

# University of Tsukuba Integrated Report 2022

—To create GLOBAL TRUST—



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## To Our Stakeholders

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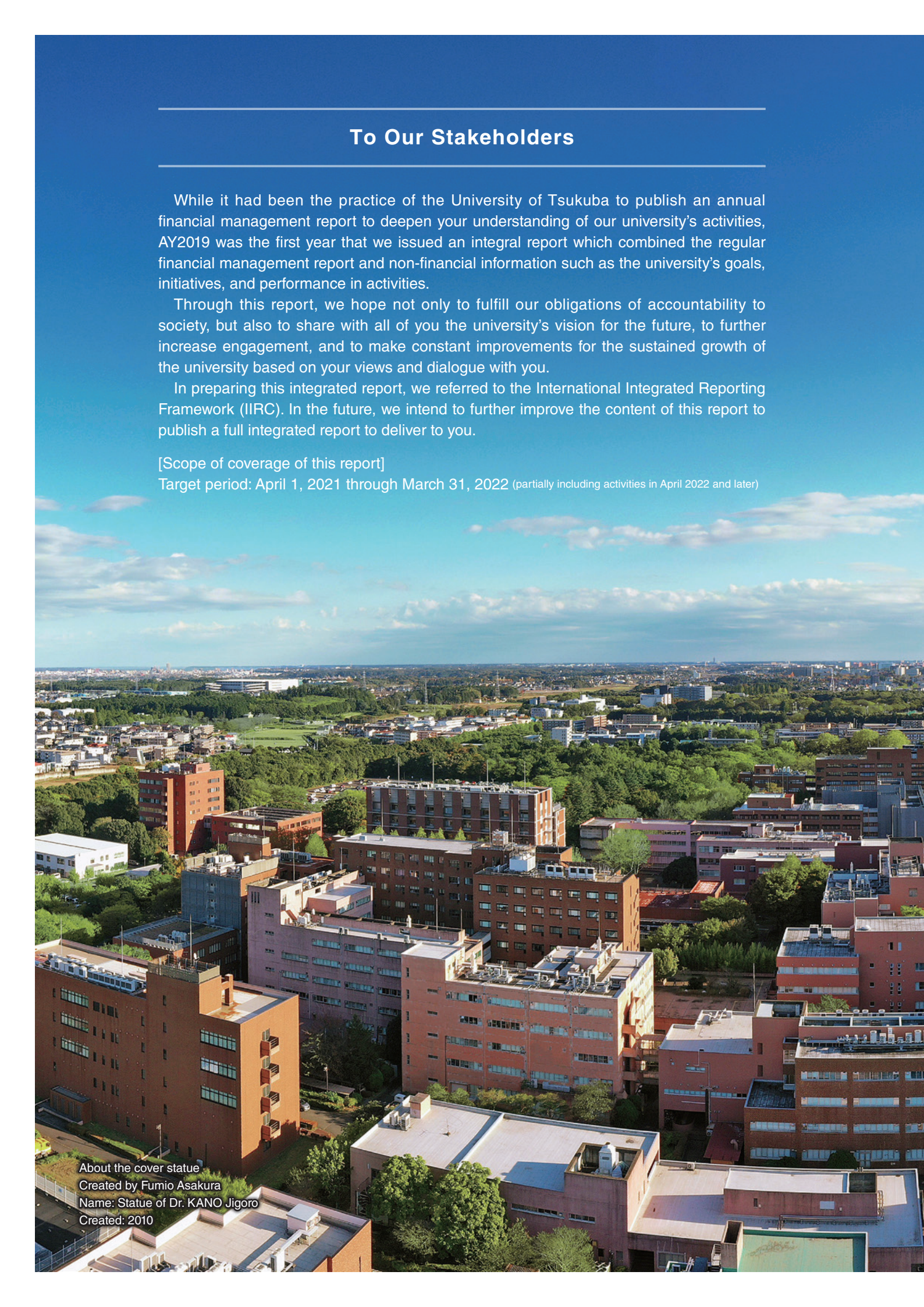
While it had been the practice of the University of Tsukuba to publish an annual financial management report to deepen your understanding of our university's activities, AY2019 was the first year that we issued an integral report which combined the regular financial management report and non-financial information such as the university's goals, initiatives, and performance in activities.

Through this report, we hope not only to fulfill our obligations of accountability to society, but also to share with all of you the university's vision for the future, to further increase engagement, and to make constant improvements for the sustained growth of the university based on your views and dialogue with you.

In preparing this integrated report, we referred to the International Integrated Reporting Framework (IIRC). In the future, we intend to further improve the content of this report to publish a full integrated report to deliver to you.

[Scope of coverage of this report]

Target period: April 1, 2021 through March 31, 2022 (partially including activities in April 2022 and later)



About the cover statue  
Created by Fumio Asakura  
Name: Statue of Dr. KANO Jigoro  
Created: 2010

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\* When reading this report, please note that figures of less than one unit in tables and diagrams have been rounded and may not coincide with the total.

## Founding Philosophy

The University of Tsukuba aims to establish free exchanges and close relationships in both basic and applied sciences with educational and research organizations and academic communities in Japan and overseas. While developing these relationships, we intend to pursue education and research to cultivate men and women with creative intelligence and rich human qualities. The University of Tsukuba endeavors to contribute to the progress of science and culture. Formerly, Japanese universities tended to remain cloistered in their narrow, specialized fields, creating polarization, stagnation in education and research and alienation from their communities. The University of Tsukuba has decided to function as a university which is open to all within and outside of Japan. Toward this end, the university has made it its goal to develop an organization better suiting the functions and administration with a new concept of education and research highly international in character, rich in diversity and flexibility and capable of dealing sensitively with the changes occurring in contemporary society. To realize this, it has vested in its staff and administrative authorities the powers necessary to carry out these responsibilities.



# About the University

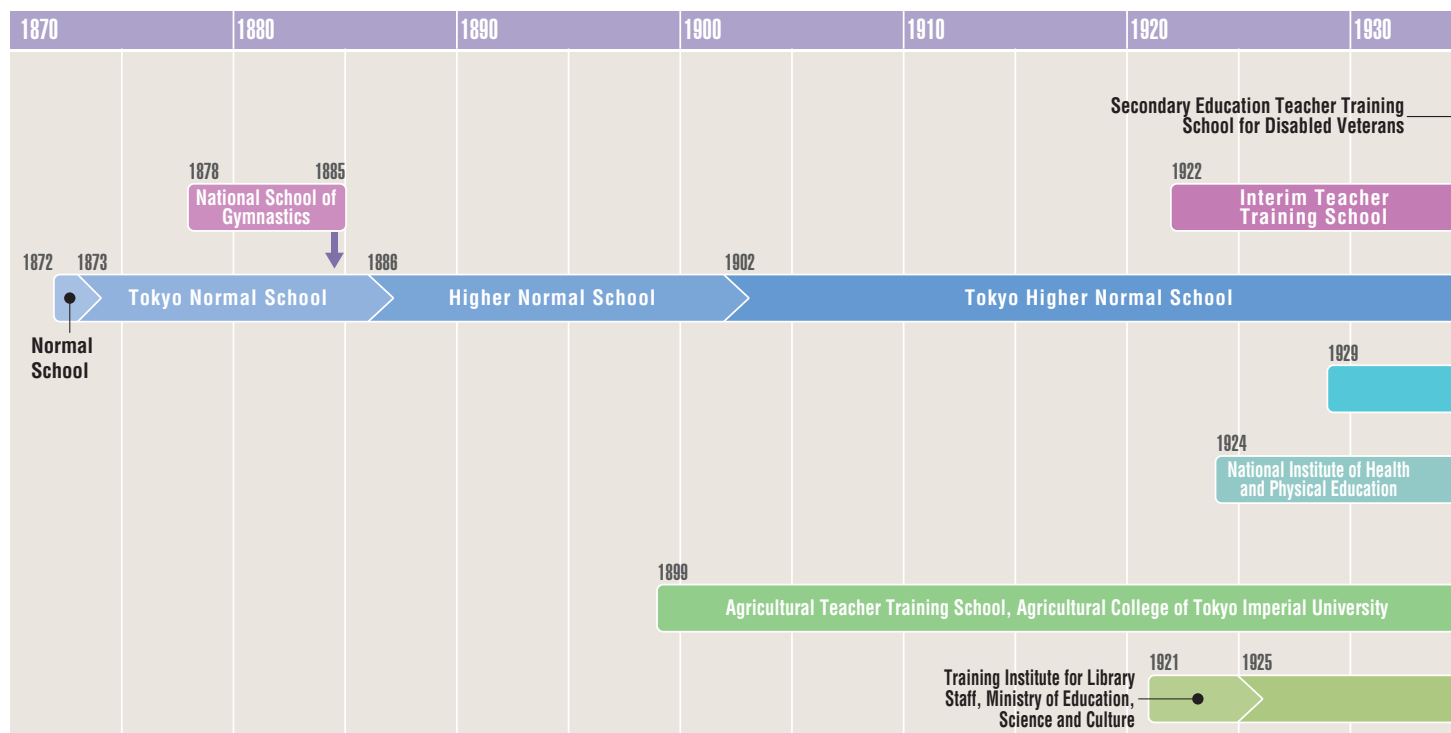


## History

The University of Tsukuba was launched in October 1973, due to the relocation of its antecedent, the Tokyo University of Education, to the Tsukuba area. As the new concept comprehensive university in Japan to be established under a country-wide university reform plan, the University has featured openness with new systems for education

and research under a new university administration. The university reform plays a major role in our continuing effort for improvement. We are striving to create a unique, active, and internationally competitive university with superlative education and research facilities.

### History from the University's Founding



1872



Normal School is founded in Tokyo

1886



Normal School is renamed Tokyo Normal School

1929



Tokyo University of Literature and Science is established

## Nobel Prize Recipients

### ● Nobel Prize in Physics 1965



Dr. TOMONAGA Sin-Itiro

Former President and Professor Emeritus of the Tokyo University of Education

Quantum electrodynamics, particularly development of super-many-time theory and renormalization theory

Courtesy of the Tomonaga Memorial Room

### ● Nobel Prize in Physics 1973



Dr. ESAKI Leo

Former President and Professor Emeritus of the University of Tsukuba

An experimental discovery concerning tunneling in semiconductors and superconductors

### ● Nobel Prize in Chemistry 2000



Dr. SHIRAKAWA Hideki

Professor Emeritus of the University of Tsukuba

Discovery and development of conductive polymers

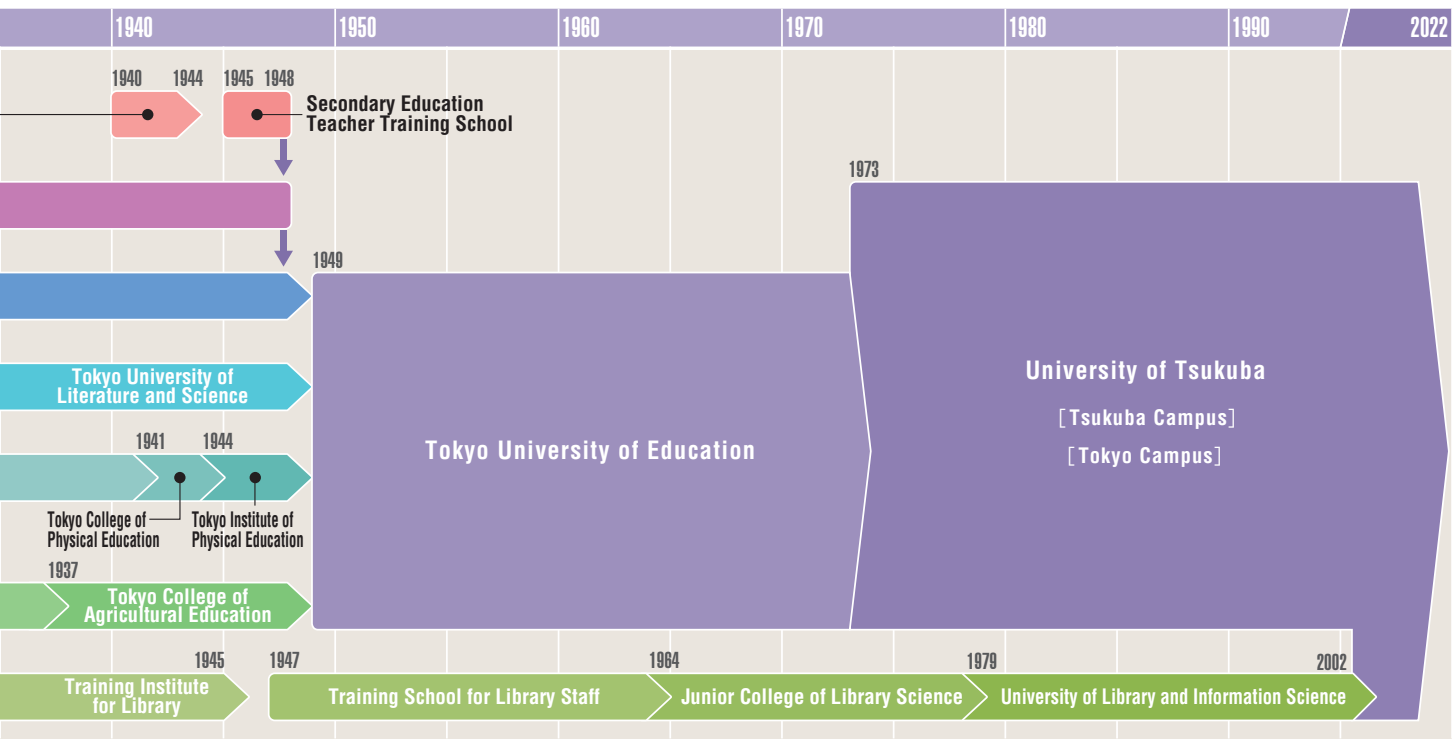
In October 2023, we will celebrate the 151st year since our founding and the 50th anniversary of the establishment of the University of Tsukuba.



