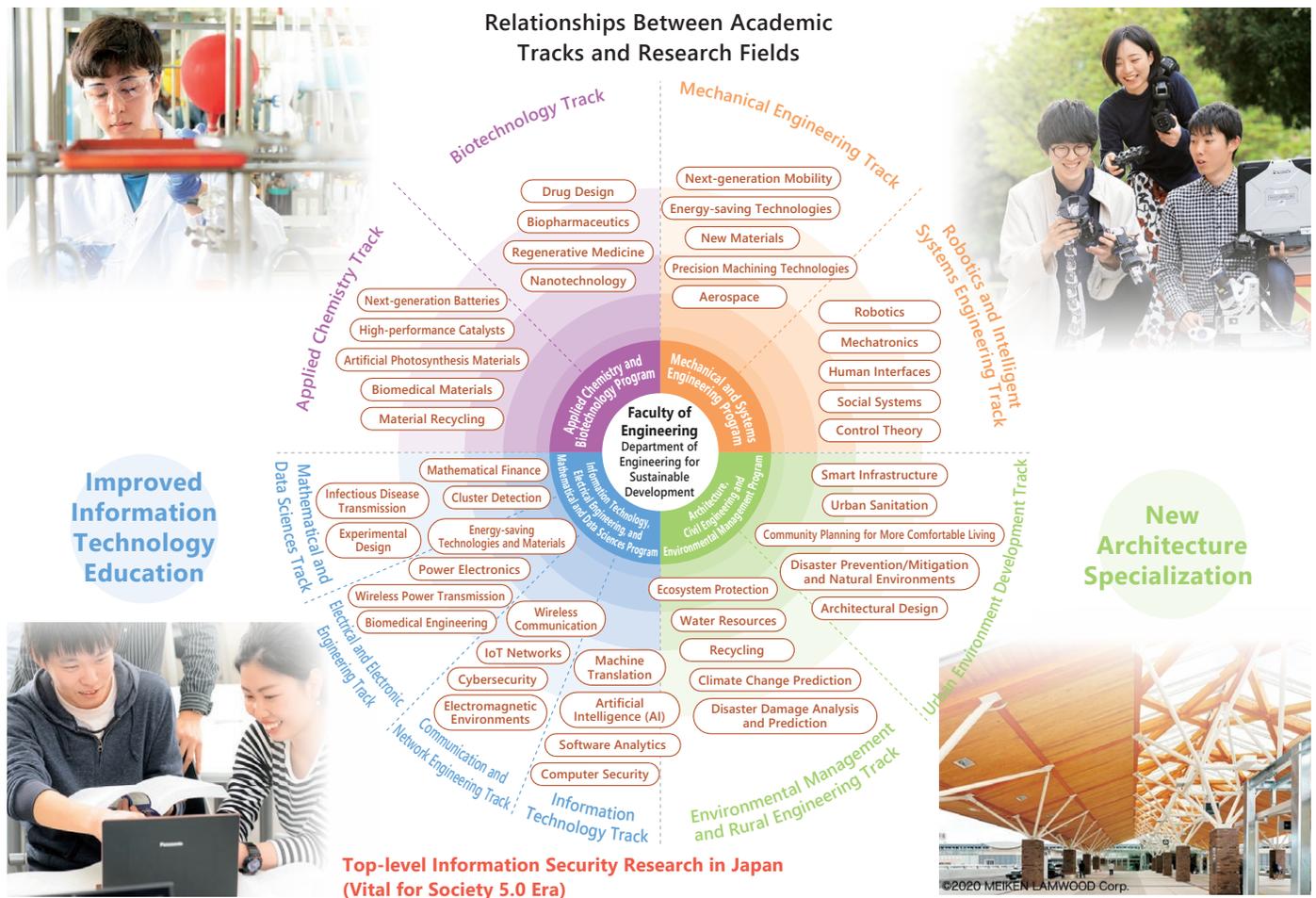
*Student enrollment numbers are provisional

*Student numbers shown are max. enrollment numbers for FY 2020

Unique Characteristics of the New Faculty of Engineering's Education Program

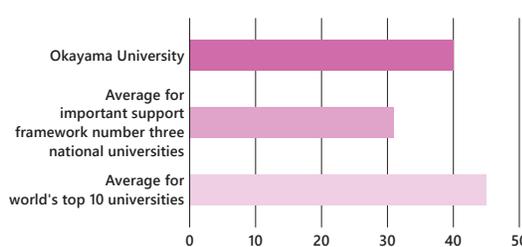
The new Faculty of Engineering brings together eight departments—four from the former Faculty of Engineering and four from the Faculty of Environmental Science and Technology—reorganized under a single, new department comprising ten academic tracks within four academic programs. The curriculum has students study basic subjects during their first year, while also having them take as required courses SDGs-related courses utilizing the twenty years of knowledge built up by the Faculty of Environmental Science and Technology, as well as mathematical and data sciences courses which provide engineering students with the indispensable basic skills and knowledge necessary to realize Society 5.0. During students' later years of study, in which they pursue increasingly specialized knowledge, the curriculum includes ethics education courses to ensure that students understand the influences and impacts of technologies on society and natural environments as well as the responsibilities and accountability demanded of engineers and researchers. Furthermore, students can take introductory courses outside of their selected area of specialty, providing them with a cross-disciplinary education not confined to a single field.

Maniwa City region in northern Okayama Prefecture is one of western Japan's major lumber-industry material gathering points, and within Japan they are a national leader in terms of production capacity for cross-laminated timber (CLT), a product type garnering increasing attention around the world. In Okayama City, Kurashiki City and other major urban centers throughout the prefecture, architectural work accounts for an even larger percentage of overall construction industry activity than civil engineering and other such fields, which is why demand for training of architectural personnel has been on the rise in accordance with local needs. Furthermore, as part of efforts toward sustainable lumber-product manufacturing and effective usages for purposes of proper and sustainable forest management, opportunities to build medium- and large-sized buildings (in addition to just detached houses) using wooden structures are increasing. In light of these changes, the new Faculty of Engineering has decided to establish the Architecture Specialization to help students prepare for their architectural certification examinations. This new program is designed to contribute to greater sustainability in the local region based on local community creation and SDG-centered approaches.



Campus Development with Diverse Ideas and Values

Ratios of Female University Students



It is necessary for university education to achieve the diversity and flexibility which serve as a common, shared foundation of knowledge. When considering diversity of the student body in terms of male-to-female student ratios, for example, Okayama University has a high ratio of female students compared with other national universities in Japan (see graph on left). In fact, we are ranked top in this area among important support framework number three national universities. However, compared with leading universities worldwide, our diversity in this area is not high enough. Therefore, we are working to foster campuses in which diverse groups of students of all genders, nationalities, age groups and physical/mental abilities can learn together.

*National universities selected for important support framework number three (16 universities): Hokkaido University, Tohoku University, University of Tsukuba, Chiba University, The University of Tokyo, Tokyo University of Agriculture and Technology, Tokyo Institute of Technology, Hitotsubashi University, Kanazawa University, Nagoya University, Kyoto University, Osaka University, Kobe University, Hiroshima University, Kyushu University, Okayama University.
 *Information on universities in Japan is based on the 2019 School Basic Survey.
 *Information on universities outside of Japan is based on "THE World University Rankings 2020."

Strengthening Local and Global Partnerships through Independent SDGs Studies

Okayama University is promoting efforts towards inclusive expansion of diverse and distinctive educational programs and meaningful retention efforts.



Introducing EdTech through our experience of fostering “advanced all-round achievers”.

At Okayama University, we aim to build a foundation for the development of leaders who solve regional and global issues in the Society 5.0 era. We are fostering new “All-round achievers for the SDGs” using our experiences with our system to identify and recognize students who meet the program criteria. In FY 2019, we decided to establish a new “Faculty of Engineering” featuring the practical education of “Society 5.0 for SDGs” as a system for mathematical data science education. In addition, in order to develop and implement optimal learning programs on the individual level utilizing technology including ICT and big data, we introduced EdTech* through a scheduling algorithm (MiCRO-STEP STUDY) to enhance English vocabulary skills and also held a public symposium aimed at promoting EdTech on campus.

*Education × Technology

Class video distribution system

As a learning and teaching method to contribute to improving the quality of education and ability of students, the Faculty of Pharmaceutical Sciences created a digital lesson library (classroom lectures) in FY 2014. The goal of the digital lesson library was to provide materials that not only aid faculty development but also support student independent study and provide supplementary lessons for absences. This method reduces the degree of viewing fatigue compared to material created for online lessons because it allows participation in the lesson in a simulated manner by capturing the lesson like it occurs in a classroom. In FY 2019, most classes could be viewed across than 65% of all courses and content was accessed 440,000 times over the year. In addition to supporting self-study by learners, this system allows faculty to evaluate their lessons as well as those of their colleagues (peer review).

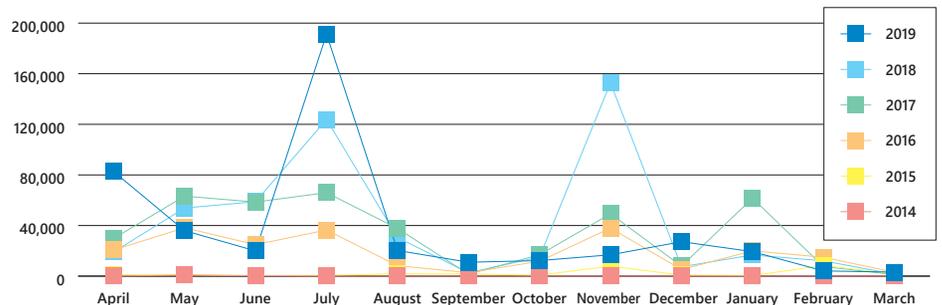
Number of courses with video data published by field (FY 2019)

	Number of courses	Number of open courses	Number of open lessons
Physics	14	10 (71.4%)	58
Chemistry	16	9 (56.3%)	45
Biology	19	12 (63.2%)	91
Hygiene	7	5 (71.4%)	36
Pharmacology	10	7 (70.0%)	33
Medicine	6	4 (66.7%)	60
Clinical	18	12 (66.7%)	77
Total	90	59 (65.6%)	400

Number of times lesson library accessed by FY

FY	Total number of accesses
2014	1,245
2015	26,749
2016	224,150
2017	404,282
2018	494,359
2019	444,029

Number of times lesson library accessed by FY/month



High School/University Partnerships: Okayama Revitalization High School Power-up Project

The Academic and General Okayama University Regional Research Association (AGORA) supports the promotion of regional studies at prefectural high schools through the "Okayama Revitalization High School Power-up Project" in Okayama Prefecture. The purpose of this project is to increase the attractiveness of the high schools as schools that contribute to the development of the human resources who will be responsible for revitalizing Okayama and the region. The program includes educational activities aimed at utilizing local resources and solving local issues. We set up supervisors and regional advisors at AGORA and have provided lectures and guidance for students and faculty at 10 schools so far.



L-café hosts SDGs Café

The social learning space, "L-café", has been hosting SDGs Café to deepen understanding of each goal of the SDGs. At the Goal 4 themed meeting entitled "Learning from Writing Science Textbooks in Papua New Guinea", there were discussions about improving the educational environment in developing countries. Until recently, there were no science textbooks in Papua New Guinea, but the lecturer shared that new teaching methods using textbooks created and distributed for the first time were now beginning to spread. Participants shared their impressions, saying that they "could experience the difference from Japan" and "wanted to use this knowledge for future SDGs activities".



Promoting regional non-traditional student programs

In a training program designed to support pregnant women, mothers and children set up by the Graduate School of Health Sciences, students are accepted from all over Japan to support the development of leaders in fields such as perinatal care, reproductive medicine, and child-rearing support. The program also assists midwives returning to work after leaving their jobs due to pregnancy or child-rearing. Students acquire a wide range of knowledge and skills, through seminars by front-line instructors in the field, simulation of ultrasound exams and neonatal resuscitation, and practical counseling for women who experienced infertility, miscarriage, or infant mortality. The program was certified by the Ministry of Education, Culture, Sports, Science and Technology (MEXT) Brush up Program for professional (BP) and was featured in the White Paper on Gender Equality by the Cabinet Office. The program promotes the reeducation of working adults by holding recurrent seminars for assisted reproductive technology engineers.

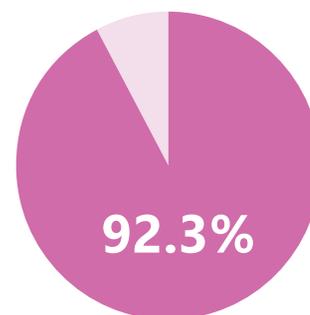


State of Employment/Progress to Further Education for Graduates

Okayama University promotes 3x3 education to foster "All-round achievers" who have the good sense to make the right decisions in practical situations. In FY 2019, the rate of employment/progress to further education for graduates was 92.3%.

In addition, as a system unique to the university, students with a superior grasp of three core skills (liberal arts strength, linguistic ability, professional knowledge) and who have abundant experience across three areas (across disciplines, across societies, and across cultures) are certified as "advanced all-round achievers". The cumulative number of certified advanced all-round achievers is 832 (2016-2019).

Rate of employment/progress to further education for graduates



*Number of graduates employed or pursuing advanced education / number of total graduates
*Clinical residents in the Medical School Faculty of Medicine and Dental School are counted as employed

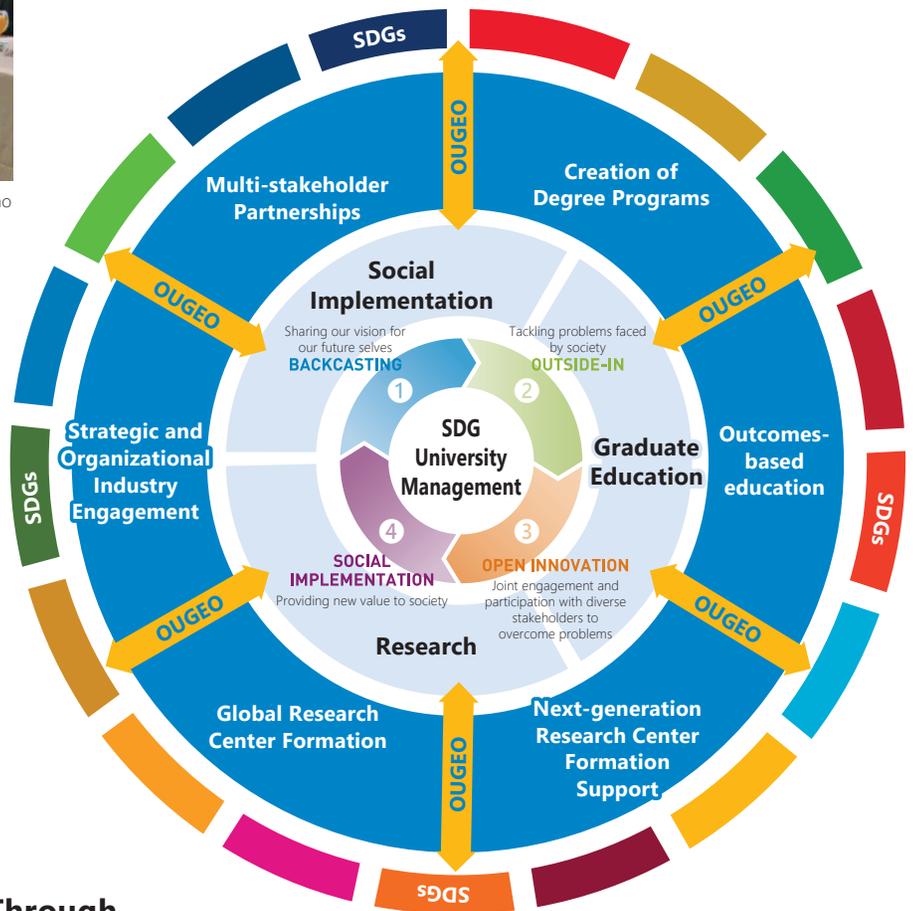
Global Engagement Strategies that Demonstrate a Global Impact

We will work to improve our presence around the world through the Okayama University Global Engagement Office (OUGEO) that jointly engages with our diverse stakeholders that include international organizations.



Whole institution approach to the SDGs presented by President Makino at the UN High-Level Political Forum (HLPF)

Diagram of SDG University Management with Global Engagement Strategies



Increasing International Impact Through a Global Engagement Strategy

We are promoting strategic cooperation with international organizations and universities overseas spearheaded by the president in order to contribute to an improvement to our presence around the world through research strengthening and industry engagement as a Research University for the Advancement of SDGs and Well-being. In July 2019, President Makino announced the results of SDG University Management and Education for Sustainable Development (ESD) at the "ESD for 2030" side event at the High-Level Political Forum (HLPF) on sustainable development which was well-received by the audience.

In April 2020, the Okayama University Global Engagement Office (OUGEO) was established to match our education and research resources with regional resources to address global-scale problems. Serving as a link between universities overseas that are suited to

participate in a global alliance, we have been directly promoting the strengthening cooperation with organizations such as the United Nations Educational, Scientific and Cultural Organization (UNESCO), United Nations University (UNU), United Nations Conference on Trade and Development (UNCTAD), the University for Peace (UPEACE), and United Nations Population Fund (UNFPA) in order to strengthen our university network.

Through the promotion of these measures, we realize contributions towards goals including Science, Technology, and Innovation for the SDGs (STI for SDGs), Education for Sustainable Development (ESD), and "United Nations Decade of Ocean Science for Sustainable Development," and strategically promote training of human resources and research that make contributions towards the SDGs, and real-life societal applications.

Conclusion of a comprehensive Memorandum of Understanding (MoU) with UNCTAD (STI for SDGs)

In January 2020, Okayama University signed the world's first MoU as a university to develop human resources for science, technology and innovation to achieve the SDGs (STI for SDGs) with the United Nations Conference on Trade and Development (UNCTAD), one of the UN's core organizations. Providing two human resource development programs consisting of short-term programs (joint-research/training course for young women researchers from developing countries) and long-term programs (doctoral degree program for young researcher from developing countries), we will disseminate the results of the STI for SDGs human resource development program from Okayama University to the world.



Signing to conclude MoU agreement with UNCTAD Division on Technology and Logistics Director, Ms. Sirimanne (on the left)

Efforts toward achieving UNESCO/ESD for 2030

ESD for 2030 was adopted at the United Nations General Assembly in September 2019. ESD is the foundation for achieving the SDGs and is currently making rapid progress around the world. As Asia's first UNESCO chair on ESD education, Okayama University is promoting its efforts as a global hub for ESD education to achieve the SDGs through alliances with international organizations, including holding the ESD Teacher Education World Congress in July 2019 and concluding the MoU (Comprehensive Partnership Agreement) with the Earth Charter Headquarters in June 2020.



Commemorative photo with Executive Director of Earth Charter International (ECI), Ms. Vilela (2nd from the left)

International joint research contributing to the United Nations Decade of Ocean Science for Sustainable Development.

As a world powerhouse hub in the marine science field, Okayama University is conducting strong collaboration with the University of Hawaii and the University of Kiel, Germany, at the Coastal Laboratory attached to the Faculty of Science (Ushimado). In order to contribute to the United Nations Decade of Ocean Science for Sustainable Development adopted by the United Nations General Assembly in 2017, we will aim to become a global base by further strengthening our efforts the field of marine science and promoting international joint research.

As a global hub, we are also accelerating coordination and boosting student interaction related to sustainability fields with a focus on achieving the SDGs.



A visit to the Hawai'i Institute of Marine Biology (HIMB)

Status of International Exchange Agreement



If we combine our international exchange agreements between universities and departments, our agreements widen to include 373 partners in 46 countries and regions (as of May 2020) — enabling exchanges with various regions in the world. In addition to increasing the global awareness for our faculty and staff, this network provides our Japanese students with an increased number of the opportunities to interact with international students from a broad range of backgrounds and increases the number of students with a global point of view.

Global human resource development and expansion of global network business

We are promoting the cultivation of the next generation of global leaders through interactions with students from countries around the world and activities through our global network.



Tour of biomass facility in Maniwa City

Critical Language Scholarship (CLS) Program

Our university was the first national university to be chosen as a destination for students of the Critical Language Scholarship (CLS) Program sponsored by the U.S. Department of State. The program is part of a U.S. government effort to dramatically expand the number of Americans studying and mastering foreign languages that are critical to America's national security and economic prosperity. Participants are selected from among approximately 5,000 students from across the United States. The 26 students who were welcomed had been selected from about 500 people who had requested to study the Japanese language for 8 weeks from June 2019. As part of the extracurricular activities in the program, participants toured a supply system for fuel from regional wood resources to learn about measures for sustainable city building during their visit to Maniwa City, which is a SDGs Future City. We are promoting further global learning as a base for the training of human resources through SDGs and ESD.



Students participated the Netherlands "Oine" Flower Festival with wearing beautiful KIMONO on.

Integrated Japanese Language and Culture Program for Leiden University, the Netherlands

Integrated Japanese Language and Culture Program for Leiden University was launched in 2018 Academic Year (AY) with the partnership of Faculty of Humanities, Leiden University and Okayama University. This three-months unique program focuses on improving Japanese Language skills, understanding and researching of Japan and regional (Okayama) culture, and interaction with students and people in Okayama. For AY2018, we welcomed 23, and for AY2019, we had 24 students under this program. As one of the biggest regional exchange events, students are invited to the Netherlands "Oine" Flower Festival, which commemorating the bridge between Okayama and the Netherlands, every year. In AY2019, new course "Japanese Reading Aloud" which is not provided in Leiden University has started to offer a great opportunity to learn natural pronunciation, intonation, and rhythm of the Japanese language.

The One Young World (OYW)

The One Young World (OYW) global youth summit that is held once a year, is one of the world's largest summits where the next generation of young leaders assemble, representing each country over 190 countries in the world. The OYW has been drastically growing as a next-generation leadership development project with the global collaboration across industry, government, and academia for the purpose of solving the global scale problems by uniting the next generation of leaders under the guidance of the distinguished world-leaders. Okayama University promptly responded to its purpose in participating in the summit (as early as in 2015) as a Japanese national university. At the 2019 London summit, and the student representative of Okayama University was selected to as a Global Youth Representative to appear on the stage.

<https://www.oneyoungworld.com/> (Official Website)

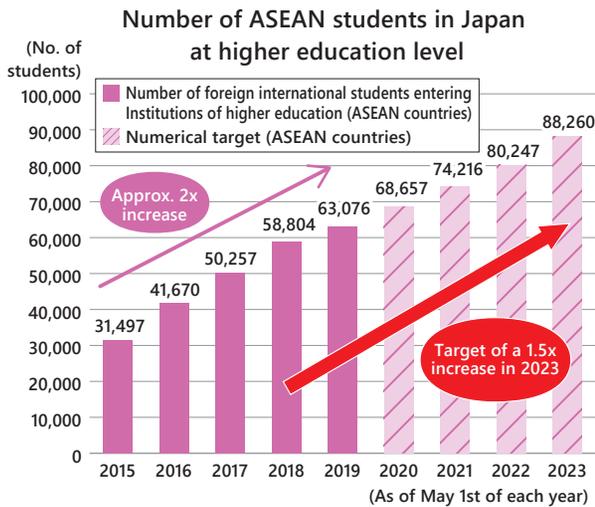


KISHABA Tomoki (2nd year medical student) takes the platform at the plenary session as a global youth representative

Study in Japan Global Network Project (ASEAN)

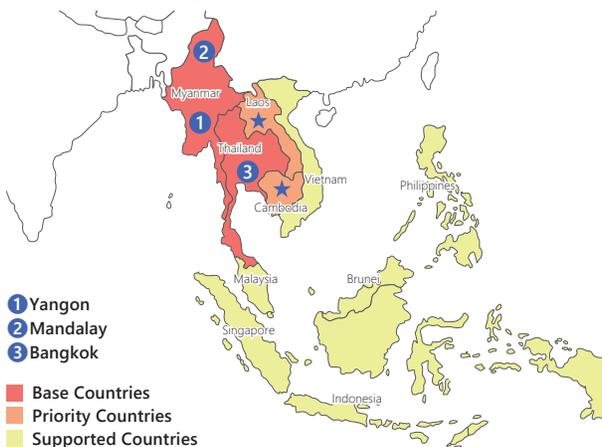
Six national universities including our university (Chiba, Niigata, Kanazawa, Nagasaki, Kumamoto, and Okayama) have been engaged in activities taking place across ASEAN countries to recruit top-level international students since the launching of the Coordinator for Study in Japan project (Myanmar), which is the previous incarnation of the Study in Japan Global Network Project (ASEAN). In April 2018, these activities were expanded to all ASEAN regions. The Okayama University Japan Educational Information Center, Myanmar (OJEIC) in the cities of Yangon and Mandalay contributes to the recruitment of international students by receiving consultations for study abroad, and holding Study in Japan Fairs and Seminars in ASEAN countries centered around Myanmar. The Bangkok satellite office established in Thailand in January 2020 promotes activities centered around Thailand, Cambodia and Laos.

<https://studyinjapan-asean.jp/?lg=en&page=>



Source: The Japan Student Services Organization (JASSO) Survey Results of the Foreign International Student Enrollment Status

Study in Japan Global Network Project Regional Office in ASEAN



Student experiences with international exchange

Foreign international students and students with study abroad experience who are an indication of the situation for international exchange for students are steadily increasing due to initiatives including the Top Global University Project of the Ministry of Education, Culture, Sports, Science and Technology (MEXT). However, the COVID-19 pandemic has made international exchange difficult. This situation coupled with the expansion of IT technology has brought us to a situation where the former concept of studying abroad could completely change. We are working on the development of online programs so that we can continue to provide appealing experiences for our students.

Study in Japan Promotion Seminars in ASEAN

We are making efforts to promote Study in Japan among the seven ASEAN countries (Myanmar, Thailand, Cambodia, Laos, Vietnam, Indonesia, and Malaysia) in coordination with related Japanese and local universities and institutions.

In AY 2019, we held 41 seminars of various types including Academic Seminars, one Study in Japan Fair, and 37 mini Study in Japan Fairs that were attended by a total of around 13,000 participants.

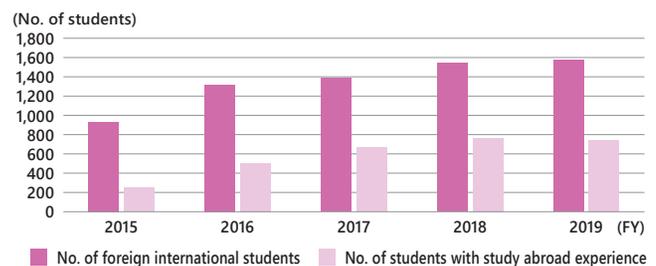
In addition to receiving information about our university and explanations such as regarding exams and scholarships, each of these events provided booths where participants could freely receive consultation, and many students enthusiastically asked questions and listened attentively to our explanations.



A "Japan Seminar" in progress in Laos

Simultaneous holding of a Job Fair and Study in Japan Fair through a collaboration between industry and academia

The Myanmar-Japan Platform for Human Resource Development that our university participated in from its establishment in 2015 was simultaneously held with the Study in Japan Fair and Job Fair in Myanmar in August 2019. The fair featured exhibitions from 10 companies including Japanese corporations and received around 1,400 visitors. Participants at the event were able to receive information about study abroad and job opportunities in one stop, and it was a golden opportunity to think about finding employment after studying abroad by listening to the experiences of people who were working for Japanese corporations that had previously studied in Japan.



The Organization for Global Advanced Interdisciplinary Sciences and Research Professor Program is leading the way for next generation research

We provide focused support for research fields with our strengths, discover and develop new research groups, and enhance support for outstanding researchers.

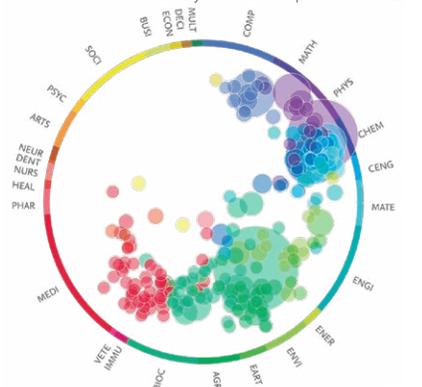


Efforts towards the continuous creation of science and innovation

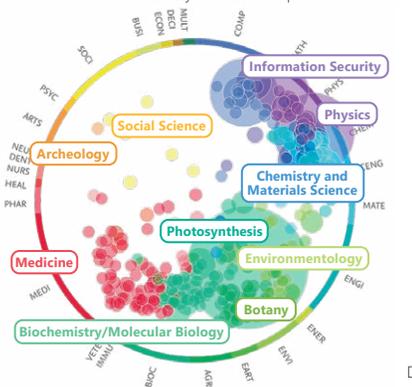
As for the "Organization for Global Advanced Interdisciplinary Sciences", we discover and develop research groups, which will be a further strength of our university, and support the development towards creating research centers that will become the faces of universities in the future. Specifically, we have positioned the Organization for Global Advanced Interdisciplinary Sciences as an

incubation system, and we are accelerating research activities by supporting the selected research groups with activity costs for formulating projects and providing accompanying support from research management personnel such as URA. As a result, these research groups have been organized and developed into research institutes, centers, and cores.

2010-2014 Total number of publications: 1,004
 Number of publications in the Top 10% by citations: 102
 Number of internationally co-authored publications: 269



2015-2019 Total number of publications: 1,340
 Number of publications in the Top 10% by citations: 124
 Number of internationally co-authored publications: 454



The wheel (the large outer circle) maps 27 research fields, and the circles within this wheel are the research results extracted for a group of researchers focused support on the Organization for Global Advanced Interdisciplinary Sciences. The size of the circles inside the wheel indicates the number of publications in each research field, and the closer circles to the center of the wheel indicate more interdisciplinary research. If we compare the data up to 2014, when the Organization for Global Advanced Interdisciplinary Sciences was established, with the one after that, we can see the increase in new research fields (the number of circles) and in the interdisciplinary fields (the number of circles closer to the center). The number of publications is increasing in the existing fields as well (as indicated by the enlarged size of the circles).

Data source: Data exported from SciVal (Elsevier) on August 6, 2020
 Types of publications included all publication types.

Strengthening of AI and data science to realize Society 5.0

In 2020, we newly established "Cyber-physical engineering informatics research core: Cypher" in the Organization for Global Advanced Interdisciplinary Sciences for the purpose of strengthening applied research in AI and data science to create areas that have the potential to become critical technologies for innovation in the future.

Cypher conducts education and research activities across the entire university to achieve the three goals listed below, and is working on achieving technical innovations through the application of AI and data science to realize Society 5.0 and developing human resources who excel in these areas.

- (1) Organize groups of experts in AI and data science across the entire university and establish an intensive and function-based support framework for advanced technology.
- (2) Assign full-time practical faculty members to carry out social implementation by expanding the scope of joint research and deepening research.
- (3) Introduce practical education that anticipates the trial and error in social implementation through the participation of students in this research center.

Research Professor Program supporting the activities of talented researchers

From FY 2018, we established a system to certify an associate professor with outstanding research achievements as a "Research Professor" to support the activities as a Principal Investigator (PI). Although research professors are requested to make efforts to obtain external funds, our university as a whole supports their research by providing incentives for research expenses and requesting supports from the departments to which they belong. In FY 2019, Associate Professor TAKAGUCHI Yutaka of the Graduate School of Environmental and Life Science and Associate Professor FUTAMI Junichiro of the Graduate School of Interdisciplinary Science and Engineering in Health Systems were newly appointed as

research professors. Research Professor Takaguchi is conducting research on CO₂ free hydrogen production through water-splitting using sunlight and a carbon nanotube photocatalyst. The results of this research are expected to be used as a clean hydrogen energy production method that supports the hydrogen society. In addition, there are also high hopes for the future results of research by Research Professor Futami who is aiming to establish technology that can rapidly profile the state of immune systems from very small quantities of blood taken from patients. In FY 2020 we have launched an "Associate Research Professor Program" which expands the scope of this program to lecturers and assistant professors.