創基 151年  
筑波大学 50周年記念  
50TH ANNIVERSARY OF  
UNIVERSITY OF TSUKUBA



DESIGN THE FUTURE, TOGETHER.

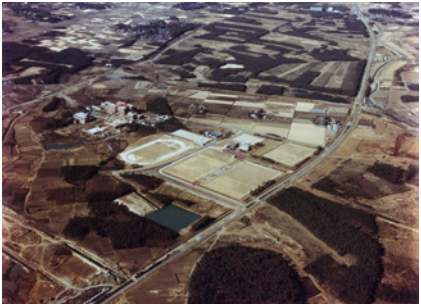


1949



Tokyo University of Education is established under the National School Establishment Act (Act No. 150 of 1949)

1973



University of Tsukuba is established under the Law for the Partial Amendment of the National School Establishment Act (Act No. 103 of 1973)

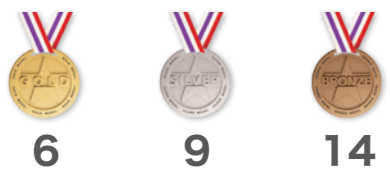
2004



University of Tsukuba is established as a national university corporation under the National University Corporation Act (Act No. 112 of 2003)

Total No. of Olympic and Paralympic Medals

● Olympics\*




● Paralympics\*



\* Number of medals that have been won by students, graduates (former students who have completed courses), faculty, or staff of the University of Tsukuba or schools affiliated with the university in 1973 and later

## Education & Research Organizations (as of May 1, 2022)

Education Organizations	<b>Graduate Schools</b> <ul style="list-style-type: none"> <li>● Graduate School of Business Sciences, Humanities and Social Sciences                     <ul style="list-style-type: none"> <li>Degree Programs in Humanities and Social Sciences</li> <li>Degree Programs in Business Sciences</li> </ul> </li> <li>● Graduate School of Science and Technology                     <ul style="list-style-type: none"> <li>Degree Programs in Pure and Applied Sciences</li> <li>Degree Programs in Systems and Information Engineering</li> <li>Degree Programs in Life and Earth Sciences</li> </ul> </li> <li>● Graduate School of Comprehensive Human Sciences                     <ul style="list-style-type: none"> <li>Degree Programs in Comprehensive Human Sciences</li> </ul> </li> </ul>	<b>Undergraduate Schools (9 schools)</b> <ul style="list-style-type: none"> <li>● School of Humanities and Culture</li> <li>● School of Social and International Studies</li> <li>● School of Human Sciences</li> <li>● School of Life and Environmental Sciences</li> <li>● School of Science and Engineering</li> <li>● School of Informatics</li> <li>● School of Medicine and Health Sciences</li> <li>● School of Physical Education, Health and Sport Sciences</li> <li>● School of Art and Design</li> </ul>	<b>Affiliated Schools (11 schools)</b> <ul style="list-style-type: none"> <li>● Elementary School, University of Tsukuba</li> <li>● Junior High School at Otsuka, University of Tsukuba</li> <li>● Junior High School at Komaba, University of Tsukuba</li> <li>● Senior High School at Otsuka, University of Tsukuba</li> <li>● Senior High School at Komaba, University of Tsukuba</li> <li>● Senior High School at Sakado, University of Tsukuba</li> <li>● Special Needs Education School for the Visually Impaired, University of Tsukuba</li> <li>● Special Needs Education School for the Deaf, University of Tsukuba</li> <li>● Special Needs Education School for the Mentally Challenged, University of Tsukuba</li> <li>● Special Needs Education School for the Physically Challenged, University of Tsukuba</li> <li>● Special Needs Education School for Children with Autism, University of Tsukuba</li> </ul>	<b>Education and Student Support Centers (4 organizations)</b> <ul style="list-style-type: none"> <li>● Center for Education of Global Communication</li> <li>● Sports and Physical Education Center</li> <li>● Admission Center</li> <li>● Health Center</li> </ul>
	<b>School of Integrative and Global Majors</b>	<b>School of Comprehensive Studies</b>		
Research Organizations	<b>Faculties (Faculty Organizations)</b> <ul style="list-style-type: none"> <li>● Faculty of Humanities and Social Sciences</li> <li>● Faculty of Business Sciences</li> <li>● Faculty of Pure and Applied Sciences</li> <li>● Faculty of Engineering, Information and Systems</li> <li>● Faculty of Life and Environmental Sciences</li> <li>● Faculty of Human Sciences</li> <li>● Faculty of Health and Sport Sciences</li> <li>● Faculty of Art and Design</li> <li>● Faculty of Medicine</li> <li>● Faculty of Library, Information and Media Science</li> <li>● Faculty of Transdisciplinary Research</li> </ul>	<b>Advanced Research Centers (18 organizations in total)</b> <ul style="list-style-type: none"> <li>R1 (World-class Research Center) (3 organizations)</li> <li>R2 (National-class Research Center) (10 organizations)</li> <li>R3 (Priority Training Research Center) (5 organizations)</li> </ul> <p>→ See page 21</p>	<b>Research &amp; Development Center (13 organizations in total)</b> <p>→ See page 29</p> 	
		<b>Research Support Centers</b> <ul style="list-style-type: none"> <li>● Research Facility Center for Science and Technology</li> <li>● Academic Computing Communications Center</li> </ul>	<b>Other Facilities</b> <ul style="list-style-type: none"> <li>● Innovation Medical Research Institute</li> <li>● Tsukuba Clinical Research &amp; Development Organization (T-CReDO)</li> <li>● Open Innovation Strategy Organization</li> <li>● Athletic Department</li> </ul>	
Affiliated Facilities	<b>University of Tsukuba Library</b>	<b>University of Tsukuba Hospital</b>		

## Basic Information (as of May 1, 2022)

Students	Total No. of students (7th)	Undergraduate students (12th)	Graduate students (6th)	Affiliated school students, etc.
	<b>16,507</b> Including 6,134 female students (Percentage of women: 37.2%)	<b>9,631</b> Including 3,717 female students (Percentage of women: 38.6%)	<b>6,876</b> Including 2,417 female students (Percentage of women: 35.2%)	<b>4,053</b>
Staff	Total number of teachers and staff	Directors	Teachers	Staff
	<b>5,328</b> Including 2,596 female faculty members (Percentage of women: 48.7%)	<b>10</b> Including 2 female directors (Percentage of women: 20%)	<b>2,368</b> Including 602 female faculty members (Percentage of women: 25.4%)	<b>2,950</b> Including 1,992 female faculty members (Percentage of women: 67.5%)
International Exchanges	Foreign teachers and staff	Ratio of international students	International exchange agreements	
	<b>168</b>	<b>11% (117 countries and regions)</b>	<b>381 (69 countries and regions)</b>	
Area	Land area		Building area	
	<b>12,666,444 m<sup>2</sup></b> (excluding affiliated schools)		<b>991,330 m<sup>2</sup></b> (excluding staff housing)	

The Tsukuba Campus is the second largest single campus in Japan. 258 hectares (about 55 times the area of Tokyo Dome)

\* The above figures in parentheses indicate the national university corporation ranking of the University of Tsukuba as of May 1, 2022.

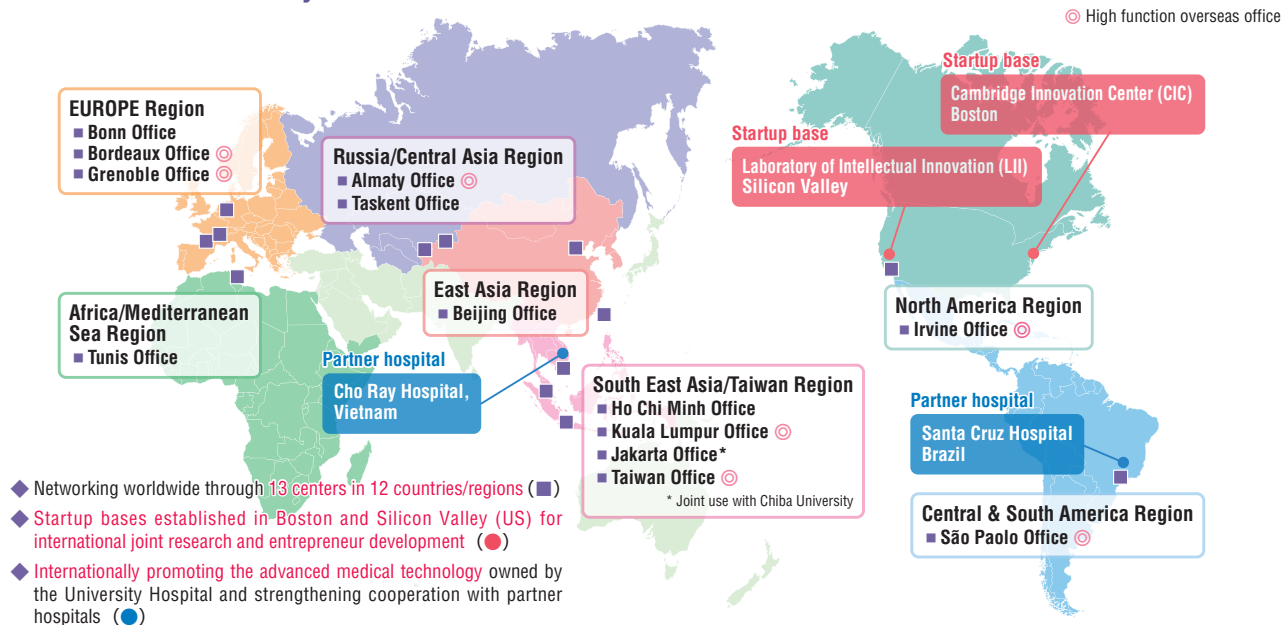


## Overseas Offices at the University

Under the university's basic policy on internationalization strategy and regional expansion, we have established centers in 12 countries and regions. The purpose is to engage in activities to support international cooperation in promoting

education and research activities of the university and also to provide support when an education or research institution of those countries or regions engages in education and research activities in Japan in cooperation with the university.

### University of Tsukuba Overseas Offices (13 Centers in 12 Countries/Regions)



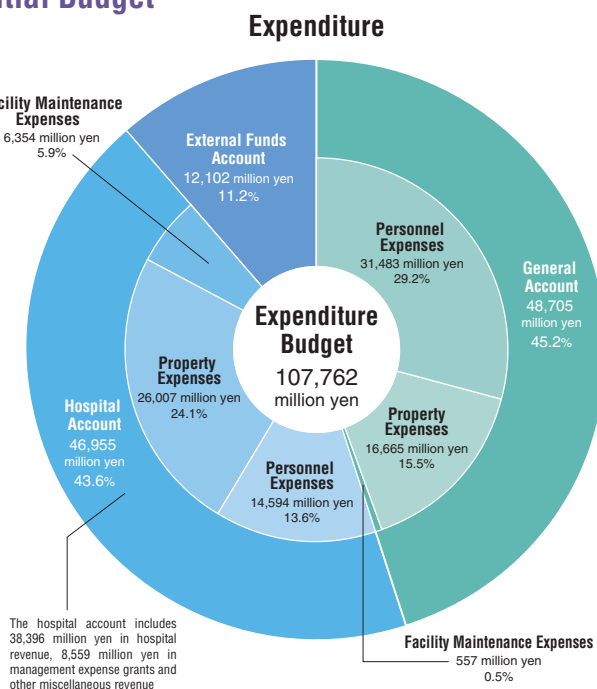
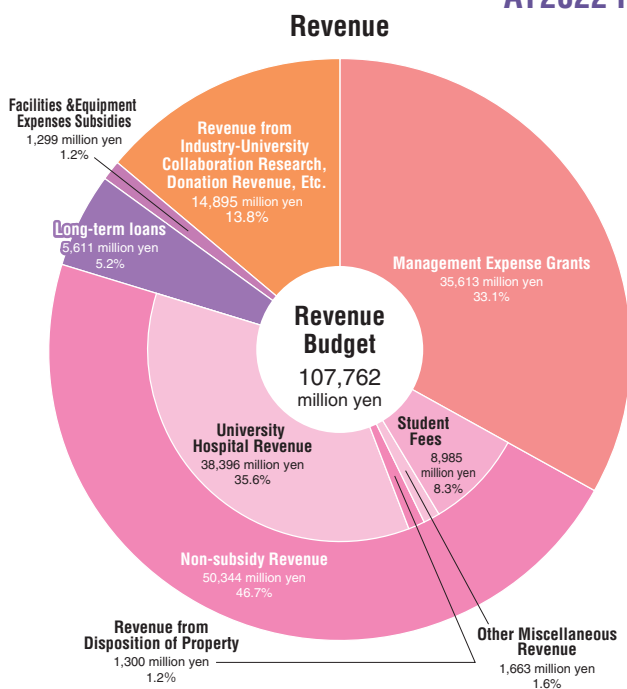
## Financial Base

Funds that form the financial base of the university's education and research activities consist mainly of management expense grants from the government, tuition and other student fees, which are non-subsidy revenue,

hospital revenue, and external funds derived from joint research fees from corporations.

In addition, there are many donations from individuals and companies, and these support various activities of the university.

### AY2022 Initial Budget



## To create GLOBAL TRUST

In October 2023, we will celebrate the 50th anniversary of the establishment of the University of Tsukuba. The University traces its roots to the Normal School, Japan's first institution of higher education, founded in 1872, which later became the Tokyo University of Education, the immediate predecessor of the University of Tsukuba, making 2023 also the 151st year since our founding. Since 1973, in which we were reestablished as a "new concept university," committed to being open and promoting constant reforms, we have been playing a role as a unique university in Japan in leading university reforms from both a philosophical and statutory perspective. It is essential that we remain fully aware of our roles and go beyond all kinds of borders to create new value through research and education and continue to fulfill our social roles.

The University of Tsukuba, modeled after innovative universities in the US and Europe, was established in Tsukuba Science City, the largest of its kind in Japan, to become a world-class university based on a new concept. Taking advantage of the legacy of our international and interdisciplinary nature, we intend to conduct research across the boundaries of different disciplines, get ahead of the world in terms of educational models, make the most of our location in Tsukuba Science City to actively promote university-industry collaboration, and so on, as a truly comprehensive university committed to creating new knowledge to design future society. Through such initiatives, we will strive to create and establish GLOBAL TRUST as a new base value for the future society to build a new and better normal.

In April 2022, which marked our new beginning as a Designated National University Corporation, we established a set of basic policies, entitled "University of Tsukuba Vision 2030," to set out our vision for the University and how to realize it as

part of our efforts to achieve the above initiatives. The Vision is based on opinion and discussion among our faculty and staff and represents their attachment to and feelings towards the University. To create "GLOBAL TRUST," all members of the University will make concerted efforts to make the four elements of the Vision, namely Open University, and its Education, Research, and Co-creation with Society, intersect with one another to evolve into something more advanced. We look forward to your continued support and cooperation.



**NAGATA Kyosuke**

President of the University of Tsukuba



\* "GLOBAL TRUST" refers to a relationship of trust not only between individuals, or between an individual and an organization or society but also between societies, organizations, or countries, and is a concept that supports our mission, "create knowledge to solve global issues towards a future global society and develop global human resources who will lead in this challenge." We believe it is the foundation of the transition from this chaotic society to a bright future society.



## Four Vision Elements — Priority Strategies and Action Plans —

### Open University Vision

- ◆ Make dreams come true as a university that is open in every sense of the word
- ◆ Promote independent university management through increasing openness and transparency

**Strategy 1** Establish independent and strategic university management to create GLOBAL TRUST

**Strategy 2** Expand the fan base of the University of Tsukuba by increasing engagement

**Strategy 3** Build a next-generation university oriented toward a digital society

### Education Vision

- ◆ Develop basic skills in understanding the essence of things and seeing things from many different sides
- ◆ Provide a free environment that allows students to keep trying as many times as they want and develop human resources who have diverse values and a good sense of ethics and are able to explore the best possible measures to solve issues and put them into practice

**Strategy 4** Implement education that helps students grow more resourceful as human beings, so that they can become good leaders in the post-VUCA era

**Strategy 5** Promote new types of education and research activities to help people achieve personal development and meet diverse social education needs

**Strategy 6** Promote an education system with international interchangeability worldwide

### Research Vision

- ◆ Promote interdisciplinary collaborations between researchers with a high degree of professionalism and a broad vision
- ◆ Promote research in traditional academic fields by thinking outside of the box while trailblazing in innovative research fields

**Strategy 7** Promote intellectually stimulating research that examines principles

**Strategy 8** Create new academic fields by promoting interdisciplinary research

**Strategy 9** Develop and improve environmental infrastructure for the creation of knowledge to help young talent reach their potential

### Co-creation with Society Vision

- ◆ Network with the world from Tsukuba Science City to work on global issues
- ◆ Promote social implementation of R&D results leading to resolving global issues, thereby contributing to co-creation of a future society
- ◆ Strengthen cooperation with society towards achieving the SDGs, ESG goals and carbon neutrality

**Strategy 10** Take on challenges towards co-creation of a future society through industry-academia-government-bank collaboration

**Strategy 11** Strengthen the venture ecosystem of the University of Tsukuba

**Strategy 12** Accelerate the co-creation of a future society through social implementation of R&D results

## Towards a “truly comprehensive university” committed to resolving global issues — Designated National University Corporation Scheme of the University of Tsukuba —

This academic year marked our new beginning as a Designated National University Corporation. Designated National University Corporations are national university corporations designated by the Minister of Education, Culture, Sports, Science and Technology of Japan as showing a certain level of promise for world-class education and research activities, with the aim of accelerating the improvement of education and research standards and the creation of innovations in Japanese universities. Designated universities are expected to go beyond the scope of domestic competition inside Japan to compete with leading universities around the world in the competitive international environment and are expected to lead reform efforts across Japanese national universities by proactively sharing specific outcomes of their contributions to social and economic development. To become a truly comprehensive university committed to resolving global issues, which is our vision for the future, we

have set three goals under the slogan “Beyond the borders.”

1. Strengthening research expertise to go beyond the boundaries of different academic disciplines
2. Development of people who can go beyond the boundaries of different countries and organizations
3. Social implementation of R&D results contributing to resolving global issues

As a Designated National University Corporation, the University of Tsukuba is expected to play a leadership role in the reform of national universities. We are sure that by meeting this expectation we can become a driving force behind further growth of higher education in Japan and overall development of the country. We will strive to make this come true, being fully aware that the whole world is the stage for our collaboration and competition.

\* Information about the Designated National University Corporation scheme of the University of Tsukuba is also available on the following website of the Ministry of Education, Culture, Sports, Science and Technology of Japan





## **Founding Principle: An Internationally Open University**

### **Mission of the University:**

Create knowledge to solve global issues and develop global human resources who will lead in this challenge

### **Co-creation with Society** [See page 12 for details]

Contributing to society through activities, etc. leading to the resolution of global issues

### **Research** [See page 18 for details]

Promoting International Leading-edge Research

### **Education** [See page 22 for details]

Delivering Education with International Interchangeability

### **University-Industry Collaboration**

[See page 28 for details]

Contributing to the enhancement of Japan's global industrial competitiveness

### **International**

[See page 32 for details]

Realizing a University that Practices Internationalism on an Every Day

### **University of Tsukuba Hospital**

[See page 34 for details]

Strengthening its "True" Function as an Affiliated Hospital of a Comprehensive Research University

### **Affiliated Schools**

[See page 36 for details]

Constructing an Education Model for Primary, Secondary and Special Support Schools

### **University Management** [See page 38 for details]

Transformation from Operating to Managing a University



## Creation of Social Value



# University of Tsukuba Process for Creating Value

To create GLOBAL TRUST

## Inputs

### Financial Capital

■ **AY2022 Budget Amount: 107.8 billion yen**

- Management Expense Grants . . . 35.6 billion yen
- Non-subsidy Revenue . . . . . 50.3 billion yen
- Student Fees . . . . . 9 billion yen
- University Hospital Revenue . . . 38.4 billion yen
- External Funds Revenue . . . . . 14.9 billion yen
- Other Revenue . . . . . 6.9 billion yen

\* Please note that as figures less than one hundred million have been rounded off, their sum may not coincide with the total.

### Human Capital

■ **Faculty Members: 5,328**

- Executive Officers, Faculty Members, Researchers, etc . . . . . 2,378
- Technical Staff and Medical Staff . . . . . 1,802
- Administrative Staff . . . . . 1,148

■ **Students: 16,507**

- Undergraduate . . . . . 9,631
- Graduate . . . . . 6,876

### Physical Capital

(Financial Results for AY2021)

■ **Fixed Assets: 351.1 billion yen**

- Land Area: Approx. 12.7 million m<sup>2</sup> . . . 242.6 billion yen
- Building Area: Approx. 990,000 m<sup>2</sup> . . . . 79.8 billion yen
- Tools, Furniture and Fixtures . . . . . 10.7 billion yen
- Number of Books: 2.73 million . . . . . 10.4 billion yen
- Other . . . . . 7.6 billion yen

## Governance

Governance System

## Mission, Vision

### Founding Principle

## Activities & Outputs

■ Co-creation with Society Page 12

■ Initiatives for SDGs Page 12

**SUSTAINABLE DEVELOPMENT GOALS**

■ Measures to Control COVID-19 Page 14

**COVID-19 RESPONSE**

## Finance

Financial Conditions

**Diversification of Social Needs  
— Addressing Global Issues —**

**External Environment**

Engagement with Stakeholders

## Impact

Contributions to Resolving Global Issues

## University of Tsukuba Vision 2030 Designated National University Corporation Scheme

- Strengthening Research Functions [Page 18](#)
- Improving the Quality of Education [Page 22](#)
- Strengthening Industry-University Collaboration [Page 28](#)
- Promoting Globalization [Page 32](#)
- Strengthening Affiliated Hospital Functions [Page 34](#)
- Improving Education at Affiliated Schools [Page 36](#)
- Promoting University Management [Page 38](#)
- Enhancing Education and Research Activities through Funding, Etc [Page 40](#)

## Outcomes

Promotion of research at the world's highest level as a leading center in the creation of outstanding knowledge

Fostering of rich humanity and a creative intellect and training of men and women who are capable of working independently in a global environment

Demonstrating the University's ability to practice internationalism everyday as an entity in the center of a network of countries and regions around the world

Contributing to the enhancement of Japan's global industrial competitiveness

Strengthening its true function as an affiliated hospital of a comprehensive research university

Constructing an education model for primary, secondary and special support schools

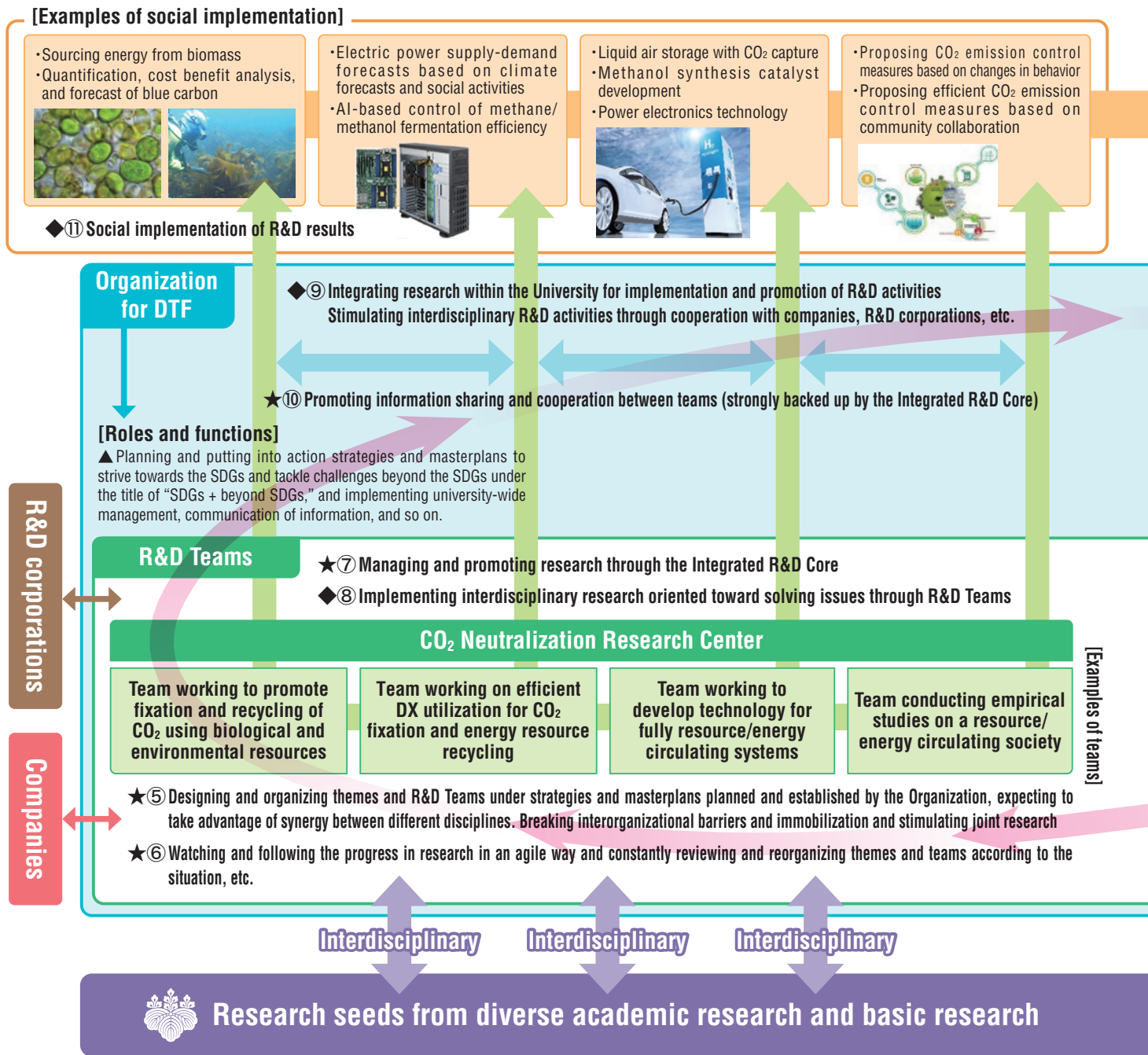
Transformation from operating to managing a university by strengthening the management foundation and information governance

Financial Conditions, Technology Changes,  
Social Issues, Environmental Issues

## Establishment of the Organization for DESIGN THE FUTURE



### Overall flow and roles of the Organization for DESIGN THE FUTURE (rough guide) (including future plans)



### Initiatives by the University



#### Global Warming Initiatives —Holding the Tsukuba 3E Forum—

The Tsukuba 3E Forum was collaboratively organized by universities, research institutes, and municipalities in 2007 with the aim of tackling research that establishes Tsukuba as an energy-saving, low-carbon city of science. Task forces (TF) organized within the forum propose technologies and systems to the city to achieve an eco-city through demonstration and incorporation.