"Institute for Planetary Materials" Pioneering In the Field of Planetary Materials Science

We promote cutting-edge research on the formation and evolution of Earth and planets and the origin of life, aiming to become an international cooperative research and education hub.



Overview of Institute for Planetary Materials

The Institute for Planetary Materials is located in Misasa Town, Tottori Prefecture, which is known for its radon hot springs, and pursues cutting-edge research on the origin, evolution, and dynamics of the Earth, planets, and life through an extensive experimental and analytical research program. The institute was designated as "the Joint-Usage/Research Center" by the Ministry of Education, Culture, Sports, Science and Technology (MEXT) in FY 2010, and has been accepting a large number of joint-use researchers from Japan and overseas every year. We are also endeavoring to foster the next-generation researchers through the "Division of Earth and Planetary Materials Science" at the Graduate School of Natural Science and Technology, a five-year Ph.D. program pioneering in Japan, and the internationally well recognized "Misasa International Student Intern Program".

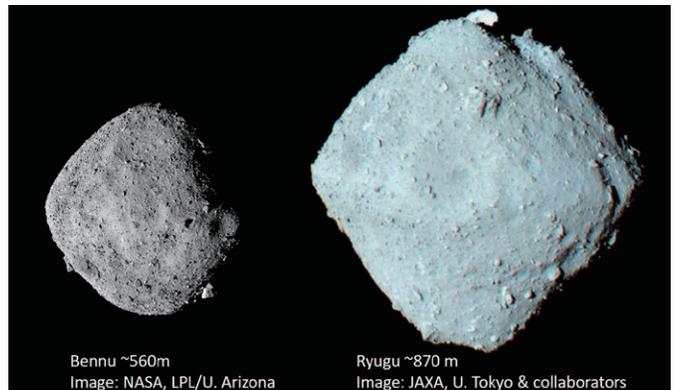
<http://www.misasa.okayama-u.ac.jp/eng/>



Participating students and research advisors in the Misasa International Student Internship Program 2019

Asteroid sample return mission: Exploring the formation of the Earth and the origin of life

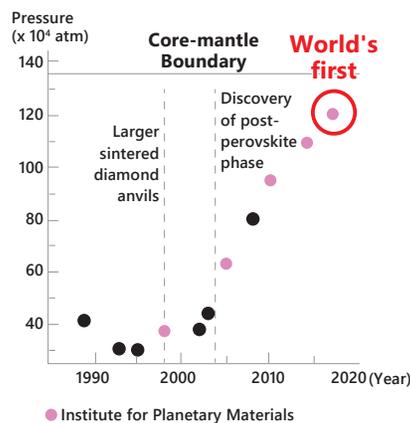
As a Phase 2 Curation Facility for JAXA's "Hayabusa2," a sample return mission from asteroid "Ryugu," we are preparing for comprehensive analysis of the collected samples returned to Earth at the end of 2020. Our member is also participating in NASA's "OSIRIS-Rex" asteroid sample return mission from asteroid "Bennu", the findings from which have been published in the scientific journal Nature and other publications. These asteroids are thought to be rich in water and organic matter, which are the ingredients of life, and are expected to provide insight into the formation of the Earth and the origin of life.



Images of asteroid Ryugu (right) and Bennu (left)

High P-T experiments: Elucidating the internal structure and evolution process of the Earth and other planets

We study the interior of the Earth and other planets through high-pressure experiments using large-volume high-pressure apparatus, which is our traditional strength. The lowermost part of the Earth's mantle is an ultra-high temperature and pressure environment up to 135×10^4 atm and 4,000 K, and we have succeeded in generating high pressure exceeding 120×10^4 atm for the first time in the world using large-volume high-pressure apparatus (see the figure to the right). Through the development of original physical properties measurement technology under ultra-high pressure, we are investigating the transport mechanisms of heat and materials inside the Earth and other planets, and elucidating the evolution process of the Earth and other planets. As an example, we recently succeeded in elucidating the convection pattern of the lower mantle, which was published in the scientific journal Nature.



Promising Researchers for the Next Generation

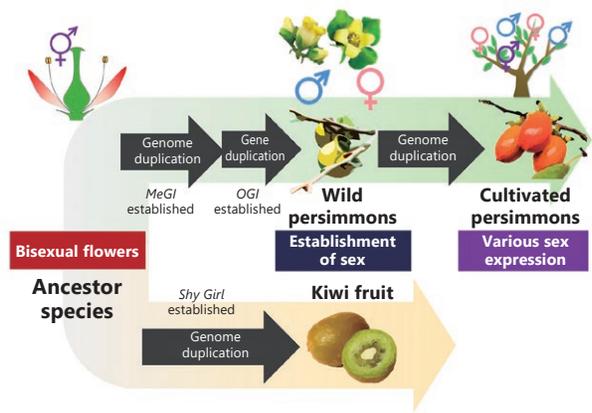
Researchers at Okayama University are active in a wide range of fields. The following is a look at some of the undertakings by our young researchers, who serve as leaders for the next generation.



Design of Flowers and Fruits Viewed from the "Evolution of Sex" of Plants

Associate Prof. AKAGI Takashi, Graduate School of Environmental and Life Science

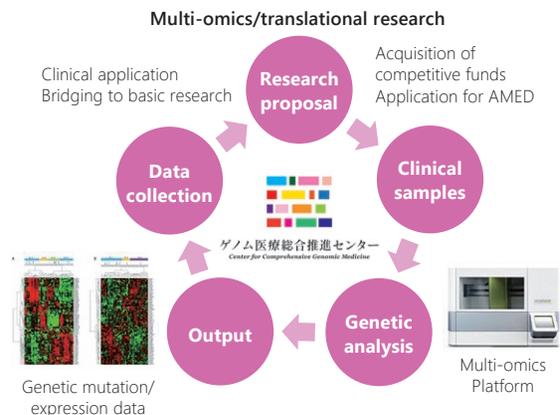
The "sex" of plants is one of the most important characteristics for cultivation of agricultural products and breed improvement. In spite of a long history of research of over 100 years, it is still mostly wrapped in mystery. We are conducting world-leading research on the mechanism of sex determination of plants and discovered the first sex-determining genes of plants "OGI" and "MeGI" in persimmons (Science, 2014). We have also elucidated the evolutionary process of sex in plants from the sex-determining genes "Shy Girl" and "Friendly Boy" in kiwi fruits (Nature Plants, 2019). In recent years, we have succeeded in the development of technology to artificially change sex expression in agricultural products and production of kiwi fruits with bisexual flowers through technology called "genome editing."



Cancer genomic medicine and multi-omics/translational research

Research Prof. ENNISHI Daisuke, Okayama University Hospital Center for Comprehensive Genomic Medicine

Large-scale gene analysis (Multi-omics/translational research) using clinical samples is essential for further development of rapidly spreading cancer genomic medicine. At the Center for Comprehensive Genomic Medicine, we have established the system for large-scale translational research using a number of clinical samples and cutting-edge genetic technologies in cooperation with clinical departments and biobanks. We aim to promote world-level cancer research in the entire university by establishing a crosscutting research system. Also, we will establish a foundation that will create new interdisciplinary innovation, such as using healthcare big data with the topic of multi-omics medicine and development of systems by introducing IoT technology and artificial intelligence (AI). Thus, we aim to achieve ultimate cancer precision medicine as Japan's first model district providing medical care using cancer multi-omics.

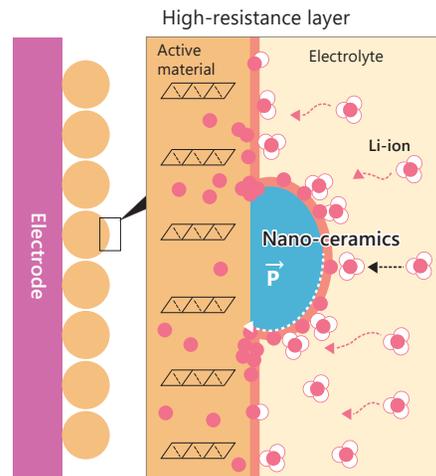




Ceramics Will Change the Batteries of the Future - Innovative Batteries Using Nano-Ceramics -

Associate Prof. TERANISHI Takashi, Graduate School of Natural Science and Technology

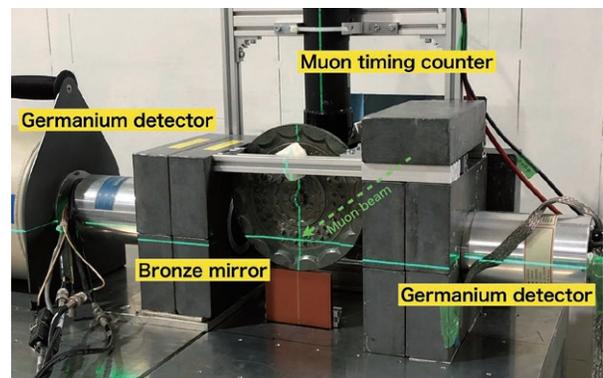
The rechargeable battery, represented by the lithium-ion battery, plays an extremely important role to support modern society's infrastructure. In recent years in particular, looking into next-generation electric vehicles, there is increasing demand for the development of innovative rechargeable batteries that can be fully charged within a few minutes or seconds. We have discovered that a small battery can be charged in a very short time, within tens of seconds, by artificially introducing nano-ceramics capable of inducing charges to the electrodes of the lithium-ion battery. We will expand the knowledge and technologies that we have gained toward post-lithium-ion batteries, such as all-solid-state batteries. We aim to develop an innovative battery that achieves high energy density and outstanding rapid charging performance to support social infrastructure in near future.



Clarifying the Reality of "Himiko's Mirror," an Ancient, Triangular-rimmed deity-and-beast mirrors, by Interdisciplinary Research

Assistant Prof. MINAMI Kentaro, Archaeological Research Center

The ancient, triangular-rimmed deity-and-beast mirrors, also called "Himiko's mirror," was a symbol of the central administration in the Kofun period. Some suggest that this bronze mirror was sent by the emperor of Wei when Himiko, the queen of Yamataikoku, sent an envoy in 239. However, the mirror's place of manufacture is still veiled in mystery. We are attempting to clarify this mystery of the place of manufacture with archaeology, physics, metallography, and science of art. This mirror is a casting consisting mainly of bronze, tin, and lead. The place of manufacture can be identified by comparing the compounding method and casting method with other bronze mirrors manufactured in various places. Thus, we are researching the compounding ratio of raw materials and distribution of elements when this mirror was created in a completely non-destructive way using a special X-ray called "muon" that permeates substances. In addition, we are also investigating technical characteristics of the founder with a casting experiment. We hope that the history of Japan will be reconstructed by approaching the reality of "Himiko's mirror."



Building an Ecosystem to Accelerate Implementation in Society with "Organization-to-Organization"

Okayama University is promoting open innovation to solve problems together with various stakeholders and to strengthen industry engagement.

17 PARTNERSHIPS FOR THE GOALS



From "Industry Collaboration" to "Industry Engagement"

In order to strengthen industry engagement, led by the Organization for Open Innovation Strategy Development and the Organization for Research Strategy and Development at Okayama University, we are promoting collaboration with companies, research institutes, local governments and other groups. As of April 2020, we have concluded 39 cooperation agreements. Currently, we are promoting engagement activities on an organizational basis with partner companies etc. and this joint research has produced fruitful results. In FY 2019, we signed a cooperation agreement with Hagihara Industries Inc., a major synthetic resin fiber company headquartered in Okayama Prefecture. ASANO Kazushi, President and Representative Director said in a greeting, "We would like to further promote business activities to achieve the SDGs through joint research and mutual support of human resource development with Okayama University, which conducts specialized research as a Research University for the Advancement of SDGs and Well-being". In addition, we have been conducting joint research on biobanks with Mitsui-Soko Holdings Co., Ltd. since 2015. Utilizing the know-how accumulated in that research, the company has produced results such as the commercialization of "Integrated low-temperature control, storage, and transportation services for clinical research specimens etc. containing iPS cells". With those results as a base, we signed a comprehensive cooperation agreement to work with the company to further promote academic research and apply the research results in society by promoting joint research in various fields beyond the life sciences and mutually supporting for human resource development. Going forward, we will continue to accelerate efforts towards the societal implementation of research results by enhancing cooperation with "Organization-to-Organization".



Signing ceremony for cooperation agreement with Mitsui-Soko Holdings Co., Ltd.

Recent Cooperation Agreement Partners

FY 2018

- 10 municipalities in the Sakushu area of Mimasaka-no-Kuni (Tsuyama City, Maniwa City, Mimasaka City, Kagamino Town, Shoo Town, Nagi Town, Kumenan Town, Misaki Town, Shinjo Village and Nishiawakura Village) and the TSUYAMA Chamber of Commerce and Industry
- Okayama Prefecture

FY 2019

- National Institutes of Biomedical Innovation, Health and Nutrition
- RIKEN SPring-8 Center (SPring-8, SACLA)
- Hagihara Industries Inc.
- Okayama Chamber of Commerce and Industry
- Mitsui-Soko Holdings Co., Ltd.

国立大学法人岡山大学・萩原工業株式会社 連携・協力に関する協定書調印式



President Asano (right) and President Makino firmly shaking hands with the agreement in hand



Governor Ibaragi (right) and President Makino holding the sign of the "Okayama Prefecture Center for Joint Research Between Companies and Universities"

Contributing to the improvement of R&D capabilities of local companies in collaboration with local governments

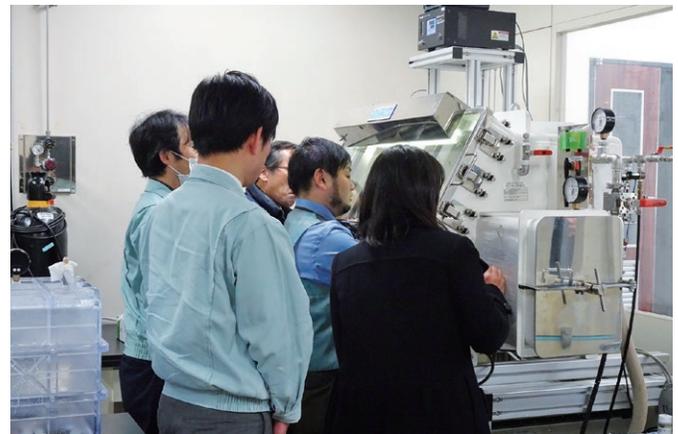
In October 2019, the Okayama Prefecture "Center for Joint Research Between Companies and Universities" was opened on the Tsushima Campus of Okayama University. As a collaboration between the prefectural government, Okayama University, and universities in the prefecture, the center is creating a platform for improving the research and development capabilities of companies in the prefecture and working on educational programs for developing human resources. Specifically, the center is enhancing cooperative and collaborative capabilities between coordinators from various organizations in the prefecture while also aware of corporate needs in the prefecture, facilitating university seeds, making individual matches between companies and universities, and promoting joint research.

Okayama Prefecture and Okayama University are promoting industry in the prefecture by implementing the "Project to promote regional industry in collaboration with the university" with the university centered on the "Endowed Course Project" and the "Project to Establish Joint Research Courses".

In the "Endowed Course Project", the "Okayama IoT/AI/Security Course" was set up at the Graduate School of Natural Science and Technology to provide education centered on IoT/AI/security to employees of companies in the prefecture. This course combines online lectures using specialized Video On Demand teaching materials and Project Based Learning (PBL) exercises that feature actual devices and programming.