In AY2021, three TF projects were implemented, including a project to increase the precision and versatility of UAV (drone)-assisted technology for 3D measurement of global greenhouse gas levels. The Next-generation Energy System TF actively works with 20 organizations from industry, academia, and government, including two that joined last year. The 14th Tsukuba 3E Forum Meeting was also held to review its past activities and discuss its direction for the future. In the future, the Forum will work towards its new goal of realizing carbon neutrality by 2050.



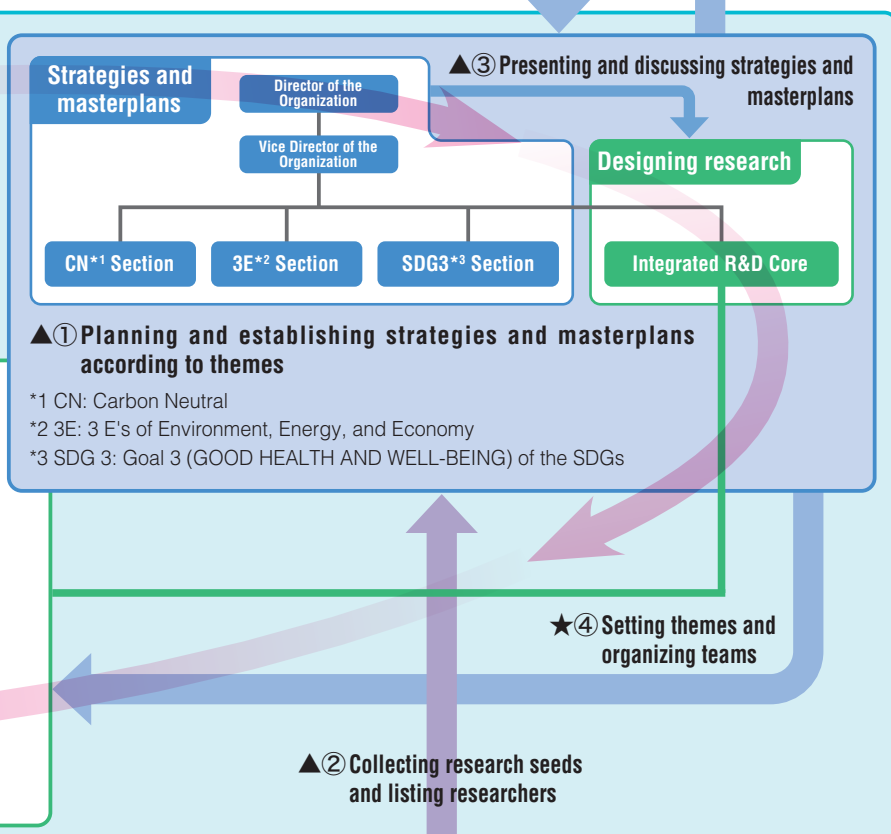
In the Impact Rankings 2022, published to visualize the performance of universities assessed against the SDGs by the Times Higher Education (THG), UK, the University of Tsukuba **ranked third among Japanese universities!**



▲⑫ Contributing to achieving the SDGs, for example, through giving back to society and CO<sub>2</sub> neutralization, and to solving social issues



▲Extracting issues



▲① Planning and establishing strategies and masterplans according to themes

\*1 CN: Carbon Neutral

\*2 3E: 3 E's of Environment, Energy, and Economy

\*3 SDG 3: Goal 3 (GOOD HEALTH AND WELL-BEING) of the SDGs

★④ Setting themes and organizing teams

▲② Collecting research seeds and listing researchers

[Roles and functions] ▲: Organization for DTF ★: Integrated R&D Core ◆: R&D Teams

(ALL TSUKUBA / Interdisciplinary: Graduate Schools, Faculties, Centers, etc.)

**IMAGINE THE FUTURE.**

Given the significance of the Sustainable Development Goals (SDGs), adopted as part of the United Nation's 2030 Agenda for Sustainable Development, and the SDG principle of "no one left behind," the University of Tsukuba is committed to embedding them in its education and research activities. Needless to say, the SDGs are so closely related to one another that they are inseparable in nature. This is the reason that we have founded a new organization named "Organization for DESIGN THE FUTURE" to strategically promote and share our knowledge and R&D results.

The Organization revolves around seven goals out of the 17 SDGs and aims to help build a healthy future society for people and the Earth not only through measurements, simulations, studies, and R&D projects contributing to solving issues, but also by integrating many different kinds of knowledge as a comprehensive university, including that about institutional, life, organizational, and community designs, to provide specific strategies to society in relation to global environmental and social problems.



**NISHIO Chizuru**

Director of Organization for DESIGN THE FUTURE

Professor, Faculty of Business Sciences



We worked to share information throughout the university and provide specific guidelines to take measures to maintain the continuity of education and research activities while preventing infection mainly through the COVID-19 Response Team again in AY2021, as in the previous year. At the same time, we also formulated the university's response policies in line with national and prefectural policy and accordingly made efforts to prevent the spread of infection.

In August 2021, to reduce the burden of COVID-19

vaccinations on the region and speed up the vaccination process, the university opened an on-campus Workplace COVID-19 Vaccination (University Vaccination) site to provide vaccinations for its students, faculty, and staff as well as people working regularly on campus, such as security staff, cleaning staff, and temporary staff. This site operated for 32 days, during which a total of 15,872 people were vaccinated with their first and second doses.

### Student Support

#### Food Assistance Program

Following the Food Assistance Program for Students, carried out in January and February 2021, another food assistance program was implemented in AY2021, supported by many different supporters, including local companies, as well as education and research organizations within the university, to offer food to students in May and November 2021 and January and February of 2022.

Thanks to student volunteers, the Student Representative Conference, and other supporters, the food aid was smoothly delivered to a total of 2,700 students.



#### Support for Exchanges between International and Japanese Students During the COVID-19 Pandemic

Many online international exchange events were held to link Japanese and international students as part of our support for students, who were more prone to isolation than usual due to COVID-19.

##### [Examples]

- **Tsuku-chat (an English discussion program)**

Participated in by a total of 3,185 students from the University of Tsukuba and partner schools.

- **J-Chat: Speak in Japanese**

An event in which participants enjoyed speaking to each other in Japanese.

Participated in by a total of 512 students from the University of Tsukuba and partner schools.

- **GOTCHAT**

A language exchange partner matching program.

457 registrations and 131 pairs resulting from the program.

- **SDGs x TSUKUBA: Chat the SDGs**

An English discussion program on SDG-related topics.

Participated in by a total of 140 students from the University of Tsukuba and partner schools.

#### Student Counseling

The Student Support Center Counseling and Psychological Services offered remote counseling by telephone and Zoom to maintain the continuity of its services even under the COVID-19 pandemic, in addition to the General Consultation Services. In AY2021, approx. 50% and 40% of all services offered by the Counseling and Psychological Services were delivered by telephone and Zoom, respectively. This new consultation system also resulted in easier-to-use services for students on leave and those away from campus for other reasons.

Besides the above, an event named "Get Connected by Remo! Lunch Time Café" was held twice a month to provide students with opportunities to have exchanges with each other. In this event, participating students and faculty members from the Counseling and Psychological Services enjoyed online exchanges, speaking about free topics, such as everyday life, hobbies, and studies.

## University Hospital Measures

The University of Tsukuba Hospital is Ibaraki Prefecture's only Special-Purpose Hospital. As a hospital with an important mission to accept critically ill patients who cannot be accepted by other hospitals, the University Hospital provides

a wide range of medical services that other hospitals cannot even during the COVID-19 pandemic, striving to maintain its function of offering advanced medical care.

### Dispatch of a Hospital Administrator, Doctors and Nurses to Vaccination Sites and a Temporary Medical Facility

In AY2021, the University Hospital dispatched a total of 168 doctors and 90 nurses to group vaccination sites installed for elderly and other people due to a lack of doctors, mass vaccination centers set up to speed up the vaccination process, and Workplace COVID-19 Vaccination sites for students and other people.

In addition, the hospital also dispatched a hospital administrator and a total of 390 doctors to a temporary medical facility set up by Ibaraki Prefecture to make up for the shortage of hospital beds.

\* Operating period: From August 16, 2021 through March 31, 2022 (a total of 221 days)

### Organizing the Ibaraki Prefecture Cluster Response Task Force and Providing Cluster Response Support to 472 Facilities

Besides the above dispatch of doctors and other medical professionals, the University Hospital set up a secretariat for the Ibaraki Prefecture Cluster Response Task Force inside the hospital to establish a field support system. The hospital swiftly dispatched doctors, nurses, and laboratory technicians (specimen collection) to cluster sites each day, resulting in medical workers being dispatched a total of 578 times to a total of 472 facilities.

Furthermore, Tsukuba i-Laboratory LLP, a registered sanitation laboratory jointly run by the University of Tsukuba and LSI Medience Corporation, also placed special emphasis on cluster responses and played a core role in cluster inspections in Ibaraki Prefecture by taking advantage of a rapid PCR testing system developed in Tsukuba to enable same-day reporting of PCR test results to cluster sites.

### Development of a Hydrogen Fuel Cell Bus-based Disaster Prevention and Infection Control System

To realize Society 5.0 in preparation for large-scale disasters, a theme adopted in the Cross-ministerial Strategic Innovation Promotion Program (SIP)<sup>(\*)</sup> in AY2020, two hydrogen fuel cell

buses were developed to create a disaster prevention and infection control system that combined mobility, stand-alone power function, and rapid PCR testing function.



#### [Social contribution examples]

- Provision of PCR tests at the Tsukuba City Coming-of-Age Day Celebration (January 9 and 10, 2022)
- A power supply demonstration at a special needs evacuation center (January 28, 2022)
- Provision of PCR tests for essential workers (February 1 – March 31, 2022. Still underway)

\* Research Director: Hiromichi Suzuki, Professor, Faculty of Medicine  
Social Implementation Director: Kenji Suzuki, Professor, Faculty of Engineering, Information and Systems

## Measures at Affiliated Schools

The educational activities of our affiliated schools in AY2021 were carried out by combining on-campus and online classes while taking infection control measures according to the situation, continuing to monitor waves of the pandemic from AY2020.

During that time, the university collected information from the national government, nearby prefectures, and affiliated schools of other national universities and the Education Bureau of the Laboratory Schools held monthly meetings with the university's 11 affiliated schools to discuss seven points: I. Implementing classes in stages, II. Regular learning and evaluation of subjects, III. Method for holding school events

and special activities, IV. Mental health of children, V. Measures for handling infections, VI. Safety measures and attending work for faculty and staff, and VII. University of Tsukuba and Education Bureau of the Laboratory Schools support. Based on these meetings, we implemented COVID-19 infection control measures at schools and promoted safe education.

The university invested about 40 million yen as financial support to back these educational activities by using the national government's supplementary budget and parts of the university budget such as the University President's discretionary funds.

## The University's Involvement in the 2020 Tokyo Olympic and Paralympic Games

The university has provided a Sports Volunteer Course to train volunteers for the 2020 Tokyo Olympic and Paralympic Games (the 2020 Tokyo Games) and other sports events, in which experiences of students who had guided overseas teams during the 2020 Tokyo Games and other knowledge related to the Games were shared. In the evening of July 8, 2021, we also held an online send-off party (streamed on YouTube) for (a total of 50) athletes participating in the Games as well as officials, coaches, healthcare staff and other people involved in the Games (more than 100 people in total) (past or current affiliation with the university or its schools).

From July 14 through August 2, the university also hosted the Swiss National Team's (52 members in total) pre-camp for athletes' final training in mountain biking, judo, and athletics using its athletic facilities. Thorough measures were implemented to keep the camp safe during the COVID-19 pandemic, resulting in all the athletes and other related people being able to arrive at their respective venues safe and sound with no cases of infection or close contact. Thirty University of Tsukuba students took part in support activities as attendants (Photo 1) and reported that this had been an invaluable learning opportunity for them to broaden their international horizons.

Besides the above, the Sports Science Week was implemented, during which the University of Tsukuba played online host to the Colloquium of Olympic Studies and Research Centres, the quadrennial meeting of IOC-authorized Olympic studies and research centers from around the world (attended by 75 representatives from 23 different countries) (Photo 2).

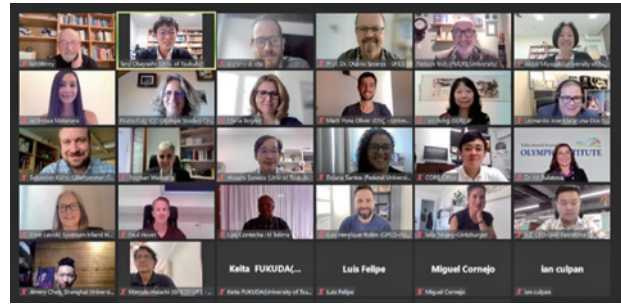


Photo 2: Third Colloquium of Olympic Studies and Research Centres (hosted by the University of Tsukuba)

Furthermore, the university offered a training base for Takanori Nagase (a graduate of the University of Tsukuba School of Health and Physical Education), who won a gold medal in the men's 81-kg judo category at the 2020 Tokyo Games. To commemorate the gold medal, a Gold Post was installed in front of the postal office inside the university and a ceremony was held (Photo 3).



Photo 3: President Nagata (second from left) and Takanori Nagase (third from left)



Photo 1: Swiss National Athletics Team and student attendants

A special exhibition about the performances of these athletes related to the University of Tsukuba in the 2020 Tokyo Games, how the university got to host the Swiss National Team's pre-camp for athletes' final training, and so on, entitled "TOKYO 2020 Retrospective: From Kano & Kanakuri to University of Tsukuba Athletes in 2020," took place at the



Photo 4

Physical Education Gallery (from March 2022 through March 2023). More than 90 items related to the university, including documents and commemorative objects concerning Jigoro Kano and Shiso Kanakuri and the 1964 and 2020 Tokyo Olympic and Paralympic Games were exhibited (Photos 4 and 5).



Photo 5

## Promotion of the Social Contribution Project

The Social Contribution Project was started in AY2004 to invite university staff to participate in various forms of collaborative activities between the University of Tsukuba and the community and to provide comprehensive support for those activities. Since AY2009, they have been open to students as well.

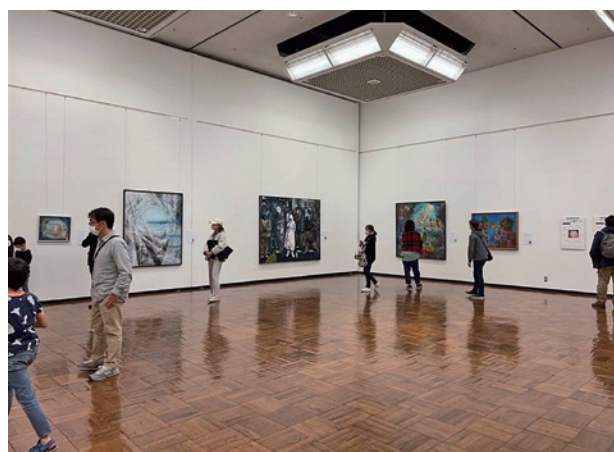
A feature of this project is that proposals can be made for any community collaboration activities without being limited to a particular field, and the areas covered range widely, such as advancement of science, internationalization, cultural and regional revitalization, the environment, health, medical care, welfare, disaster prevention, and earthquake reconstruction.

In AY2021, 24 different projects were selected (17 with university faculty, three with faculty at affiliated schools, and four with students). Although the influence of COVID-19 continued from AY2020, we strove to maintain the continuity of our activities by carefully taking infection control measures through trial and error, such as avoiding the Three Cs and going online, to keep various projects moving in the distinctive University of Tsukuba fashion, which is full of creativity.

**University of Tsukuba Social Contribution Project Website**  
<https://scpj.tsukuba.ac.jp/project/>



Regeneration and Utilization of Local Cultural Properties through Cooperation between Universities and Museums: Survey of Important Archaeological Sites in Tsuchiura City and Development of Public Archaeology



"Summer Vacation Art Marche 2021": From Living with COVID-19 to Living with Art

## Goals & Main Measures

To develop leading-edge research at the world's highest level in both research that deeply explores the truth and research aimed at returning research results to society in broad academic disciplines,

### 1 Steady implementation of fundamental research and working toward a dramatic leap forward in interdisciplinary research

We will form international joint use and joint research centers in fields where our university has strengths and notable characteristics such as mathematical and material science, environmental energy, information computational science, life and medical sciences, humanities and social sciences, and sports science by strengthening cooperation with research institutes including universities in Japan and overseas, engaging in interactive joint research and large-scale international joint research, and inviting overseas research units to the university.

We will further accelerate our priority research support, and promote research at the world's highest level centered on research at the International Institute for Integrative Sleep Medicine (IIIS), the Center for Computational Sciences, the Life Science Center for Survival Dynamics, Tsukuba Advanced Research Alliance (TARA), Tsukuba-Plant Innovation Research Center, and the Shimoda Marine Research Center.

### 2 Bold reforms in university research systems

To promote basic research, interdisciplinary research, and research based on the university's strategies in a well-balanced manner, and to ensure that support and empowerment of research organizations are consistent and based on assessments on the whole, the university roughly divides its research organizations into advanced research centers and development research centers based on the results of a research center review for restructuring, reorganization, and consolidation. For the advanced research centers, the university will introduce a system for evaluating them every five years and certifying them (four levels: R1 to R4).

The research and development centers engage in research activities aimed at social implementation and all of their operating costs are covered by external funding.

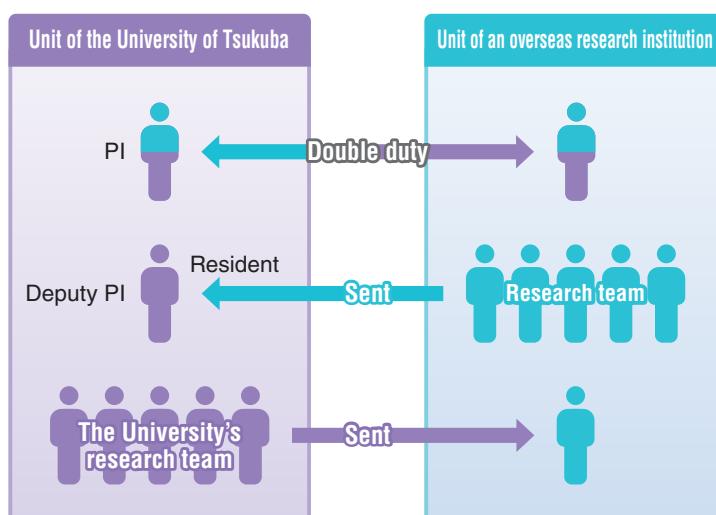
Together with the introduction of this system, the university will convert research centers to education and research support centers, and will consolidate, reorganize and convert research centers to research units.

## Results of Main Activities

### Development of an Environment for Working with Overseas Research Units

By inviting research units from overseas universities and other research institutions to work with the University of Tsukuba by setting up joint centers for research and education on both sides to strengthen international joint

research projects, increase international co-authored papers, promote educational and research collaborations with overseas universities and other research institutions, and so on. (Invitation period: 5 years in principle)

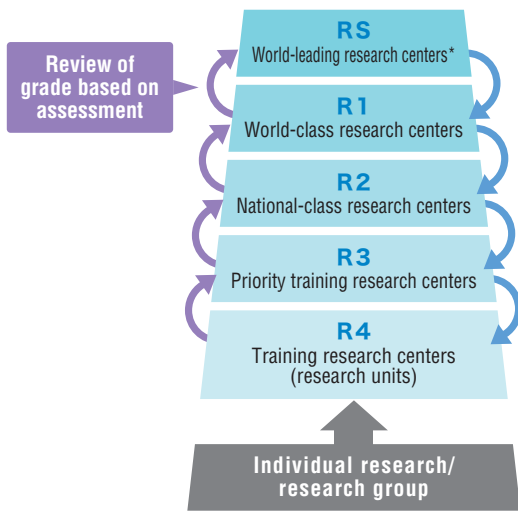


## Construction of a Research Cycle System

The University of Tsukuba makes use of a “research cycle system” as an effective framework for promoting research based on growth stages of the research. The system categorizes the research centers into functions (advanced research centers and research support centers) to activate the metabolism (turnover) of the university’s research as a whole and grades the advanced research centers according to four classifications and allocates priority and strategic resources

based on their classification as follows. RS: world-leading research centers, R1: world-class research centers, R2: national-class research centers, R3: priority training research centers, and R4: training research centers (research units).

Furthermore, it established an assessment system to stimulate the research activities of the research centers by assessing each research center every five years (with an interim assessment in the third year).



By function	Advanced Research Centers	Research Support Centers
By classification	RS World-leading research centers*	No classification
	R1 World-class research centers	
	R2 National-class research centers	
	R3 Priority training research centers	
	R4 Training research centers (research units)	

\* Established in February 2022  
Accreditation of centers will be based on future evaluations.

For information about the research centers of the University of Tsukuba



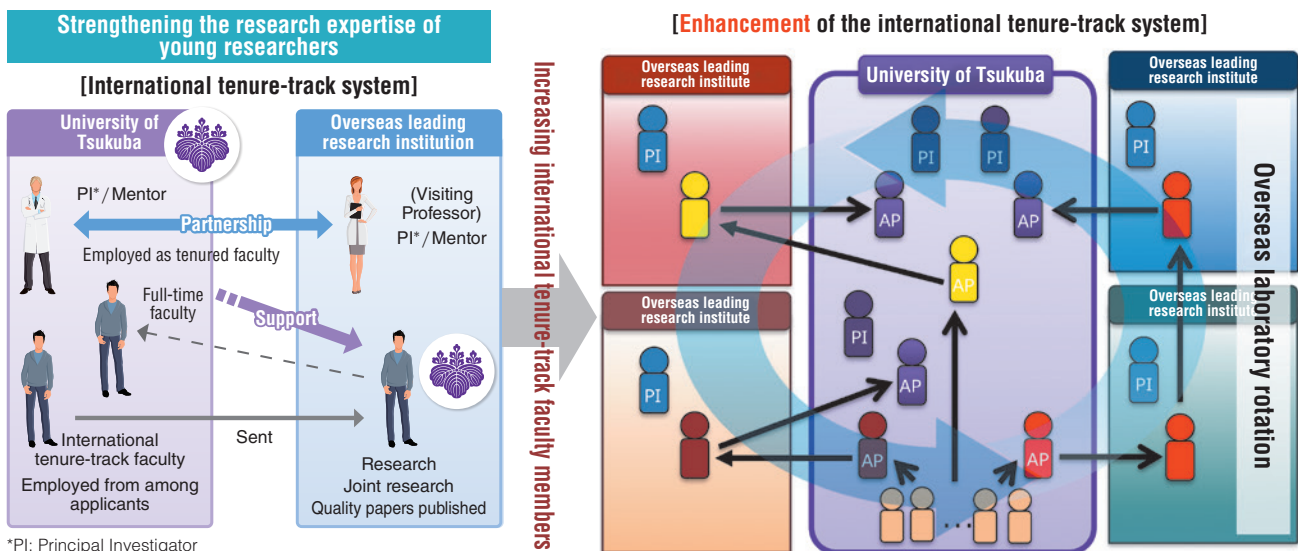
## Development of Young Researchers through an International Tenure-track System

This system was introduced in AY2013 to enhance the university’s research expertise by employing excellent young researchers as international tenure-track faculty members and sending them to leading research institutes overseas during their tenure to help them develop the ability to conduct quality research in a competitive environment, reinforce international joint research projects, increase the number of international co-authored papers, raise the university’s Q value (proportion

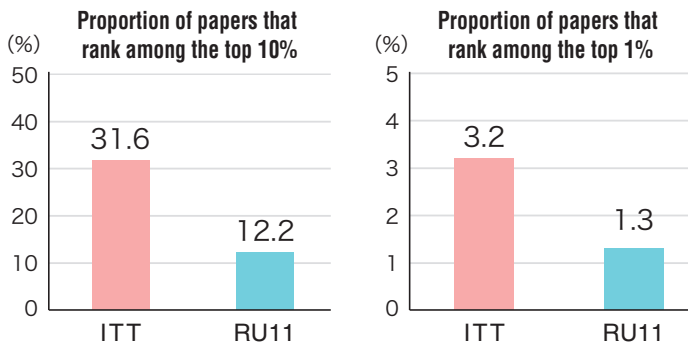
of papers that rank among the top 10% most cited), network with the world’s best research institutes, and so on.

Papers that the university’s international tenure-track faculty members published are of higher quality and have substantially contributed to a surge in the overall research expertise of the entire university. Further positive outcomes are expected now.

### Examples of initiatives by the University of Tsukuba that have become national policies



\*PI: Principal Investigator

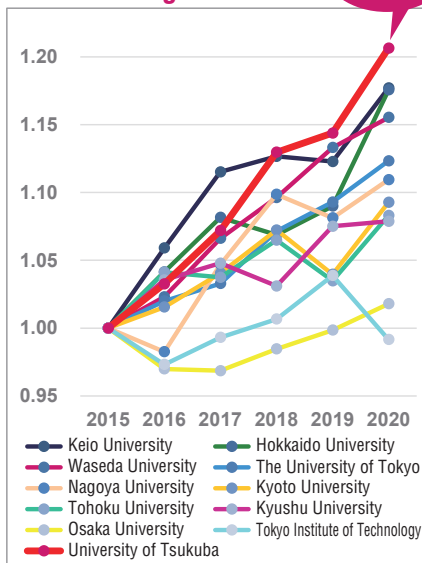


\* Source: Scopus (Jun. 29, 2022) Period: 2017–2021 (average)

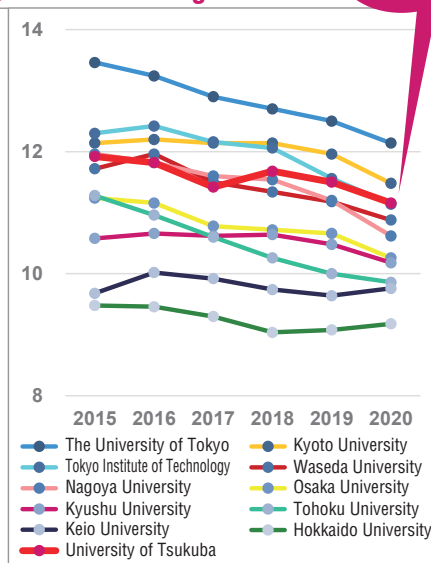
### Papers by international tenure-track faculty members are markedly higher quality even compared to the entire RU11

(Note) RU11 is a consortium that goes beyond the boundaries between national and private universities and consists of 11 research universities which place special emphasis on conducting research and developing advanced human resources through the research and have continued to survive intense academic competition in the world, namely Hokkaido University, Tohoku University, University of Tsukuba, University of Tokyo, Waseda University, Keio University, Tokyo Institute of Technology, Nagoya University, Kyoto University, Osaka University, and Kyushu University.