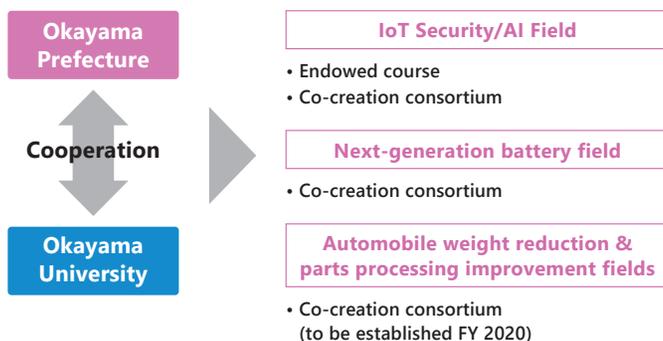
In FY 2019, through the "Project to Establish Joint Research Courses"

overseen by Okayama University, we established the "Okayama AI Secure IoT Co-creation ConSortium" in the field of IoT security and AI and the "Okayama Next-Generation Battery Co-creation Consortium" in the field of next-generation batteries as "places for co-creation" where companies that want to conduct joint research and university researchers gather for multifaceted collaboration. These co-creation consortia have dedicated coordinators and are engaged in activities to aid joint research, such as launching an open lab that member companies can use for research.



Okayama Next-Generation Battery Co-creation Consortium Open Lab

Business structure related to agreement with Okayama Prefecture



FAGI Walker Project

Since 2016, Okayama University has been working on a collaborative project between industry, government and academia to change how spectators go to J2 Fagiano Okayama matches from cars to other means to alleviate traffic congestion and regional rejuvenation. As a result of this initiative, 11% of private car users switched to other means of transportation (railway, bus, etc.) in 2019. In 2020, this initiative received the 11th EST (Environmentally Sustainable Transportation) Traffic Environment Award Encouragement Award.



Face - Facing your Face, Facing our Community, Facing the World

We face patients, have a close connection with the community, and provide medical care that will spread worldwide.



Surgery using "da Vinci"

Treating cancer with "Zerobot®" developed by our university



Expanding applications - The accumulating achievements through robotic surgery

At Okayama University Hospital, staff surgeons at the Minimally Invasive Therapy Center are working to promote the use of safe endoscopic and robotic surgeries. We introduced the "da Vinci" surgery assist robot for the first time in Okayama Prefecture in 2010, and remodeled it into two new "da Vinci" robots in 2017 to perform the largest number of robotic surgeries among national university hospitals nationwide.

Currently, we perform robotic surgery for mediastinal tumors, lung cancer, esophageal cancer, stomach cancer, rectal cancer, renal cancer, bladder cancer, prostate cancer, pancreatic tumor and endometrial cancer*, as well as kidney transplants. In FY 2019, 293 robot surgeries were performed, including 50 esophageal cancer surgeries that were the largest number in Japan.

In addition, health insurance began covering pyeloplasty and sacrocolpopexy using robot-assisted surgery from April 2020, and we have started performing these operations.

*The applicable types of surgery are based on results as of October 2020.

<https://www.okayama-u.ac.jp/user/hospital/en/index183.html>

As a footing for IVR therapy caring for body and mind

At the Interventional Radiology (IVR) Center of Okayama University Hospital, we perform approximately 4,000 cases of IVR therapy annually, which is among the highest in Japan. The center is comprised of the 5 departments of cancer/general, cerebral nerve system, cardiovascular system, pediatric cardiovascular system, and anesthesia, with outstanding specialists assigned to each department. The medical robot named "Zerobot®" was developed as an initiative of collaborative research in medicine and engineering in 2018. Using this robot, an interventional radiologist moves the robotic arm while watching real-time CT scan images and inserts the needle into the lesion. Subsequently, cancer can be treated by burning or freezing with the specific needle. It is advantageous for interventional radiologists to avoid radiation exposure during the therapy since they perform the procedure at a place apart from the CT scanner. An investigator-initiated clinical trial is being conducted in 2021, aiming to commercialize Zerobot® as a world's first technology from Japan. The robot will also be continuously improved to perform highly precise procedures not possible with human hands and remote medical procedures.

Okayama University Hospital aims to enable further development of cutting-edge, minimally invasive treatment as a major center for IVR therapy.

<http://www.okayama-u.ac.jp/user/ivr-c/en/index.html>

Department of Clinical Genetics and Genomic Medicine - Providing State-of-the-Art Precision Medicine

Okayama University Hospital was approved as the only "Genomic Cancer Medicine Core Hospital" in Chugoku and Shikoku medical area, newly establishing this department in 2018. The department performs precision oncology, genetic counseling and genetic testing. Recently, the group launched the Mid-West Japan Hereditary Tumor Cohort study. The study covers a wide medical area among a population of over 11 million with the aim of decreasing cancer deaths as a result of hereditary tumors.

<https://www.okayama-u.ac.jp/user/hospital/en/index148.html>



Genetic counseling gives clients information about how genetic conditions may affect clients and their relatives.

G20 Okayama Health Ministers' Meeting Excursion (hosting visitors)

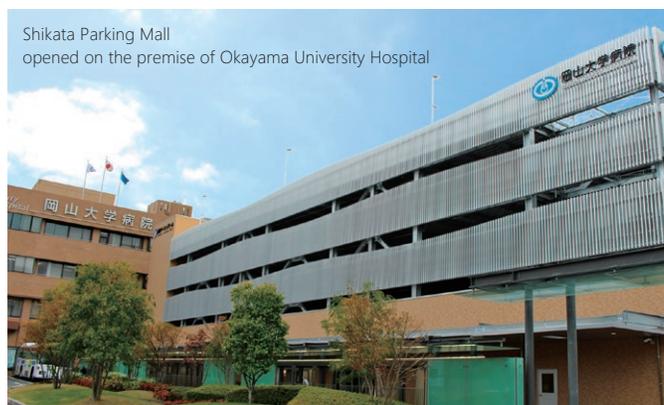
A G20 Health Ministers' Meeting was held in Okayama in October 2019, and the health ministers of G20 member countries and guest countries visited Okayama. Okayama University Hospital was selected as a destination of excursion, and the health ministers of those countries were invited to the Interventional Radiology Center, a cutting-edge treatment institution, where Director of Hospital, Prof. Kanazawa, explained about the equipments and treatment methods. Also, we viewed the video materials to the health ministers and explained the details of our DMAT (Disaster Medical Assistance Team) activities for the heavy rain disaster in July 2018, the biobank activities, and medical devices developed in collaboration with companies.



Director of Hospital, Prof. Kanazawa, explained the cutting-edge equipments at the Interventional Radiology Center (front right)

Opening of Shikata Parking Mall

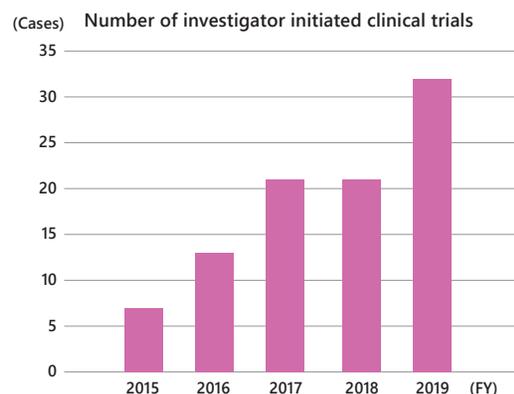
Amenity mall "Shikata Parking Mall," opened in May 2020, is composed of a multilevel car park, a convenience store, and a dispensing pharmacy. The multilevel car park can accommodate 302 cars (including 11 car parking spaces for the disabled) and about 100 bicycles, with 2 chargers for electric vehicles (EV). The building was renovated considering the usability and safety of users by adopting a universal design for the entire building and eliminating steps. Also, the mall building has a space for disaster prevention equipments and can provide a triage function in case of a disaster.



Shikata Parking Mall opened on the premise of Okayama University Hospital

Development of new treatment drugs and vaccines

Various clinical studies are conducted worldwide for diseases that have no effective treatment drugs or vaccines, such as COVID-19 and cancer. At Okayama University Hospital, physicians and dentists are conducting a number of "investigator initiated clinical trials" and proceeding with research and development to help patients overcome diseases and extend healthy lives. (Okayama University Hospital was accredited as a Core Clinical Research Hospital in March 2017 under the Medical Care Act that plays a major role in clinical studies and investigator initiated clinical trials at an international level.)



Work-style Reform at Okayama University Hospital

We are promoting proactive efforts to balance the provision of better health care services with the well-being of healthcare professionals.



Aiming to create a comfortable work place environment where healthcare professionals can continue to work.

In response to the revision of the work-style reform law in April 2019, Okayama University Hospital applied the " Guidelines for Working Hour Management " to all positions. It became possible to conduct fair and transparent management of working hours by clearly showing the ideas and management methods based on the law related to working hours in this guideline and clarifying the work and activities outside work. We introduced the work-sharing system in 2020, providing support so that our doctors can balance child-rearing/nursing and their work. In this system, the doctors who want to work for a university hospital but cannot work full time form a pair or team, and this pair or team is responsible for the work of one doctor. Thanks to this system, doctors can reduce their burden by covering each other, and they can continue their careers while maintaining their skills. We will introduce the work hour management system using smartphones within FY 2020, and aim to manage the work hours of doctors and dentists with a more objective method. Furthermore, we established the Center for Diversity and Inclusion in December 2019 for the promotion of work-style reform of healthcare professionals and career support, and promote proactive efforts aiming at a balance between better work-styles for healthcare professionals and their welfare. In the response to the spread of COVID-19 infection, we established a temporary after-school daycare center and take care of the children of healthcare professionals so that they can focus on their work without worrying about their children.



Operation example of the work sharing system

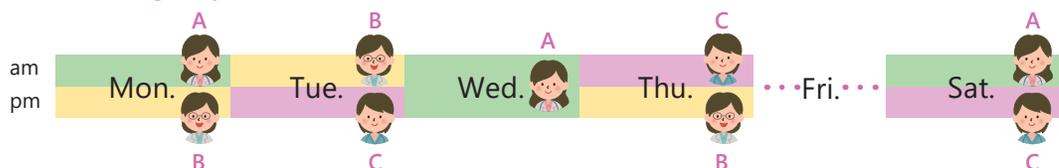


(1) Sharing the work of 4 days a week (+ day duty) with a few doctors



Sharing with other doctors!

(2) Sharing a day's work with a few doctors



Countermeasures for COVID-19 in Okayama University Hospital

We established the "COVID-19 Countermeasure Team Meeting" in the hospital on March 5, 2020, to fight against the COVID-19 pandemic. With organizing the infection control team, bed control team, and emergency team under the leadership of the Director of the hospital, we conduct weekly meetings (starting from 8 a.m. every Thursday) in cooperation with the Okayama Prefecture (Department of Health and Social Welfare, Health Promotion Division) and Okayama City Hospital. The measures that have been taken so far include restrictions of the outpatient visits by developing a strict screening rule, prohibition of family visits to hospitalized patients, preparation of hospital beds to treat COVID-19 patients, restrictions of regular service including surgery, introduction of PCR-based screening system prior to surgery, and development of a triage system at the hospital entrance.

We established Okayama City Seven Hospital COVID-19 Countermeasure Council on April 8, 2020 (the name changed to Covid-19 Okayama Response Experts/directors meeting in September 2020), to combat the spread of the disease. We hold web meetings from 5 p.m. every Wednesday where we share detailed information with 6 hospitals of CMA-Okayama*, Kawasaki Medical School General Medical Center, Okayama prefecture, and Okayama City Public Health Center. Also, we had a meeting with the Okayama economic community on April 16, 2020, and established a bidirectional cooperation platform. This allows us to interchange what we need each other to survive amid the infection crisis. Local companies provide us with supplies for infection prevention (surgical masks, transportation vehicles, etc.), and vice versa we offer them professional guidance and advice regarding infection prevention measures. Many people provided us with heartfelt support, including academic capital funds to endure the hardship of long-lasting COVID-19 catastrophe. The support is very encouraging, and all the employees of the hospital are doing our best.

Impact on hospital management

Among the national university hospitals, the largest decrease in the total amount of operation in April 2020 compared to the previous fiscal year was about 0.78 billion yen. At our hospital, the amount decreased by about 0.18 billion yen. Compared to April 2019, all factors directly connected to income showed decreasing trends, such as the amount of operation, number of outpatients, number of first visit patients, the total number of



COVID-19 Countermeasure Team Meeting



Okayama City Seven Hospital COVID-19 Countermeasure Council

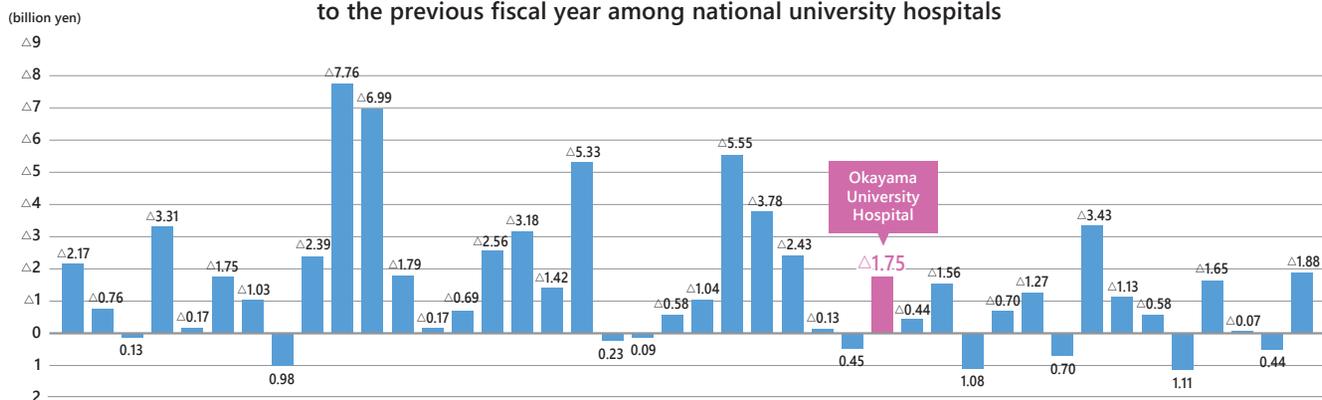


Support from local companies

*Council for Medical Alliance, Okayama (CMA-Okayama) established in June 2017 to nurture medical professionals and promote constructive cooperation for clinical trials and research in order to extend healthy lifespans and minimize health disparities in the Okayama medical region. Comprised of the six organizations of Okayama City, Okayama University, Social Welfare Organization Saiseikai Imperial Gift Foundation, National Hospital Organization, Japan Organization of Occupational health and Safety, and the Japan Red Cross Society.

inpatients, number of new hospitalization, number of referred patients, occupancy rates of beds, and number of surgeries. Although physical and psychological burdens on hospital staffs have increased, we are doing our best effort to meet the expectations of society. Now, in comparison with the initial phase of the pandemic, materials needed for infection prevention are steadily supplied.

Comparison of decreased operation amount in April 2020 compared to the previous fiscal year among national university hospitals





Pay it Forward + SDGs Story 3

A Project That Benefits All Amid the COVID-19 Pandemic

In June 2020, amid continual worsening of the COVID-19 (2019 novel coronavirus) pandemic and countless critically-toned social media posts further darkening everyone's mood, fourth-year Faculty of Law student MAKI Haruki took action. Explaining that "it's easy to point the finger at others, so just take action instead!," he pursued a student-led project together with local restaurants to help other students meet their dietary needs and ensure that restaurants continue bringing in customers as COVID-19 continues to spread.

The University provided financial support for MAKI's efforts, and 9 local restaurants took part in the project by providing a combined average of 400 lunch sets per day free of charge to students for 10 days running as part of the food aid.

Just as pursuit of the SDGs helps address society's needs, MAKI's project is a prime example of activities that address the needs of both students and the local community amid the pandemic. Originating from the mind of an Okayama University student, these efforts involve both the University and the local community to realize a project that is beneficial for all.





V. Governance

VI. Data Section

Okayama University Governance System

We are deepening the promotion system based on goal management that reflects information integrated through Institutional Research/Institutional Effectiveness (IR/IE) to university management, and are reforming university management.