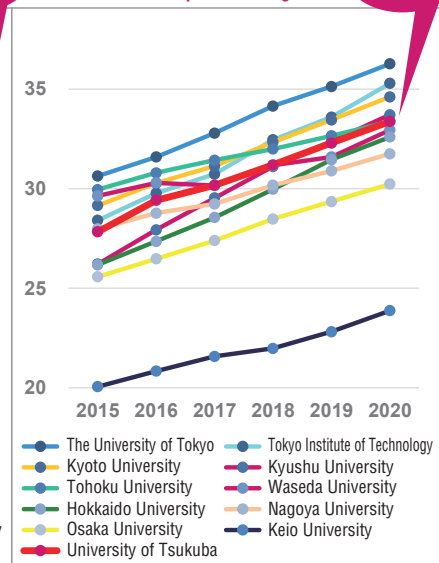
### Increase in the number of papers published (compared to 2015) 1st among RU11



### Proportion (%) of papers ranking among the top 10% most cited (Field-weighted/average of the past 5 years) 3rd among RU11



### Proportion (%) of international co-authored papers (Average of the past 5 years) Tied for 5th place among RU11



\* Graphs are based on Scopus database values (all publication types). Date of calculation: June 27, 2022

## Development of Transborder Researchers

The goal of the Top Runners in Strategy of Transborder Advanced Researches (TRiSTAR) Program, implemented through collaboration between universities, national research institutes, and companies, is to develop “transborder researchers” who can go beyond the boundaries of different disciplines and industries in pursuit of their areas of specialty to discover new possibilities, as part of Strategic Professional Development Program for Young Researchers of the Ministry of Education, Culture, Sports, Science and Technology.

The “transborder researchers” that this program aims to foster are the next-generation of top runners who break through all kinds of borders, such as those between industry, government, and academia, as well as language, discipline, and industry segment/sector borders, and who possess:

1. The “ability to deepen expertise” to advance and deepen their research based on an original and cutting-edge research foundation with a long-term vision;
2. The “ability to see from a higher perspective” to derive co-creation with other disciplines/industries from the potential of their expertise; and
3. The “ability to transmit and manage” to expand their

expertise and unite and lead research groups.

In implementing this program, we will make the most of the strengths of Tsukuba Science City, which has one of the best research environments in Japan, to develop and demonstrate a world-leading development program that transcends the barriers between the humanities and sciences through collaboration among the universities, national research institutes, and companies. By building a systematic support system for transborder activities, and establishing a Cutting-Edge in Campus (CEiC) for companies and us to resonate on advanced technology and human resource development culture, we will implement initiatives to overcome challenges to strengthen Japan’s research capabilities, such as joining the world’s top researcher networks, promoting Diversity & Inclusion, and protecting and utilizing intellectual property as resources. Our efforts will gradually be expanded nationwide.





## Advanced Research Centers (18 organizations in total)

### ▶ R1 (World-class Research Center) (3 organizations)

#### Center for Computational Sciences

Computational science is the third approach to scientific discovery and is driven by computational simulations of physical phenomena. It aims to solve problems that were not possible with traditional theory and observation.

Using the University's own PACS/PAX series systems of supercomputers, we promote research on high-speed simulations and large-scale data analysis in a variety of scientific research fields, the development of high-performance computing systems and high-speed network technologies, and tier application methods.



#### Life Science Center for Survival Dynamics, Tsukuba Advanced Research Alliance (TARA)

Aiming to elucidate the fundamental mechanisms that support the survival, adaptation, symbiosis, and evolution of life, we promote research in the areas of metabolism, immunity, circulation, and reproduction, while integrating this research to conduct life dynamics research not only at the individual but also at the population level.

Under a dynamic research system in which medical, biological, agricultural, pharmaceutical, health, and other sciences collaborate with each other, we will elucidate the unknown aspects of life and uncover the hidden survival strategies of living organisms.



#### International Institute for Integrative Sleep Medicine (IIIS)

We spend nearly one-third of our lives asleep. However, the fundamental principles of sleep/wake biology are still unknown. Our director, Masashi Yanagisawa, and other researchers discovered a new neuropeptide, orexin, which plays a prominent role in sleep/wake regulation, and demonstrated the functions of the neuropeptide before the rest of the world, thereby generating a new research field in neurobiology of sleep and metabolism.

To aim at deciphering the mysteries of sleep, researchers of the institute carry out innovative research across basic biology, including molecular genetics, neuroscience, and physiology, as well as data engineering, drug discovery, and human sleep physiology.



### ▶ R2 (National-class Research Center) (10 organizations)

Tsukuba-Plant Innovation Research Center  
 Plasma Research Center  
 Center for Cybernics Research  
 Center for Artificial Intelligence Research  
 Advanced Research Initiative for Human High Performance (ARIHHP)  
 Shimoda Marine Research Center  
 Alliance for Research on the Mediterranean and North Africa (ARENA)  
 Center for Research in Isotopes and Environmental Dynamics (CRIED)  
 Microbiology Research Center for Sustainability  
 Proton Medical Research Center

### ▶ R3 (Priority Training Research Center) (5 organizations)

Research Center for West Asian Civilization  
 Tsukuba Research Center for Energy Materials Science  
 Transborder Medical Research Center  
 Tomonaga Center for the History of the Universe  
 Mountain Science Center

### ▶ Research Support Centers (2 organizations)

Research Facility Center for Science and Technology  
 Academic Computing Communications Center

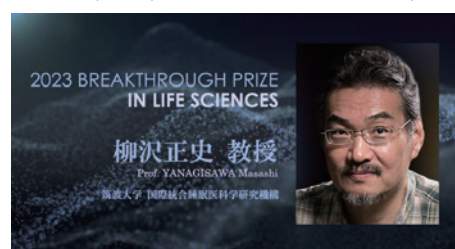
## Masashi Yanagisawa, Director of the International Institute for Integrative Sleep Medicine, won a Breakthrough Prize

Winners of the Breakthrough Prizes, international academic awards in natural sciences, were announced on September 22, 2022. Dr. Masashi Yanagisawa, Director of the International Institute for Integrative Sleep Medicine (WPI-IIIS), the University of Tsukuba, was awarded the 2023 Breakthrough Prize in Life Sciences, along with Dr. Emmanuel Mignot, Stanford University.

Dr. Yanagisawa has discovered a new physiologically active peptide, orexin, and has elucidated the clinical state of narcolepsy (hypersomnia), paving the way for the development of new treatments for hypersomnia and insomnia. This earned him the prize.

The Breakthrough Prizes were established in 2012 by the founders of Google and others. Winners are announced in Fundamental Physics, Life Sciences and Mathematics each year. The Prizes provide one of the

highest monetary rewards in the world; the prize money was \$3 million and was equally divided between the two winners. The Prize in Life Sciences is awarded to researchers who have made great achievements in the treatment of intractable diseases. Dr. Yanagisawa is the fourth Japanese winner to receive the Prize in this field, following Dr. Shinya Yamanaka (2013) and Dr. Yoshinori Ohsumi (2017), and Dr. Kazutoshi Mori (2018).



IIIS

筑波大学  
国際統合睡眠医学  
研究機構



# Delivering Education with International Interchangeability

## — Improving the Quality of Education —

### Goals & Main Measures

#### 1 Training human resources with international interchangeability

By providing education based on a student-centered viewpoint and guaranteeing the quality of education for stakeholders, we will shift our educational curriculum to be one based on Master's and Doctoral Programs by enriching existing Master's and Doctoral Programs and establishing new Master's and Doctoral Programs, thereby establishing an educational system focused on international interchangeability and international cooperation.

#### 2 Transborder partnerships with Japanese and overseas universities and R&D enterprises in Tsukuba Science City

We will implement Master's and Doctoral Programs in a wide range of fields centered on graduate courses in collaboration with researchers at R&D enterprises and R&D departments of companies in Tsukuba Science City and researchers in relevant fields at the University of Tsukuba.

#### 3 Specific measures for recruiting diverse, outstanding students from around the world

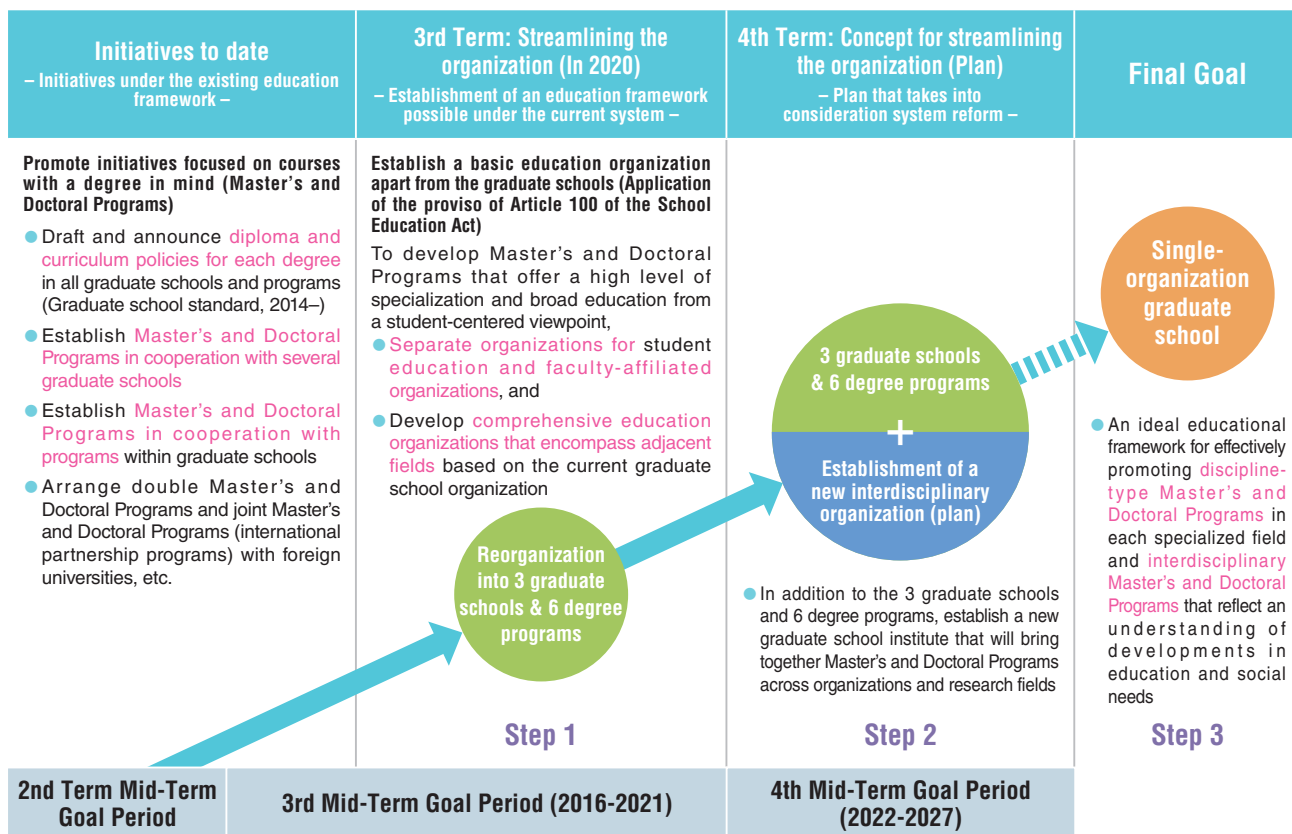
For undergraduate programs, we will conduct a comprehensive entrance examination for disciplines including the humanities, social sciences, and natural sciences appropriate to an educational system that brings the true abilities of the applicants out to the fullest (including international students and persons already in employment).

### Results of Main Activities

#### Plans for the future

### Vision for Graduate School Reform and Organizational Improvements from the Third Term

— Master's and Doctoral Programs that will develop students' individuality and abilities under an open education system —



## Promoting Graduate School Education Reform: Shifting to a University-wide Master's and Doctoral Program System

In AY2020, the university made a general transition to a new education system centered on Master's and Doctoral Programs to enable faculty from a wide range of disciplines to collaborate beyond the traditional organizational framework, so that the university can precisely meet human resource development needs that are becoming increasingly advanced

and diversified in today's society, which is undergoing rapid changes and faced with complex challenges. The university became the first in Japan to make a full university-wide shift to the Master's and Doctoral Program system. By making the most of this system, we will develop diverse highly skilled human resources to meet the needs of today's society.

### Reform Point ① Reorganizing the eight Graduate Schools and 85 Graduate Programs into three Graduate Schools and six Degree Programs

#### Reorganized into more flexible Master's and Doctoral Programs



### Reform Point ② Clarifying the knowledge and abilities (competences) that should be learned

- Clarifying the knowledge and abilities (competences) that students should develop from the perspectives of both versatility (general competences) and expertise (specialist competences) and compiling a systematic curriculum.
- Regularly monitoring the progress of students and providing individual students with the customized learning support that they need in order to make sure that they can master the necessary general competences and specialist competences by the time of completion.

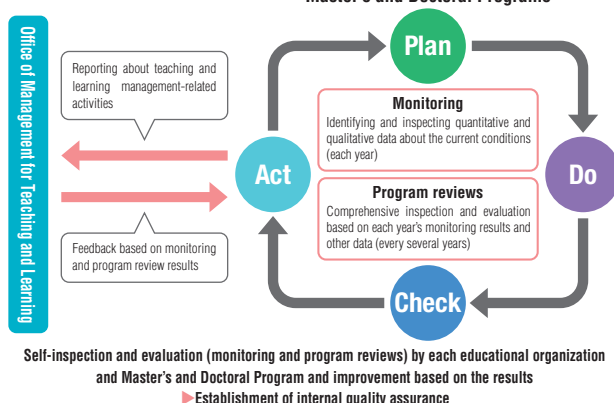
### Reform Point ③ Categorizing degrees according to the purposes of human resource development and launching specialist degrees

- Realizing human resource development that meets the diverse graduate education needs of society and corporations by classifying degrees into three categories, namely research degrees, specialist degrees and professional degrees and clearly defining the purposes of human resource development of each category.
- The launch of specialist degrees in particular is a new endeavor that places emphasis on developing the practical skills required to deal with specific real-life challenges in society, in addition to research abilities.