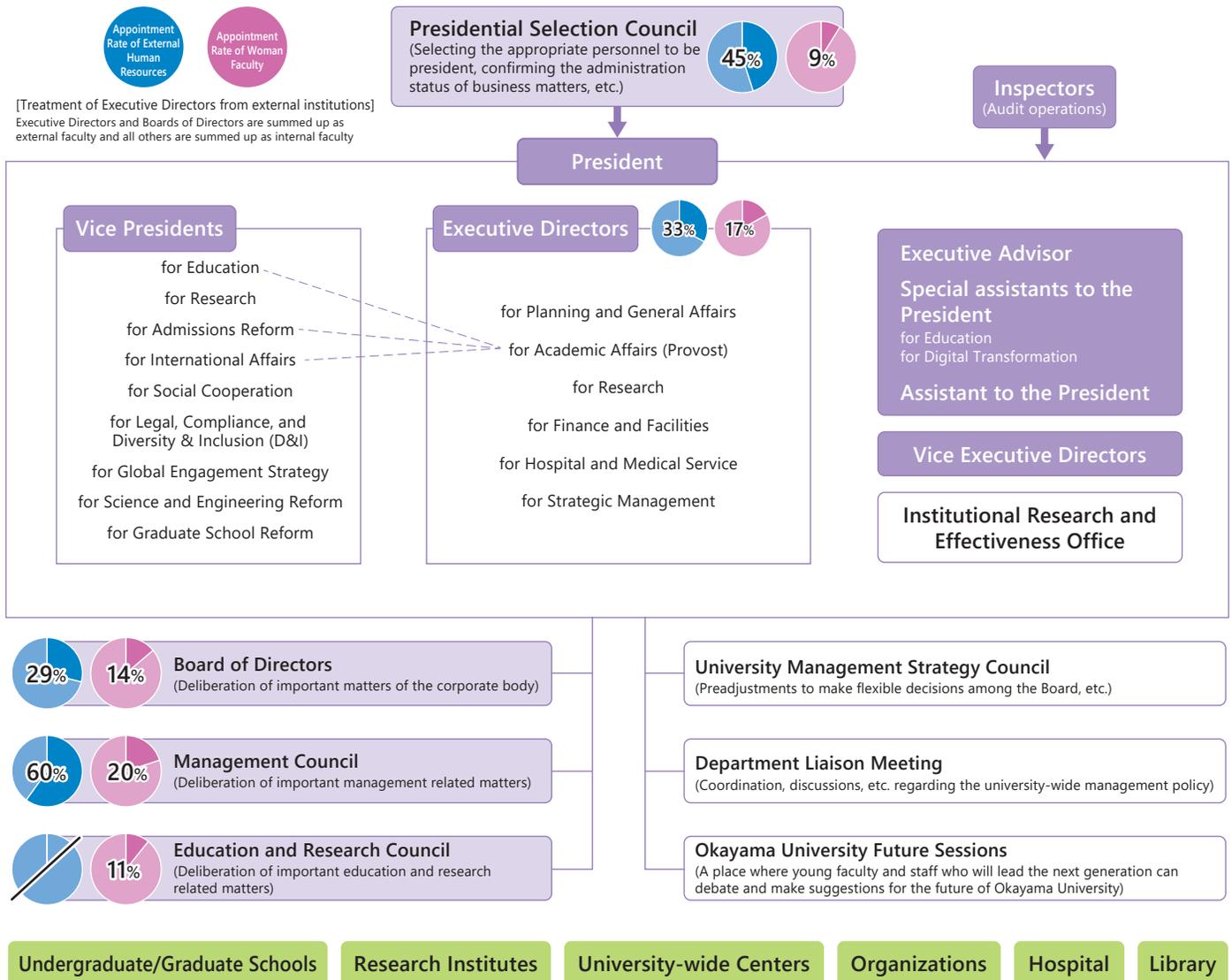
University management reform

Collaborative governance that incorporates various perspectives

National university corporation necessitates a high degree of publicness, and requires the creation of a robust governance system from the fact that various types of financial support are being provided as well as fulfilling a responsibility to provide explanations to the various concerned parties (From "National University Corporation Governance Code").

At Okayama University under the leadership of the president, a system has been established that enables the president to make decisions from various perspectives including appointing executive directors, an executive advisor, and special assistants to the

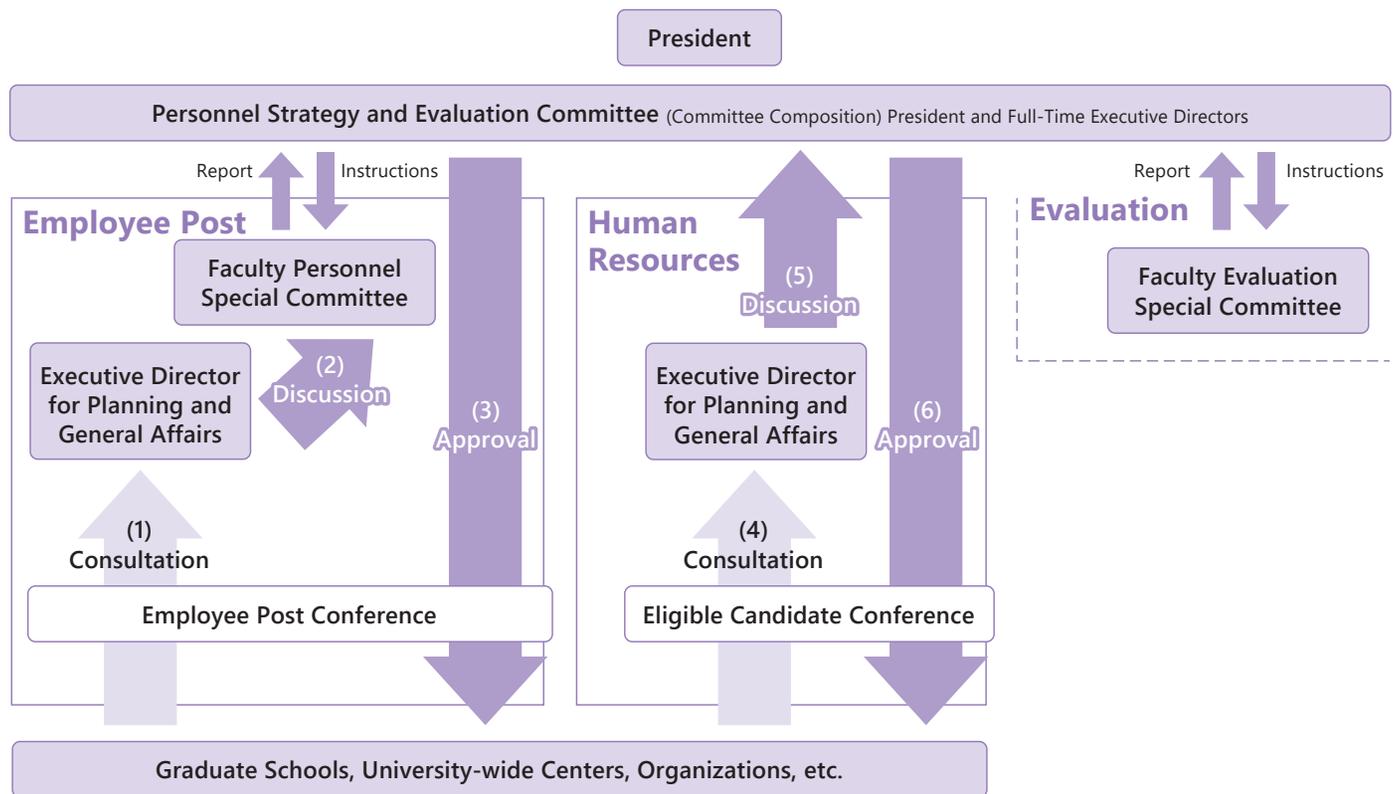
President from external human resources to conduct strategic university management while taking in the opinions of various concerned parties including from industries and local societies. In addition to the establishing of a Legal Council as prescribed in the National University Corporation Act, we are promoting collaborative governance by taking steps such as establishing a University Management Strategy Council to conduct flexible decision-making among the Board and Okayama University Future Sessions where young faculty and staff who will lead the next generation can debate and make suggestions for a sustainable Okayama University.



New personnel system based on a management and strategic perspective

We newly established a the first-ever Personnel Strategy and Evaluation Committee in April 2019 that serves as a deliberative body with regards to personnel across the entire university. This committee was established to manage all faculty posting and recruitment in consideration to university management among other perspectives under the leadership of the president and to reflect the appropriate implementation and treatment of performance appraisals. For faculty posting and recruitment related decisions, our committee first deliberates on the needs for employment (post) from a university management and university strategic perspective and make a decision on whether to refill the position. Recruitment is conducted for the post selected to be refilled such as by issuing an international classified ad, and hiring decisions are made after committee deliberations on the accomplishments of multiple candidates recommended by institutions

such as from graduate schools with cooperation from URA and other personnel. In addition to deliberation of education and research accomplishments at faculty meetings such as at graduate schools, we have been able to secure personnel that can make strategic contributions to our university by holding committee deliberation from a university-wide perspective. In FY 2019, we decided to hire, promote, and reshuffle 146 faculty members. In addition, in order to create opportunities to actively utilize young faculty and revise the age composition of faculty, we decided to hire 12 top-level young researchers (tenure track junior assistant professors) under the initiative of university executive officers. We will continue to fully utilize our human resources into the future, and strengthen university functions and motivate our faculty by implementing personnel strategies that build on university strengths.



Shift to an evaluation program that realizes higher quality faculty activities

In the aim to promote the revitalization of areas including awareness raising of our faculty and implementation of education and research activities, we have been implementing faculty activity evaluations from FY 2008 and have been also using the evaluation results for salary reviews.

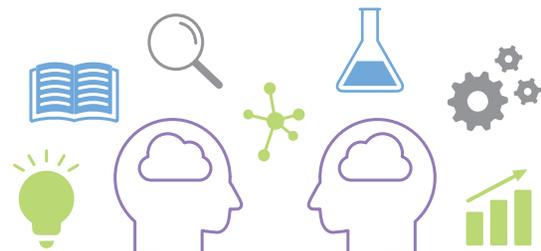
In FY 2019, we fundamentally revised the faculty activity evaluation program and created areas to evaluate across the entire university with a focus on objective targets as evaluation areas based on organizational objectives. In addition, to effectively make use of the evaluation results for subsequent activities, we revised our evaluation cycle.

We built a system to reduce the work burden of faculty and efficiently manage activities, and from FY 2021 we will adopt new faculty activity evaluations. Our faculty are striving towards higher quality education and research and are implementing broad activities that utilize specialized knowledge. The further enhancement of these efforts lead the significant growth as an organization.

Systematic Human Resource Development to Develop Staff with the Necessary Skills for University Management of the Future

Our university established the IR/IE Office in FY 2017 with the aim of supporting university operations. In FY 2020, we newly established IR/IE Office Planning Meetings and transitioned to a young staff member-led framework so that we could also systematically develop staff with the required skills for university management of the future.

Prospectively, we will introduce methods for knowledge management, and strengthen the IR/IE Office to achieve consistent university management under the direction of faculty and URA with specialized knowledge.



Realizing Collaborative Governance

We are working to create a resilient university organization that is highly adaptable to change through collaborative partnerships.



Thinking about Okayama University as a sustainable entity A new governance platform

Our single most distinctive feature within SDG University Management that we advocate is university governance reform to realize joint engagement. We are transitioning away from the tendency of university governance from only the perspective of the organizational management side towards collaborative governance, and promoting a better understanding within our university. The Okayama University Future Sessions being held from FY 2017 is one measure that precisely embodies this concept. These Future Sessions are a place where young faculty and staff who will lead the next generation of the university can freely think about Okayama University as a sustainable entity. In the third installment of the Future Sessions was held in FY 2019 under the theme of "Further deepening Okayama University x the UN SDGs." In addition to the participation of young faculty and staff who are active in education, research, and operation management, students serving as SDG advisors for our university were also in attendance, leading to discussions of constructive ideas that took questions and issues from



Participants engaging in friendly discussions



Panel discussion in progress at the Okayama University Integrated Reporting Forum 2019

the perspective of a student into account. In FY 2020, under the theme of "Further Enhancing Diversity & Inclusion (D&I) at Okayama University," we plan to hold discussion on measure to further enhance organizational diversity and inclusion. In addition, it is important to implement initiatives that raise the level of engagement skills of the university organization by forming a wide consensus among members and fostering collaborative governance and initiatives that enhance the transparency of governance by sharing information with people in local societies. In addition to publishing our first integrated report in FY 2019, we held the Okayama University Integrated Reporting Forum 2019 at the timing of its publication that was attended by our members as well as alumni, students, high school students, visitors from companies, and members of the local region. During the panel discussion, alumni of our university who were serving as leaders in corporations and in government and faculty that were members of Okayama University Future Sessions, staff, and 3 attendees representing the study body took the stage to actively exchange their opinions. Presentations and suggestions were given to faculty including university authorities and department heads during internal university meetings at discussions at the Okayama University Future Sessions, which helped to further deepen discussion to realize the future image of Okayama University.



Promotion of Diversity & Inclusion (D&I)

Various initiatives are being undertaken to encourage a culture of diversity in which diverse faculty and staff can maximize their strengths



Promotion of the development of women researchers and appointment of female faculty to senior positions

To promote the development of women researchers and appointment of female faculty to senior positions, we established the Woman Tenure Track (WTT) System, a special post-up system for female faculty, and the Post-up Plus System. The Post-up Plus

System started in FY 2019 strongly supports mid to long term study abroad experiences for female researchers who are expected to be appointed to senior positions, and researchers who were sent abroad have made outstanding research achievements.

<https://en.okayama-u-diversity.jp/>

The Voice of a Researcher

Ushimado Marine Institute, Faculty of Science HAMADA Mayuko Assistant Professor



Group photo of laboratory members of Professor Thomas CG Bosch of Kiel University (Assistant Professor Hamada: 2nd from the left in the front row)

I am researching environmental adaptation in animals in aquatic environments such as oceans. I received assistance for the dispatching of women researchers and was given an opportunity by Kiel University (of Germany) that acts as a UNESCO Chair for the field of marine science and Roscoff Marine Station (in France) that is one of the top marine laboratories in Europe to conduct research related to the evolution of animal-algal symbiosis. Over about two months, I have been able to establish a new project by being able to better promote the joint-research I am currently involved in while also building a researcher network between many different countries. Using these accomplishments as a foothold, I would like to further promote future exchanges in international research at Okayama University.



The subject of research: Animals with symbiotic algae (Green hydra and acelomorph worm)

Creating a work environment where everyone can maximize their strengths

In April 2009, the Good Job Support Center was established based on the Okayama University Diversity Policy, and we welcome the 12th year in operation in 2020. At present, we have grown into workplace with 59 disabled persons and 19 support staff to ensure work can be smoothly conducted, and are undertaking jobs including office work and cleaning operations from multiple faculties in the Tsushima and Shikata areas.

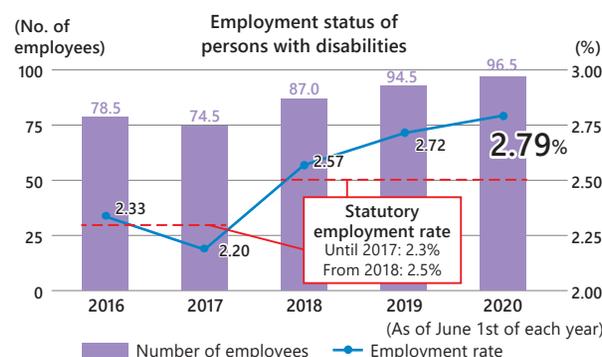
In 2019, we also participated in the Okayama Work Forum for People with Disabilities, which is Okayama Prefecture's first company information sessions for people with disabilities planned by companies providing employment to disabled persons in Okayama Prefecture, where we introduced the efforts and initiatives of the Good Job Support Center.



We will continue work towards realizing diversity and inclusion management using the total ability and specialization in cooperation with a diverse range of people to create a motivating workplace for each individual.

Creating an Inclusive Work Environment for Disabled Persons

The Good Job Support Center takes individual disabilities into consideration in order to create an environment where each employee can maximize their abilities. Support methods are considered based on a job proficiency assessment when entering the workplace to arrange support and create a safe work environment. These efforts at the Good Job Support Center not only achieve the university's statutory employment rate for persons with disabilities, but also show the way how to maximize the potentials of diverse faculty and staff.