### Reform Point ④ Realizing university-wide management for teaching and learning

- Establishing the Office of Management for Teaching and Learning with the aim of sustainably ensuring and improving the educational quality of Master's and Doctoral Programs.
- The purpose of the Office of Management for Teaching and Learning is to promote the establishment and advancement of internal quality assurance mainly through Master's and Doctoral Program monitoring and program reviews, in addition to quality assurance reviews for the creation and reorganization of Master's and Doctoral Programs, promotion of systematic faculty development, and research and studies about higher education.

#### Establishment of internal quality assurance through monitoring and program reviews



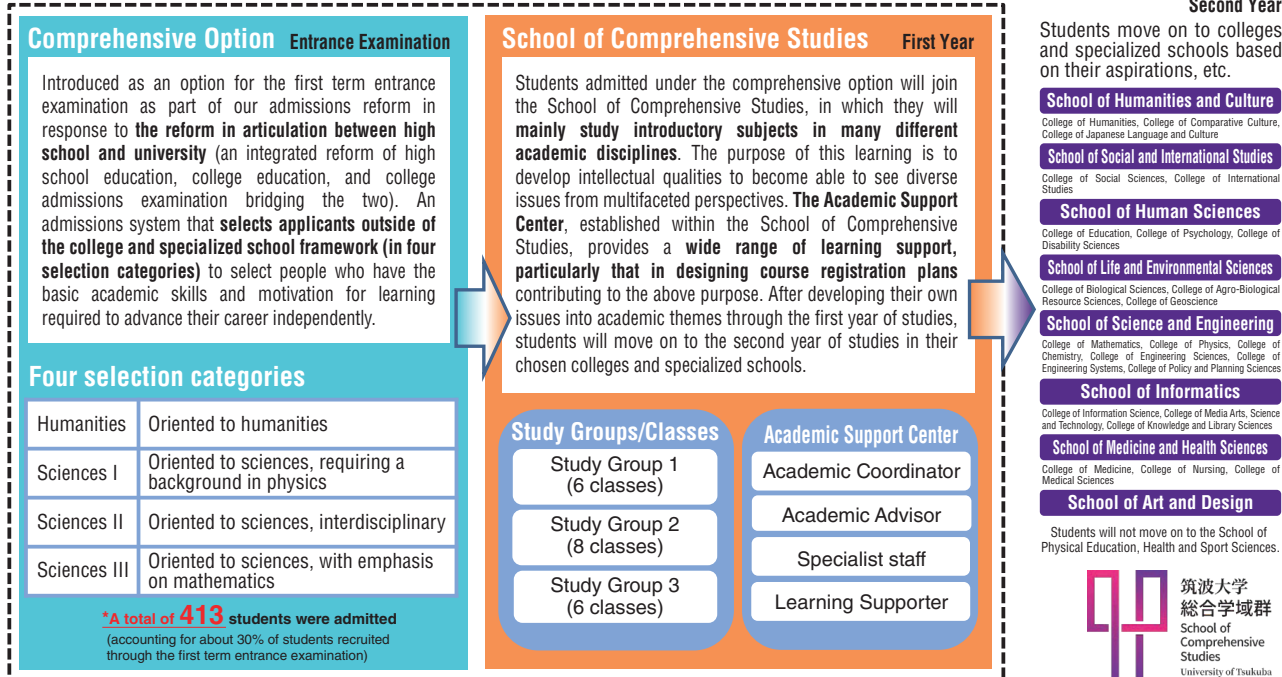
## Reform Based on “Transferable Skills Education” as New Liberal Arts Education (Reform in Enrollment Selection — Introduction of a Comprehensive Option)

To nurture the development of young men and women who will lead interdisciplinary research based on sound expertise and specialized knowledge across diverse disciplines, we have been implementing a comprehensive option for the first term entrance examination for the general selection from AY2021 as a format that is in line with new liberal arts education, enabling students to study and think beyond the

confines of segmented areas of specialization, in addition to the traditional college/specialized school option.

Students admitted under this comprehensive option will join the School of Comprehensive Studies in the first year, and move on to the second year of study in a college or specialized school based on their grades after one year of multidisciplinary study.

Implementing the reform described below for our entrance examination from AY2021 as a format that is in line with “transferable skills education,” our new liberal arts education



## Mathematics-Data Science-AI (MDA) Programs at the University of Tsukuba

The common foundation subject “Information Literacy (2 credits, and 4 credits for students admitted in AY2019 and later academic years),” which aims to get students to develop basic information literacy and computer skills, has been a compulsory subject for all undergraduate students of the University of Tsukuba from the establishment of the university to today. This program was certified by the Ministry of Education, Culture, Sports, Science and Technology (MEXT) of Japan as an “Approved Program for Mathematics, Data Science and AI Smart Higher Education (Literacy +)” in AY2021 and a program offered by the School of Informatics as an advanced version of the above program was certified as “Advanced Literacy” level in AY2022.

This certification system, which was jointly established by the Cabinet Office, MEXT, and the Ministry of Economy, Trade and Industry (METI), aims to select and encourage higher education programs, like regular programs of universities, that provide systematic education on knowledge and skills in the areas of mathematics, data science and AI to develop the practical abilities required to solve problems using mathematics, data science and AI by having such programs

certified by the Minister of MEXT.

The university established the Interdisciplinary Mathematics-Data Science-AI Promotion Office, headed by the Vice President of Education, in AY2021 to promote MDA education university-wide with the aim of building an MDA education system for the entire university, from undergraduate to doctoral level.



数理・データサイエンス・AI  
教育プログラム認定制度  
応用基礎レベル

**MDASH**  
Advanced Literacy

Approved Program for Mathematics,  
Data science and AI Smart Higher Education,  
designated by the Gov of Japan



## Improving Student Support

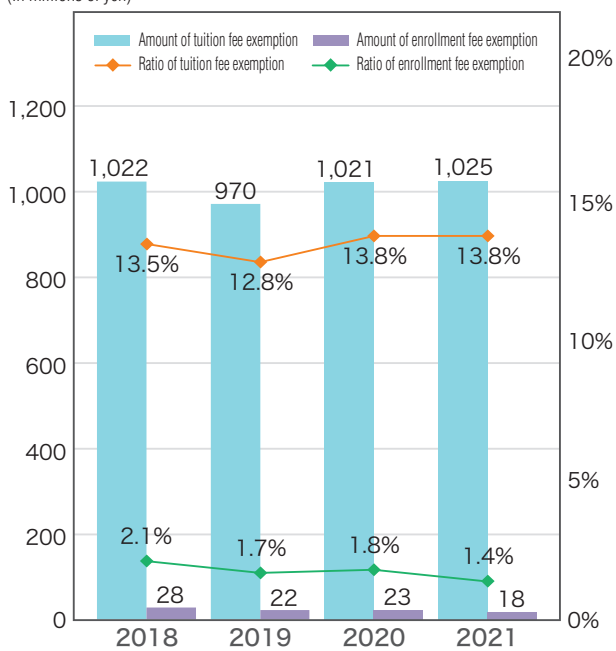
### Enhancement of the Tuition Fee Exemption

The university exempts students who have difficulty paying due to financial reasons, students who are deemed to have unavoidable circumstances, and students who are recognized as having outstanding grades from paying the enrollment fee and tuition fees in whole or in part.

In AY2021, 64 students were granted exemptions from enrollment fees totaling approx. 18 million yen and 5,470 students were granted exemptions from tuition fees totaling approx. 1,025 million yen.

#### Exemption of enrollment and tuition fees

(In millions of yen)



Ratio of exemption = Amount of exemption / Enrollment (Tuition) fee revenue

### Enhancement of Scholarships

The university has further enhanced its financial assistance for students; research scholarships started in AY2021 as another source of financial assistance for outstanding students, in addition to university recommendation scholarships for continuing to graduate school and scholarships for students with outstanding grades, which were launched in AY2019.

### Receiving International Students and Improving Support for Overseas Study

The Tsukuba University Student Scholarship, Tsukuba Scholarship, is a program that provides financial aid to international students and emergency support for educational expenses. This is the university's own scholarship program, which provided 48.78 million yen in support of 77 students in AY2021.

The Study Abroad Support Program (Habatake! Scholarship) is another of the university's unique scholarship programs for studying abroad. In AY2021, the university continued to be affected by the growing global COVID-19 pandemic from the previous year, and it remained difficult to send students abroad. However, special measures have been taken to judge the advisability of some overseas travel, and the university has been providing financial aid only for programs for which travel has been specially authorized.

From AY2022 on, the university plans to start proactively receiving international students, sending students abroad, and supporting studies abroad again, with a view to post-COVID resumption and reactivation of international exchanges.

### Support for Doctoral Students

The university was selected for the Support for Pioneering Research Initiated by the Next Generation (SPRING) program by the Japan Science and Technology Agency (JST) in AY2021 and began to provide financial support to outstanding doctoral students to cover their expenses (living and research expenses). In AY2021, 351 students were selected and a total of about 500 million yen was granted to them. By helping doctoral students to conduct free, challenging and interdisciplinary research, thinking outside of the box, while providing them with living expenses, this project aims to allow these students to focus more on their research, as well as

develop PhD human resources who can follow diverse career paths and play important roles.

Furthermore, the university developed a special salon system, called PhD x FUTURE, in AY2021, to help doctoral students explore their career paths after earning their PhD. This system is meant to be a platform that provides new connections between doctoral students and the industrial world, laboratories, etc. Making use of the system for the above project is expected to help accelerate career support for doctoral students.

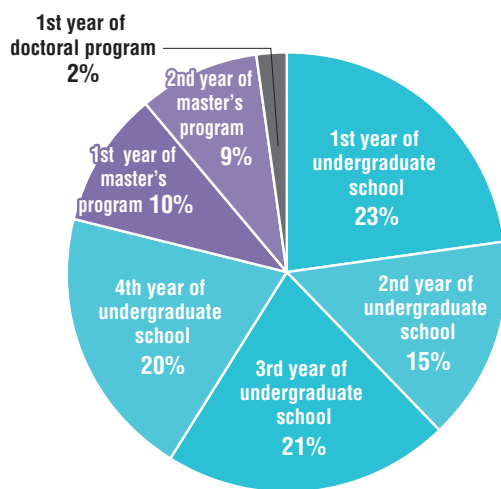
## Psycho-Educational Assessment Function to Maximize the Performance of Diverse Students

The DAC Center enhances the assessment function of the university through “Implementation of Psycho-Educational Assessment to Maximize the Performance of Diverse Students,” including those with developmental disabilities and other minorities. The purpose of this assessment is to objectively evaluate and provide feedback on the learning difficulties experienced by individual students, their intellectual abilities and other aspects, so that all students can find their own learning strategies and form their own career paths according to their individual characteristics, strengths,

and weaknesses.

As shown in the year composition chart below, this assessment function allows students of the university to start to receive educational support while they are still in their early undergraduate years. Assessment results are individually fed back to each student to help them develop better understanding of their own characteristics. If they wish, they can also utilize learning support services offered by the DAC Center, through which the university provides a seamless support system.

Year composition of students who sought assessment in AY2021



## Review of the Plan to Renew Student Residence Halls

Given the possible educational effects of Student Residence Halls, ongoing dilapidation of the facilities and other factors, the university established the Student Residence Hall Renewal Review Committee in July 2021 to achieve its vision concerning development of people, set out in its scheme as a Designated National University Corporation, and compiled a report to summarize the review results in March 2022. Consequently, it has been decided

that the Student Residence Halls other than those established through the Global Residence Development Project will be gradually refurbished and upgraded after the beginning of the fourth term with the aim of developing Student Residence Hall areas where innovative education and research and communication of student culture can take place, taking advantage of living in proximity to a university.

### A bird's-eye view of the entire Student Residence Hall Area

A building provisionally named “Future Society Design Hall” will be established at the entrance leading to the Hirasuna Residence Hall Area as a place for communicating student culture and promoting exchanges with local community members.



Illustration of the Student Residence Hall Renewal Project

## Establishment of the Student Support Center

The university founded a new center named the Student Support Center in AY2021 to establish a comprehensive student support system and provide a one-stop contact point for student support, counseling, and support concerning international exchanges. The center consists of three offices that work as one to support students, namely the Office of Student Welfare, which mainly provides learning and life support to students and offers instruction, advice, etc. to student organizations, the Counseling and Psychological Services, which undertakes educational and awareness building activities concerning mental well-being and personal growth while offering counseling services to help students with the wide range of problems they face in their learning and daily lives, and the Office of International Exchange Support, which offers support in relation to acceptance of international students and Japanese students going to study abroad.



## Support for Students from Ukraine

Russian troops have been invading Ukraine since February 2022. Under such circumstances, acceptance of Ukrainian students evacuated from Ukraine who wished to continue to their studies and research was implemented as follows:

- ① The Special Measures for International Students in Response to the Ukrainian Crisis (authorized by the president) were established for international students expected to have difficulty returning to Ukraine after graduating from or completing programs in the university in March 2022. In accordance with the measures, the university accepted a Ukrainian student as a research student while waiving tuition and other fees for the student.
- ② The university's undergraduate and graduate programs decided to accept 50 non-degree students as special auditors and research students (30 special auditors and 20 research students), to support students unable to find places to study or conduct research due to the worsening situation in Ukraine. As of now, 40 students have been admitted and 27 of them (six males and 21 females) have already arrived in Japan while the remaining 13 are still in the process of scheduling their arrivals.