Promotion of Financial Management Reforms and Campus Management



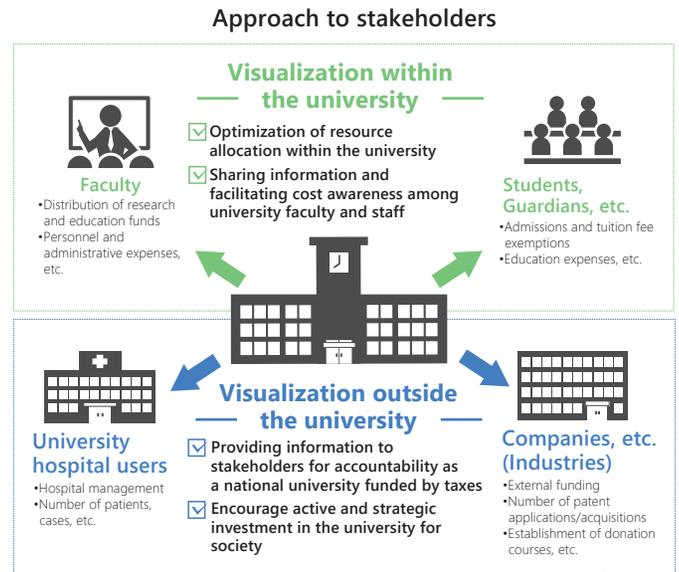
We are strengthening our financial base that supports SDG University Management and creating a sustainable campus.

Financial management reforms

While making contributions towards the achievement of the SDGs, we are creating self-sustainable university management in order to take increased yield measures by selling unemployed capital and searching for naming rights partners in addition to enhancing the Okayama University Academic Capital Foundation due to the increasing importance of discovering measures to secure management resources and to efficiently use limited resources.

In addition, we are promoting financial management reforms for budgeting and account management in order to focus on making university costs more visible so that people from both inside and outside the university can more easily understand the relationships between education and research costs and their results, and have started disclose segment information by academic division in our financial statements (P. 56).

Promoting financial management reforms establishes a virtuous cycle where we will strive to optimize the allocation of resources within the university and foster awareness in improving cost performance among our members while also matching with an inner branding viewpoint (fostering recognition of a common image inside the organization).



Ensuring safe and secure education and research environments

As a comprehensive university with a large, beautiful campus located within the city, the campus has been systematically developed from the perspectives of ensuring safety, supporting various types of education and research, internationalization, and contributing to local communities and society based on the Okayama University campus master plan.

Buildings such as the Junko Fukutake Terrace, Junko Fukutake Hall, and International Student Shared House have been made possible in part through donations and are in use by many people from both inside and outside the university.

In order to ensure safe and secure education and research environments, we have been focusing on making all of our buildings earthquake-resistant, and have almost completed this undertaking. Moving forward, we will continue strengthening buildings against the effects of aging, improving countermeasures (which currently stands at about 60%) as well as the functionality of facilities.

In order to improve the environment for the realization of Society 5.0 for SDGs and enhance space for joint research with those outside of the university, we will also secure a facility maintenance budget, which starts with obtaining various financial resources.

Building a sustainable campus

In FY 2018, we established the "Okayama University Infrastructure Life Extension Plan", which outlines the direction of medium-term initiatives for facility maintenance and management, aiming to maximize effects and maintain facilities within a limited budget. We will also utilize various financial resources to develop facilities for the improvement of student learning environments, creation of innovation, internationalization, and the adoption of barrier-free design. We will actively introduce methods and equipment effective in conserving energy and resources to reduce the burden on the global environment, building a sustainable campus for the achievement of the SDGs based on the Action Guidelines of Okayama University on the SDGs and the Okayama University campus master plan.

Efforts toward for the achievement of the SDGs.



Okayama University Campus Master Plan



Junko Fukutake Terrace



Resource allocation to realize SDG University Management

As part of University Management Reforms for Okayama University Vision 2.0, incentives were introduced based on the results of education and research activities stipulated in the policy for university-wide budget allocation, and measures are being steadily implemented to optimize the allocation of resources such as reflecting budget allocations for the evaluation results of organizational goals, and allocating resources according to new hiring situation of young researchers. In addition, we are integrating important information ranging from

financial and non-financial information related to Okayama University Vision 2.0, allocation of resources, accomplishments, and benefits to promote visualization. The key measures for SDG University Management that implements inter-disciplinary initiatives at our university are shown below. Through these systems, we improved our evidence-based decision making function while also deepening a shared understanding of measures and their results with people from both inside and outside the university.

Key Measures for SDG University Management (FY 2019)

Strategy/Initiative Classification	Resource Allocation (in million yen)	Main Activity Achievements/Success Examples
Strategy: Educational Reforms	467	
The PRIME program (the Top Global University Project), etc.	357	Number of certified advanced all-round achievers in 2017: 127 → 2018: 247 → 2019: 376 Conclusion of a Memorandum of Understanding (MoU) with United Nations Conference on Trade and Development (UNCTAD)
Realization of "Changing the Structure of Learning" by carrying out more practical education and creation of a foundational structure, etc.	110	Improvement in the introduction rate of active learning that promotes personal study habits in 2016: 21% → 2019: 49% Improvement in the rate of courses that utilize Information and Communications Technology (ICT) to utilize EdTech (Education + Technology): 2017: 5% → 2019: 20%
Strategy: Research Strengthening and Greater Industry Engagement	860	
International Research Center Formation Program to Accelerate Okayama University Reform (RECTOR Program)	49	Under the leadership of our president (the University's "Rector"), we invited prominent overseas researchers to train young researchers in Japan to lead research strengthening university reform by starting three projects for the University's strong fields of physics, life sciences and medicine.
Research strengthening support of priority research fields, etc.	480	Index improvements related to papers before and after support is provided by URA other personnel for next-generation research and development groups and next-generation research center creation groups in 15 priority research fields selected inside the University. Papers from our faculty in the top 10%: 1.6x increase, Q1 journal papers from our faculty: 1.4x increase
Program for Promoting the Enhancement of Research Universities and Greater Industry Engagement, etc.	331	In addition to supporting RECTOR and strengthening the priority research fields above, URA become core personnel such as in industry engagement to promote measures from research management to the strengthening of research management
Strategy: University Management Reforms	158	
Support of projects that play an important role in achieving a sustainable society, etc.	22	Global Conference on Teacher Education for ESD held at Okayama University and presented an Asian Pacific Framework to the World
Educational system reforms for a university that helps women thrive, etc.	42	Support of start-ups and returning to work and creation of an easy-to-work environment such as by allocating support staff during life events based on the Woman Tenure Track (WTT) System
Realizing regional revitalization and intentional collaboration, etc.	32	Establishment of an organization that supports continuous creation in Okayama Prefecture including Okayama Global Academic Capital Headquarters and the Okayama Round-Table Conference with participation of the industry, government, academia, finance and the media
Building a sustainable campus	62	Implementation of sustainable campus renovations through infrastructure renewal that has become a heavy environmental burden such as due to the effects of aging based on the efficient use of environmental surcharge.

Supplementary Information: Mainly applicable to budgets related to strengthen university-wide functions, including functional enhancement expenses and subsidies, etc. Does not include competitive funds such as for Grants-in-Aid for Scientific Research

Efforts to prevent the unauthorized use of public research funds have been published at the website below. (This content is only available in Japanese.)

https://www.okayama-u.ac.jp/tp/profile/fusei_kenkyuhi.html

Data Section

Concept

- To help the many people who support Okayama University understand the backgrounds, etc., of various activities conducted by the University, evidence data primarily consisting of financial information will be shown, with non-financial information being considered at the same time. This section consists of relative comparison and analysis by means of financial indices and briefings on financial statements, etc.
- The following financial indices serve as basic data for comprehensive recognition and analysis of the financial standing and management situation of national university corporations. Comparison of the indices of Okayama University with those of the other universities will help us recognize the tendency of our university. For the purpose of showing the characteristics of an organization, important viewpoints are what kinds of indices are to be picked up and which aspects are to be focused on.
- The main target of the following analysis is to clarify the Okayama University's relative position and future challenges through trend comparison of large-scale local national universities.

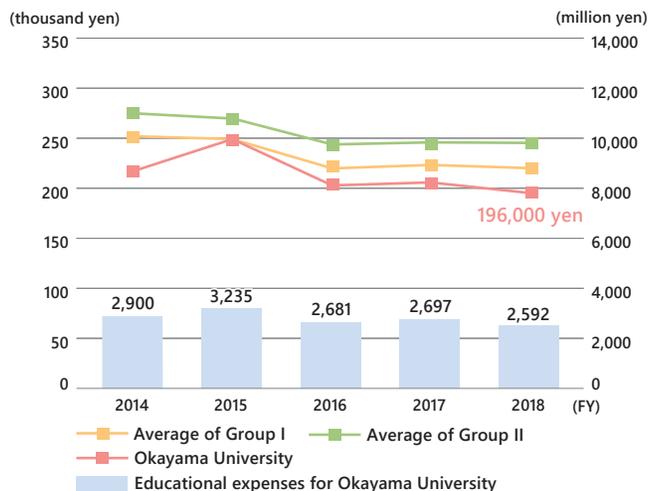
- Among financial indices, educational expenses per student, research expenses per faculty member and external funding ratios are picked up for comparison as indices respectively showing the scale of education activities, the scale of research activities, and of funds obtained through education and research activities.
- In this section, comparison with the average value is done by reference to published materials from 6 universities that were medical universities under the former system (Chiba University, Niigata University, Kanazawa University, Nagasaki University, Kumamoto University and Okayama University) classified as Group I, and 9 universities, including Group I universities in addition to 3 universities whose scale is comparable to them (University of Tsukuba, Kobe University and Hiroshima University), classified as Group II.
- As the period covered by the comparison, the last five-year period from FY 2014 to FY 2018 was chosen to show the transition. This period follows the designation by the government of the period of accelerating reforms to national universities.

Educational Expenses per Student

Do educational costs per student amount to approximately 200,000 yen per year?

Educational expenses per student are shown by "division of educational expenses by the number of students" as an index indicating the scale of education activities. Overview of the status of Group I universities, Group II universities, and Okayama University by reference to published financial statements indicates that educational expenses for students were almost unchanged (though slightly decreasing) as shown below, and that such expenses for Okayama University in FY 2018 were approximately 200,000 yen.

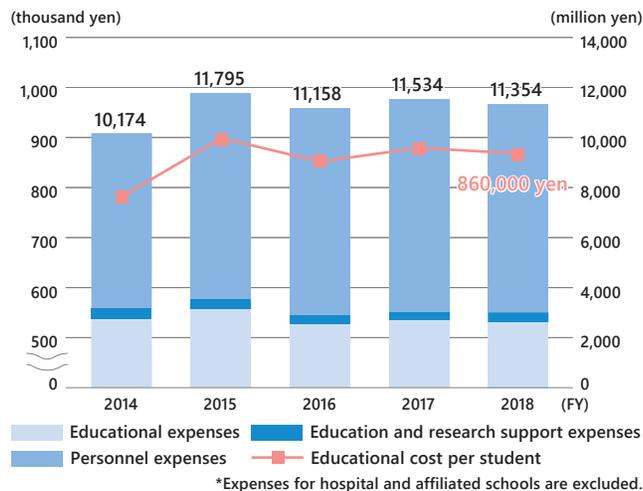
So, can university education can actually be provided at such an amount? It should be noted that the amount of educational expenses stated in financial statements only shows costs directly related to student's education, such as consumables, equipment expenses and utilities charges that are mainly related to education, and does not include faculty personnel expenses.



In fact, educational cost per student amounted to approximately 860,000 yen per year

For "visualization" of educational cost per student of Okayama University in a form closer to fact than that shown on the left, the result of recalculation done by deeming the total of "personnel expenses" for faculty members, etc., engaging in education and guidance and "education and research support expenses" such as library expenses that support self-learning multiplied by a certain standard ratio as cost of education, and adding such cost to the educational expenses indicated on the left is shown in the figure below.

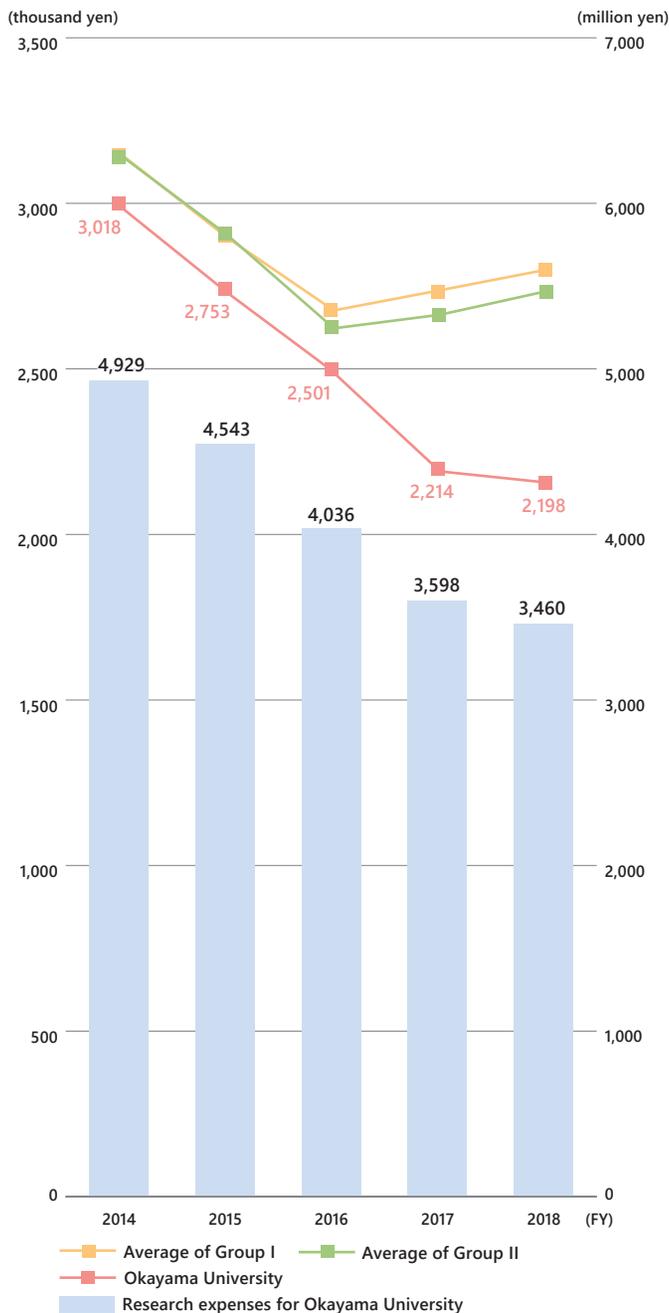
Educational cost per student amounted to approximately 860,000 yen per year. This fact shows that the University is fostering the next generation that will shoulder the future by spending an amount equivalent to approximately 1.6 times the annual tuition that is approximately 530,000 yen.



*Expenses for hospital and affiliated schools are excluded.

Research Expenses per faculty member

Research expenses per faculty member are shown by "division of research expenses by the number of faculty members" as an index indicating the scale of research activities. Research expenses consist of consumables and equipment expenses, utilities charges, depreciation expenses, travel and transportation expenses, etc., which are mainly related to research, and the cost of research instruments that support the foundation of research activities accounts for a large part of research expenses. Therefore, the amount of expenses tends to be high immediately after introduction or renewal of instruments. Compared with the other universities, Okayama University is seeing a noticeable tendency of gradual decrease in research expenses, which reflects inactive renewal of instruments, and faces the urgent issue of infrastructure development.

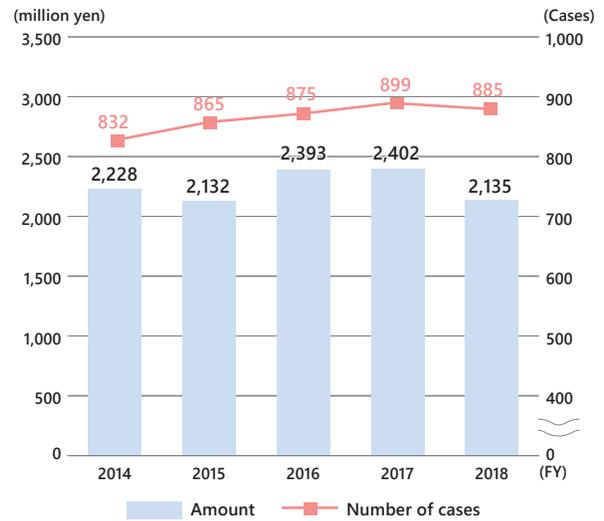


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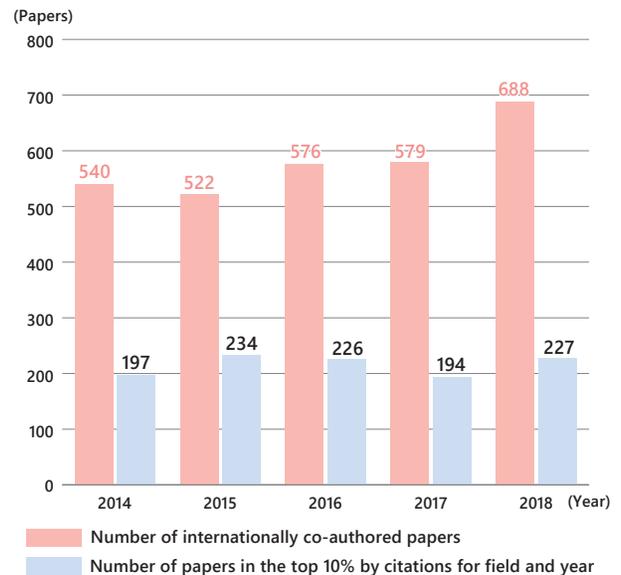
Relevant Data Indicating the Research Activities of Okayama University

Though Okayama University is in such a severe situation as stated on the left, the University is seeing a tendency of maintenance or increase in paper indices, etc., which indicate its research activities as it works for acquisition of grants-in-aid for scientific research, the largest-scale competitive funding system in Japan, and increase of the external funding ratio shown on the next page, and is making a shift to a system under which improvement of research achievements can be expected, including the building of a global research center and support in priority research fields.

Actually received amount of grants-in-aid for scientific research



Transition of the number of internationally co-authored papers and the number of papers in the top 10% by citations for field and year

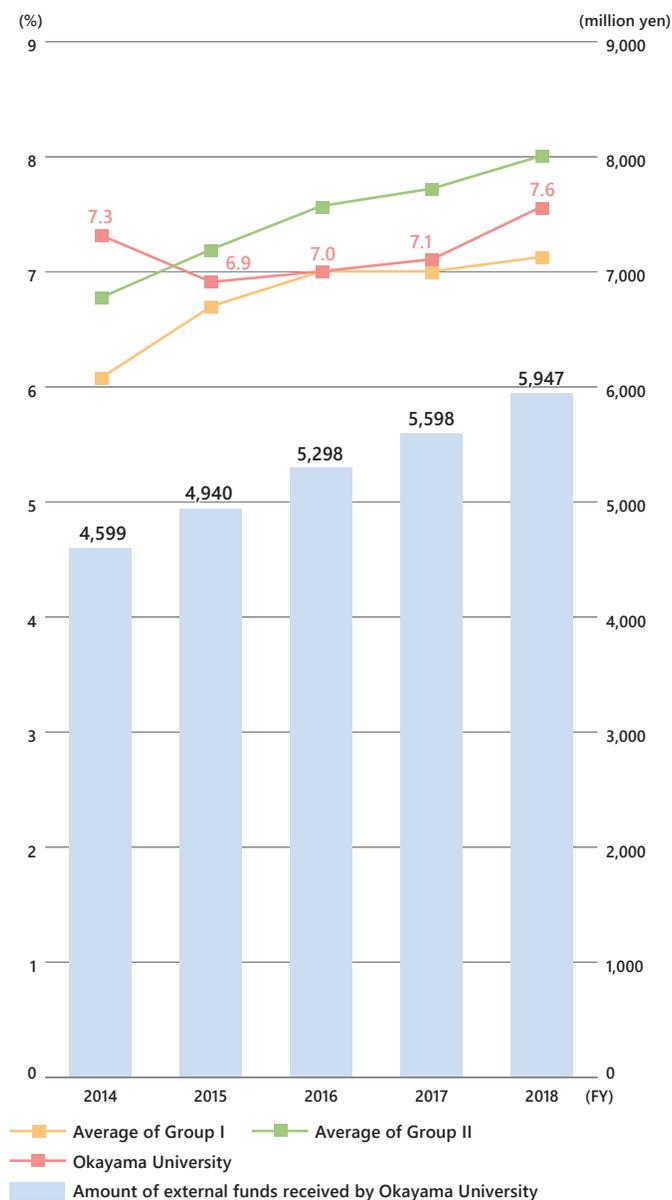


External Funding Ratio

External funding ratio, which is an index indicating the status of funding through education and research activities, is shown by the "division of (contracted research revenues plus contracted business revenues plus donation revenues) by ordinary revenues." The index indicates a ratio of funds obtained from private companies and other external parties to ordinary revenues.

In recent years, Okayama University has been working to obtain external funds, for example, by supporting researchers for acquisition of large-scale competitive research funding in priority research fields selected by the University and conducting matching activities through publication of the University's research to companies in the form of company visits, participation in various kinds of exhibitions, etc. Through such activities, the ratio has been gradually increasing since FY 2016.

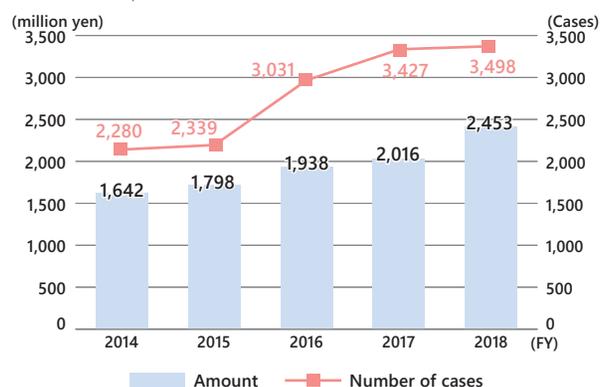
In addition to the above activities, the University is making various efforts for acquisition of various financial sources, including crowd-funding, calling for naming rights partners, obtaining sales fees via vending machines and lending of land as business sites.



POINT

Amount of donations actually received

Among external funds of Okayama University, transition of the amount and the number of cases of donations received was as shown below. Donations received were in the tendency of increase and, particularly in FY 2018, recorded a significant increase of approximately 20% from the previous fiscal year owing to a large donation to the Okayama University academic capital foundation.



Okayama University Academic Capital Foundation:

Gratitude for emergency Assistance in COVID-19 catastrophe and interim report

In response to our request for emergency assistance in connection with the spread of COVID-19, we received donations in the amount of approximately 39 million yen (as of June 30, 2020). We would like to express our gratitude for the warm assistance from many of you.



Using donations given to the Okayama University Academic Capital Foundation on this occasion, the University provided 225 students having financial difficulty in their daily lives with financial support in the amount of 30,000 yen per student. At the same time, the University financially supported students by providing an average of 400 free boxed lunches per day for ten days through the activities of "We aren't scared of corona! Win-win student project to support Okayama University students and local restaurants" which was planned and executed by the students. In addition, the University has applied donations to support of Okayama University Hospital by purchase of medical supplies and support of COVID-19 research activities. The influence of this infectious disease is assumed to remain for the long term. We hope for your continued support.

The University has established the "Okayama University Academic Capital Foundation" with the aims of creating innovation, building academic capital and promoting globalization by further promotion of education activities, international exchange, and social and regional contributions. For details of preferential tax treatment under the Income Tax Act, etc., please see our website. (This content is only available in Japanese.)

 Okayama University Academic Capital Foundation
<https://www.okayama-u.ac.jp/user/kouhou/kikin/>

Accounting System of a National University Corporation

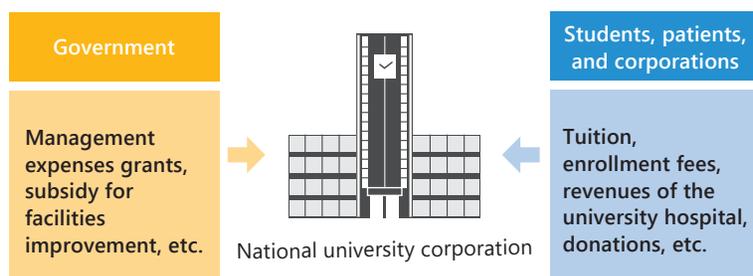
While the accounting system of national university corporation is based on standard business accounting practices, it follows unique procedures that are not followed in corporate accounting due to the features of a national university corporation.

<Main Features of a National University Corporation>

Category	Purpose of business	Earning of profits
National university corporation	Providing education and conducting research of a public nature	Not intended
Private company	Maximization of return to stakeholders and corporate value	Intended

- Efforts primary consist of education and research.
- The corporation is public in nature and is not intended to earn profits.
- It is not expected to be financially independent and is supported financially by the national government.

<Accounting by Revenue Source>



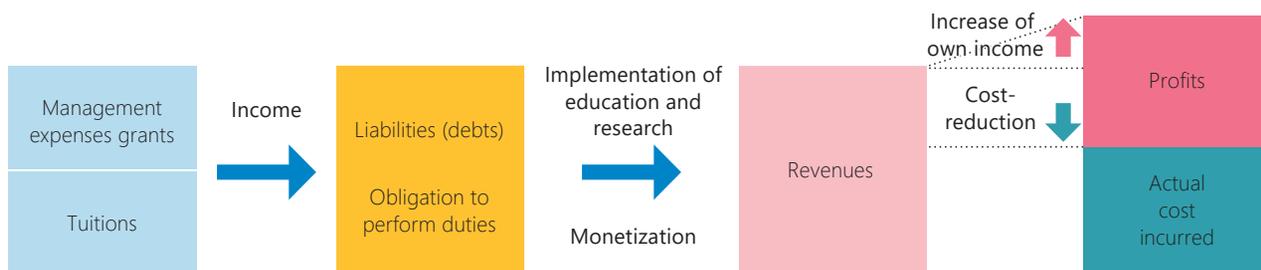
The revenue of a national university corporation is made up of management expenses grants from the government, payment made by students such as tuition, and revenue of the university hospital. A national university corporation performs accounting based on the nature of these revenue sources (or financial sources).

<Accounting Based on Profit-loss Balance>

As a national university corporation is not intended to earn profits, there is a mechanism in place where profits and losses are offset as long as it continues to perform its duties in education and research, with funds from management expenses grants, tuition and other sources.

When we receive management expenses grants, tuition, or other funding, we record them as liabilities (debts) assuming that we undertake our obligations to perform our duties. Subsequently, as we perform our duties, we consider such obligations to be fulfilled and thus reclassify subsidies and tuition from liabilities to revenue.

We generate profit when we successfully curb expenses through management efforts such as increasing our own revenue and cutting costs. From our profits, we can use what is approved by the Minister of Education, Culture, Sports, Science and Technology for the next fiscal year and onward.



Financial statements (balance sheets, income statements, statements of cash flows, documents concerning appropriation of profits or disposition of losses, statements of national university corporation business operation costs, supplementary schedules) from Okayama University are posted on the website. (This content is only available in Japanese.)

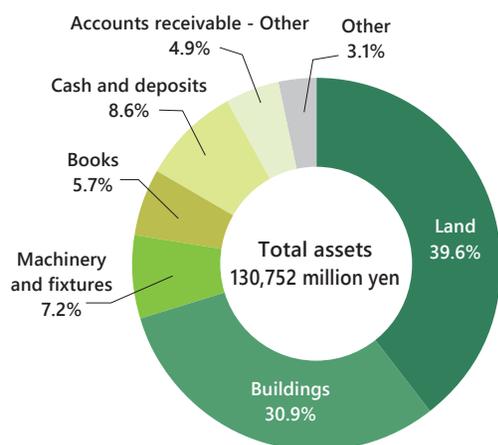
<https://www.okayama-u.ac.jp/tp/profile/zaimusyohyou.html>

Overview of Balance Sheet

- Our assets decreased by 0.297 billion yen compared to the previous fiscal year to 130.752 billion yen. This was mainly due to a decrease in the value of non-current assets such as buildings as a result of depreciation. Meanwhile, machinery and fixtures increased as a result of acquisition of a hospital information system (lease asset).
- Liabilities increased by 1.444 billion yen compared to the previous fiscal year to 53.605 billion yen. This was mainly due to an increase in long-term accounts payable as a result of acquisition of a hospital information system (lease asset). Meanwhile, loans payable decreased as a result of redemption.
- Net assets decreased by 1.741 billion yen compared to the previous fiscal year to 77.146 billion yen. This was mainly due to a decline in capital surplus as a result of depreciation of buildings inherited from the government and buildings acquired with facilities expenses. A decline of 34 million yen in capital stock was due to the sale of land.

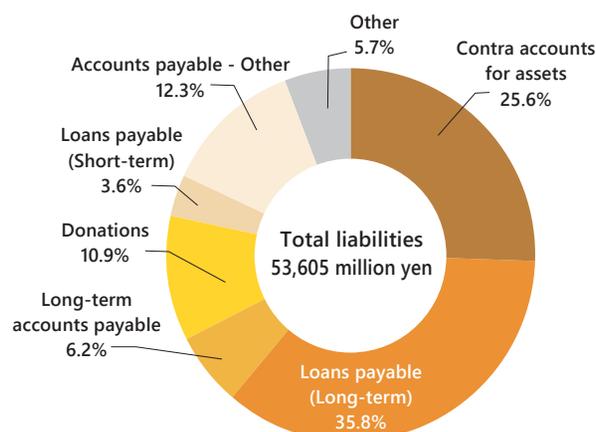
Balance Sheet

Assets	FY 2017	FY 2018	FY 2019	Change from the previous fiscal year
Permanent assets	118,708	113,558	112,793	△ 765
Land	51,963	51,904	51,835	△ 69
Buildings	47,434	43,586	40,445	△ 3,140
Machinery and fixtures	9,307	8,097	9,404	1,306
Books	7,594	7,513	7,461	△ 51
Construction in progress	93	143	903	760
Other property, plant and equipment	156	154	153	△ 1
Intangible fixed assets	520	420	363	△ 57
Investments and other assets	1,637	1,737	2,224	487
Current assets	17,753	17,491	17,959	468
Cash and deposits	11,130	10,739	11,179	439
Accounts receivable - Other	6,342	6,429	6,434	5
Other	280	322	345	22
Total assets	136,461	131,049	130,752	△ 297



(in million yen, rounded down to the nearest million yen)

Liabilities	FY 2017	FY 2018	FY 2019	Change from the previous fiscal year
Fixed liabilities	39,163	36,036	36,788	751
Contra accounts for assets	13,988	13,273	13,699	426
Loans payable (Long-term)	23,123	21,137	19,204	△ 1,933
Long-term accounts payable	1,611	1,148	3,298	2,149
Other	440	477	586	109
Current liabilities	16,662	16,123	16,816	692
Management expenses grants	63	148	19	△ 129
Donations	4,886	5,673	5,824	150
Loans payable (Short-term)	2,065	1,986	1,933	△ 52
Accounts payable - Other	7,274	5,742	6,584	842
Other	2,372	2,572	2,454	△ 118
Total liabilities	55,825	52,160	53,605	1,444
Net Assets	FY 2017	FY 2018	FY 2019	Change from the previous fiscal year
Capital stock	69,804	69,798	69,764	△ 34
Capital surplus	4,473	2,870	1,213	△ 1,656
Retained earnings	6,357	6,219	6,168	△ 51
Total net assets	80,636	78,888	77,146	△ 1,741
Total liabilities and net assets	136,461	131,049	130,752	△ 297



Overview of Income Statement

- Ordinary expenses increased by 1.356 billion yen compared to the previous fiscal year to 68.322 billion yen. This was mainly due to an increase in medical service expenses as a result of increased use of expensive medical products and increase in personnel expenses as a result of increase in retirement benefits.
- Ordinary revenues increased by 1.355 billion yen compared to the previous fiscal year to 68.534 billion yen. This was mainly due to an increase in university hospital revenues as a result of the increase in revenues attributable to increased use of expensive medical products, and an increase in contracted research revenues as the result of an increase in the number of cases of contracted research.

Income Statement

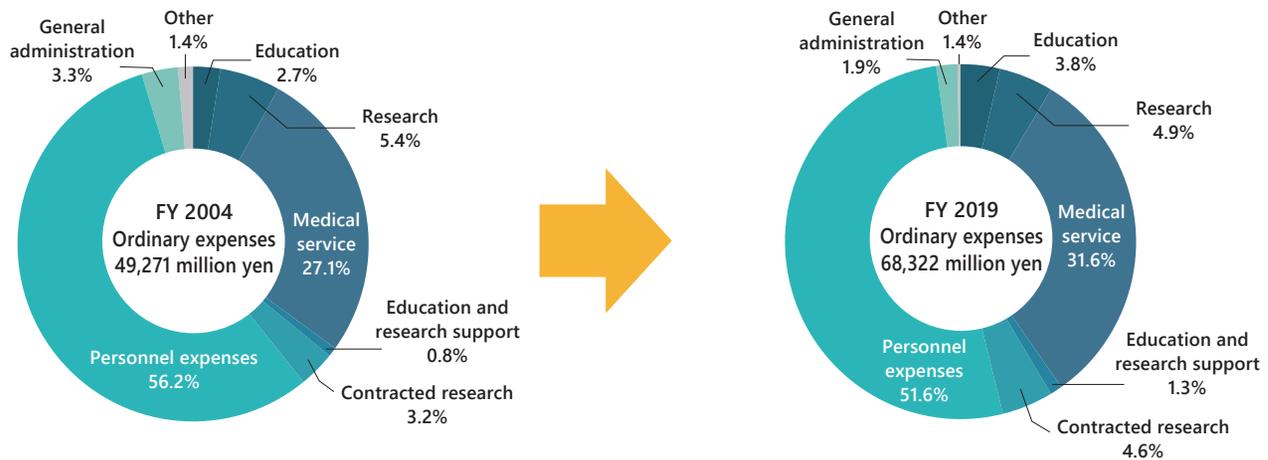
Expenses	FY 2017	FY 2018	FY 2019	Change from the previous fiscal year
Education	2,696	2,592	2,571	△ 21
Research	3,598	3,460	3,362	△ 98
Medical service	21,244	20,648	21,600	952
Education and research support	776	867	898	31
Contracted research	2,716	2,937	3,148	210
Personnel expenses	34,926	34,960	35,272	311
General administration	1,424	1,329	1,299	△ 30
Other	215	170	170	0
Total ordinary expenses	67,598	66,966	68,322	1,356
Extraordinary losses	48	165	190	25
Gross profit	827	223	223	0

(in million yen, rounded down to the nearest million yen)

Revenues	FY 2017	FY 2018	FY 2019	Change from the previous fiscal year
Management expenses grants	18,671	18,022	18,156	134
Tuition, admission, and examination fees	7,713	7,638	7,601	△ 37
University hospital	32,707	32,572	33,585	1,013
Contracted research	3,288	3,400	3,726	325
Donations	1,591	1,727	1,845	117
Other	4,331	3,816	3,618	△ 197
Total ordinary revenues	68,304	67,178	68,534	1,355
Nonrecurring income	19	126	156	29
Reversal of reserve for special purpose	150	50	46	△ 4

<Transition of Ordinary Expenses>

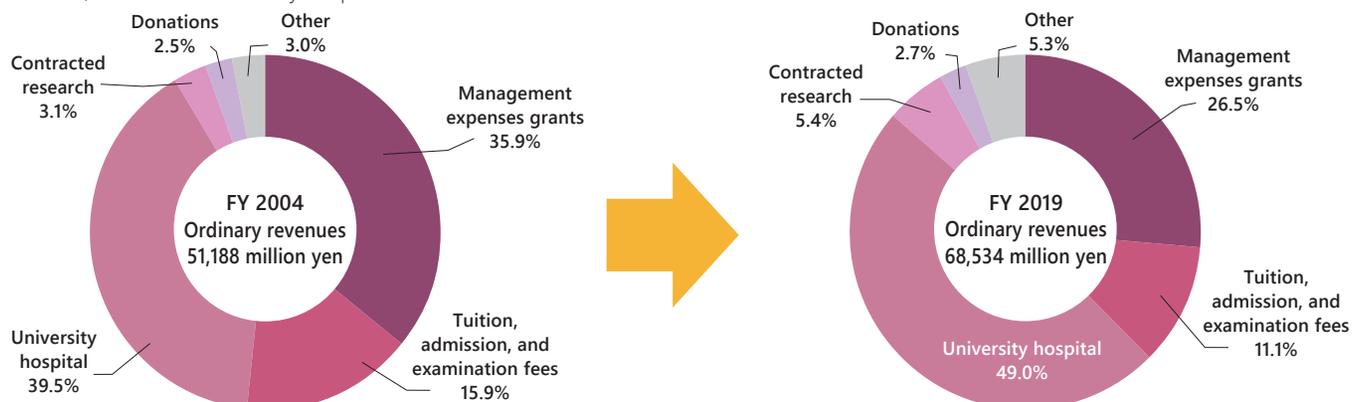
The ratio of personnel expenses to ordinary expenses decreased from FY 2004 (i.e., first year following conversion to a national university corporation).



<Transition of Ordinary Revenues>

The ratio of subsidies for management expenses grants to ordinary revenues decreased from FY 2004 (i.e., first year following conversion to a national university corporation).

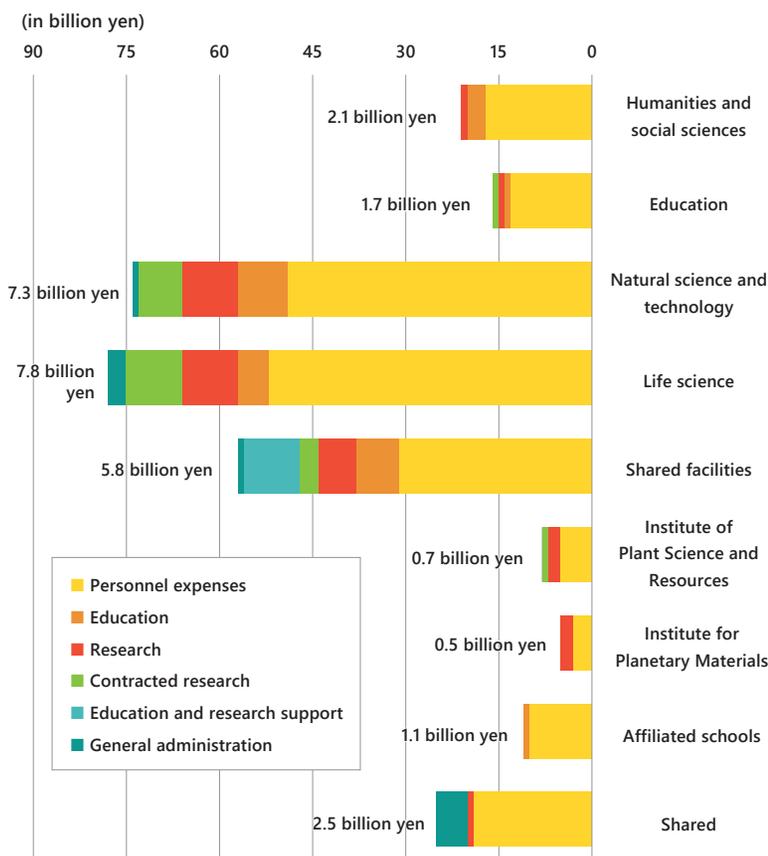
Meanwhile, the ratio of university hospital revenues and of contracted research revenues increased.



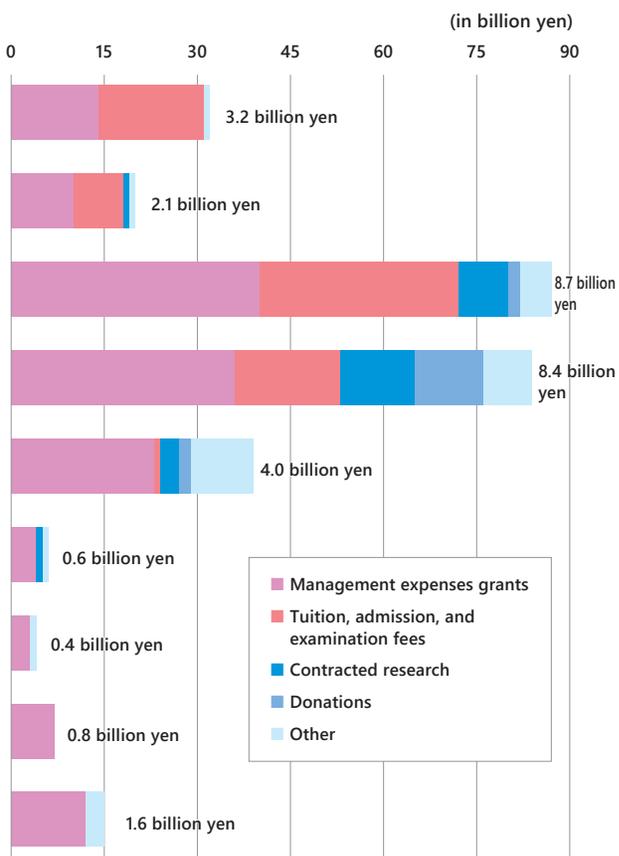
Disclosure of Segment Information

Okayama University started to disclose segment information by academic division in its financial statements (supplementary schedule) for the purpose of disclosing detailed financial information. We are thus able to provide information on the scale of each academic division and differences in the financial structure.

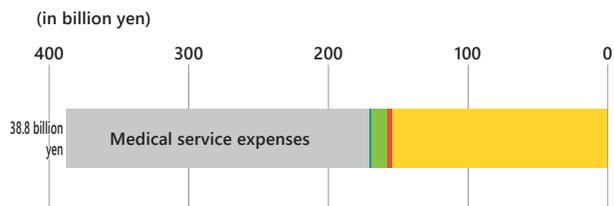
[Ordinary expenses]



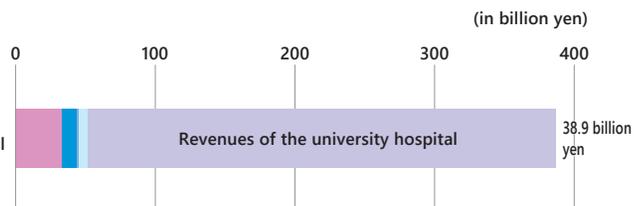
[Ordinary revenues]



[Ordinary expenses of university hospital]



[Ordinary revenues of university hospital]



[Major organizations of each segment]

- Humanities and social sciences : Faculty of Letters, Faculty of Law, Faculty of Economics, Graduate School of Humanities and Social Sciences, School of Law
- Education : Faculty of Education (excluding affiliated schools), Graduate School of Education
- Natural science and technology : Faculty of Science, Faculty of Engineering, Faculty of Environmental Science and Technology, Faculty of Agriculture, Graduate School of Natural Science and Technology, Graduate School of Environmental and Life Science, Graduate School of Interdisciplinary Science and Engineering in Health Systems
- Life science : Medical School, Dental School, Faculty of Pharmaceutical Sciences, Graduate School of Medicine, Dentistry and Pharmaceutical Sciences, Graduate School of Health Sciences
- Shared facilities : Research Institute for Interdisciplinary Science, University-wide Centers, University Library, Organization, Academic and Student Affairs Department and International Affairs Department of the head office

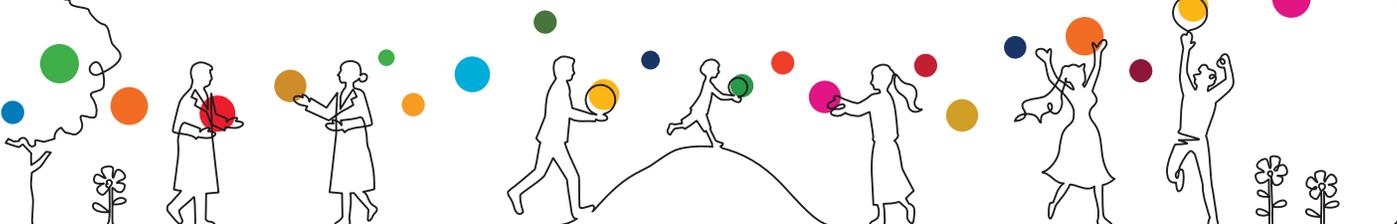
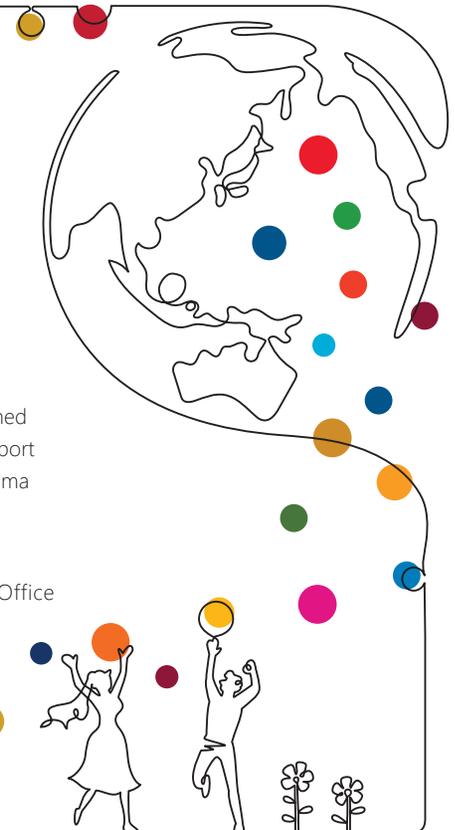
Toward Greater Sharing, Empathy and Collaboration

As we pursue a new co-creation paradigm, it is important for everyone to know more about Okayama University as it stands at present. To this end, we began publishing this integrated report. This year represents the second year of the report's publishing, and continuing on from last year we hope to communicate, in as thorough a manner as possible, our SDG University Management approach which is carried out by the entire University together. Doing so enables us to convey our vision for our future selves as well as the strategies we adopt to achieve this and our results thus far through a single, unified story.

Additionally, in this year's report we have included a special section on one of our current primary efforts: graduate school reform.

While creating this report, we referred to the International Integrated Reporting Framework established by the International Integrated Reporting Council (IIRC) and strove to achieve the best integrated report possible for Okayama University. Through this report, we hope to promote greater interest in Okayama University among readers everywhere. In order to help us make improvements in future editions, we encourage you to contact us with any comments and suggestions you may have.

Okayama University Institutional Research and Effectiveness Office



■SDGs

Sustainable Development Goals. Adopted in 2015 by the United Nations, these future-oriented, globally shared goals were created with the aim of realizing a sustainable future both for the natural environment and human society, leaving no one behind. In order to facilitate the achievement of all 17 SDGs by 2030, these larger goals are divided into 169 specific targets.



■Society 5.0

Society 5.0 is the fifth and latest "version" of our society, preceded by a hunting and gathering society, agrarian society, industrial society and information-centered society. Here in Japan, we make full use of digital technology advances and various innovations in pursuit of a human-centric Society 5.0 where each and every person can lead a comfortable, invigorating, high-quality life.



Okayama University supports the Sustainable Development Goals

Okayama University SDGs website:
"Okayama UNIVERSITY x SDGs"

<https://sdgs.okayama-u.ac.jp/en/>



Okayama University Integrated Report 2020 Pay it Forward

Published, February 2021

Period Covered in Report: April 1, 2019 to March 31, 2020
(with some additional dates covered outside this period)

Contact Point Regarding the Okayama University Integrated Report:
University Reform Division, General Affairs and Planning Department
(kaikaku@adm.okayama-u.ac.jp)



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