### [Learning support]

Japanese language courses and lectures themed on Japanese society were provided to students who came to Japan during the summer vacation of the university from August 3 through September 30. Social gatherings with Ukrainian students living in Japan and student circles and other events also followed these lectures.

### [Housing and life start support]

- Ibaraki Prefecture has offered free rent in seven municipal housing units, which are now shared by 20 students. The other



A courtesy visit to President Nagata and the relevant Vice Presidents

seven students have begun to live in the Student Residence Halls of the university. Currently, there are also plans for the 23 students who are scheduled to be accepted later to move into the Student Residence Halls.

- Each of the municipal housing units was renewed and furnished by the University of Tsukuba, Ibaraki Prefecture, and related companies.
- Faculty and staff of the university and related companies also provided material support to the students by offering everyday commodities.
- Tsukuba City provided 50 recycled bicycles, which are lent to the students.

### [Financial support]

- The university's fund for Ukrainian students and the Tsukuba Futureship Association for International Student Support provide financial support to cover their living expenses (50,000 yen/month), travel expenses for returning to Ukraine (up to 150,000 yen planned), learning and living environment improvement expenses, and so on.
- Ten students who applied for the Nippon Foundation Support for Evacuees from Ukraine through the University of Tsukuba and arrived in Japan by early September have successfully received financial assistance from the foundation (1,000,000 yen/year in daily living expense assistance for up to three years, 500,000 yen/housing unit in home furnishing expense assistance, and up to 300,000 yen in travel expense assistance, depending on individual conditions).

- ③ One Ukrainian student (who has already arrived in Japan) was adopted as an international student sponsored by the Japanese government (Japanese Studies Student) for AY2022. <A special support measure for Ukrainian students>



In front of the statue of Dr. KANO Jigoro

## Goals & Main Measures

### 1 Promoting research that can be returned to society through ALL TSUKUBA

Under the Headquarters for International Industry-University Collaboration, we will introduce a research and development center system based on external funding. Through this system, we will aggressively promote research that provides returns to society through joint research with companies, the development of research organizations through joint investment, and the joint use and sharing of research facilities and equipment on and off campus.

We will collaborate with universities, government institutes, research and development corporations, corporate research laboratories and other research institutes in Tsukuba Science City. Through such collaboration, we will promote research that provides returns to society in areas such as the development of new devices, equipment, functional plants, and research in new medicines such as cybernics by constructing an innovation research platform beyond the barriers of government agencies and corporate organizations to bring together human resources under a cooperative structure that will further develop the Tsukuba Innovation Arena for nanotechnology (TIA-nano, 2009–2015) system.

### 2 Strengthening industry-university collaboration functions centered on Tsukuba Science City

We will build an innovation research platform based on a unified ecosystem with organizations in Tsukuba Science City, and we will bridge fundamental research and development research and promote cooperation in research activities between universities and research institutes to establish a platform of universities and research institutes that will promote the integration of graduate school education and research activities. Moreover, we will establish a structure for uniformly promoting clinical research through medicine-engineering collaboration between the University of Tsukuba Hospital and relevant medical institutions and companies in Tsukuba Science City.

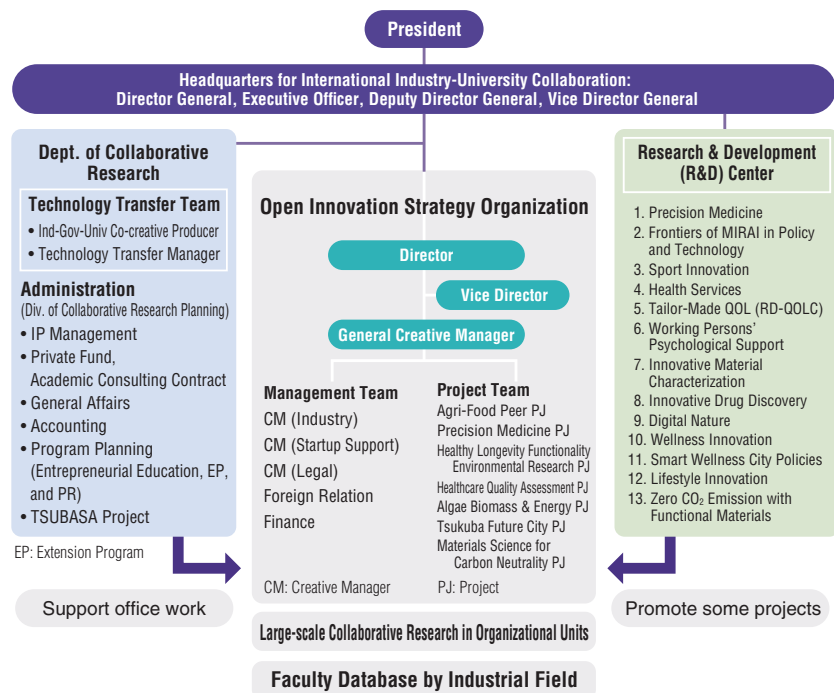
### 3 Promoting vibrant industry-university collaboration activities

We will clearly establish design thinking and entrepreneur education in undergraduate and graduate education and the training of young men and women in Tsukuba Science City.

## Results of Main Activities

### Establishment of the Open Innovation Strategy Organization

The Open Innovation Strategy Organization was established in October 2019 under the Open Innovation Organization Development Project by the Ministry of Education, Culture, Sports, Science and Technology of Japan. The organization promotes: 1) expansion of external funds through needs-driven joint research projects, 2) international implementation of open innovation and 3) industrialization of research results through a startup ecosystem. To support the launching of joint research among industrial fields, it provides a database (faculty DB organized by industrial area) that classifies faculty members and research organizations in a cross-sectoral manner and a system in which Creative Managers manage joint research projects driven by corporate needs in each field. It currently manages six areas: agriculture, life science, biotechnology, service, smart cities, and environmental energy. Going forward, more areas will be added and the scale of joint research will be increased.





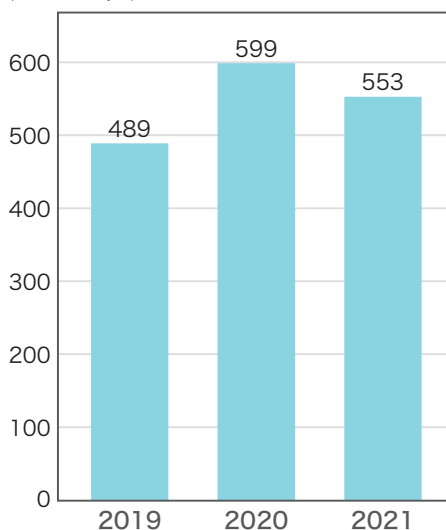
## Promotion of Research & Development Centers

The university establishes research & development centers as a system for creating venues for applying the university's interdisciplinary research capabilities to create next-generation industries. These centers are fully financed by external funds and are intended to create innovations, introduce excellent corporate human resources, increase the speed of research, and develop people with positive attitudes towards industry-university collaboration and entrepreneurship. They actively engage in research and development with companies in academic fields where there is a strong social demand and establish collaborative research frameworks. With a focus on these development research centers, we will promote industry-university collaboration of researchers in various fields and actively contribute to achieving Society 5.0 and the SDGs.

In April 2022, two new centers, R&D Center for Lifestyle Innovation and R&D Center for Zero CO<sub>2</sub> Emission with Functional Materials, were established.

Amount of collaborative research expenses received by R&D Centers

(In millions of yen)



### R&D Center for Precision Medicine

Japan's first 1,000 dollar genome analysis center

Director of the Center SATO TakaAki



### R&D Center for Frontiers of MIRAI in Policy and Technology

Advanced research center for mobility infrastructure that realizes Society 5.0

Director of the Center SANKAI Yoshiyuki



### R&D Center for Sport Innovation

First social experiment center of a national university athletic department in Japan

Director of the Center TAKAGI Hideki



### R&D Center for Health Services

Japan's first center specializing in the study of services that bring health and happiness

Director of the Center TAMIYA Nanako



### R&D Center for Tailor-Made QOL

Provision of programs for improving QOL on an individual basis through food, exercise and sleep

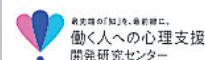
Director of the Center ISODA Hiroko



### R&D Center for Working Persons' Psychological Support

Development research center for research on providing psychological support for working persons and building social contribution infrastructure

Director of the Center OKADA Masaki



### R&D Center for Innovative Material Characterization

Toward innovative measurement and evaluation technologies

Director of the Center ITOH Masahide



### R&D Center for Innovative Drug Discovery

100 years of vitality with new drugs and new technologies

Director of the Center SHIBUYA Akira



### R&D Center for Digital Nature

Exploring the new relationship between computers and nature

Director of the Center OCHIAI Yoichi



### R&D Center for Wellness Innovation

Aiming to realize a healthy longevity (wellness) society in which both physical and mental health and happiness can be felt

Director of the Center SAKAMOTO Kazuichi



### R&D Center for Smart Wellness City Policies

Aiming to create evidence-based policies to foster wellness and longevity

Director of the Center KUNO Shinya



### R&D Center for Lifestyle Innovation

Exploring healthy and happy lifestyles to pass on to the next generation

Director of the Center YOSHIMOTO Hisashi



### R&D Center for Zero CO<sub>2</sub> Emission with Functional Materials

Aiming to realize a carbon-neutral hydrogen economy

Director of the Center KONDO Takahiro



## International Implementation of Industry-University Collaboration

We established the Headquarters for International Industry-University Collaboration in AY2014 and have been striving to strengthen the framework for industry-university collaboration with the goal of expanding our joint research projects with both Japanese and overseas corporations, while implementing programs and events to expand collaboration overseas. In AY2019, we also opened the Laboratory of Intellectual Innovation (LII) in Silicon Valley to prepare ourselves to construct channels with angel and VC investors based in the region.

Despite restrictions on international activities caused by the global COVID-19 pandemic, the university used LII to provide an online program to support international expansion of faculty members hoping to collaborate with companies, VCs, and accelerators in Silicon Valley, in addition to engaging in digital marketing activities. By making use of Wellspring, which has become a standard tool overseas, we have been promoting the university's technologies to tech scouts from around the world, thereby seeking opportunities for building

relationships and international collaboration.

In addition, we have also looked into instances of open innovations between European companies and Japanese universities and have summarized best practices from the past and challenges faced in collaborations to strengthen our activities in Europe. The purpose is to help build new collaborations.

In the future, we will work to translate our past activities into real-life projects by matching the needs of overseas companies with the seeds of the university.



## Support for the Creation of Venture Capital Firms Originating in the University

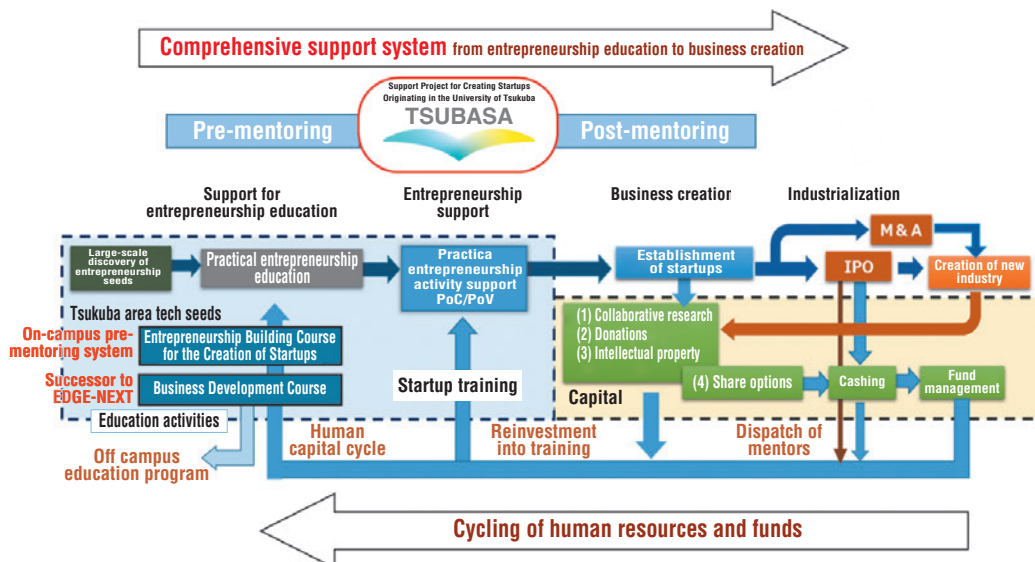
### ▶ TSUBASA—The Support Project for Creating Startups Originating in the University of Tsukuba

In September 2020, the University of Tsukuba was selected for the Program for Creating START-ups from Advanced Research and Technology (START; University Ecosystem Promotion Type) (former SCORE; University Promotion Type) by the Japan Science and Technology Agency (JST). Since April 2022, the university has been promoting this project under the internal name of "TSUBASA—The Support Project for Creating Startups Originating in the University of Tsukuba" (TSUBASA Project).

This project promotes the creation of startups originating in the university that have high growth potential based on the university's excellent technology seeds. It supports researchers trying to advance from the research stage to the

business creation stage or launch businesses by providing hands-on support for the creation of startups originating in the university by pairing them with multiple mentors and offering funds (GAP funds).

We also support the growth process of startups established through this project, for example, through conducting collaborative research, making the funds return to the university, and taking part in the development of entrepreneurs as mentors. The aim is to create a startup ecosystem that supports the development of entrepreneurs and startups in a sustainable and autonomous support cycle in which funds and people circulate between the university and venture capital firms.

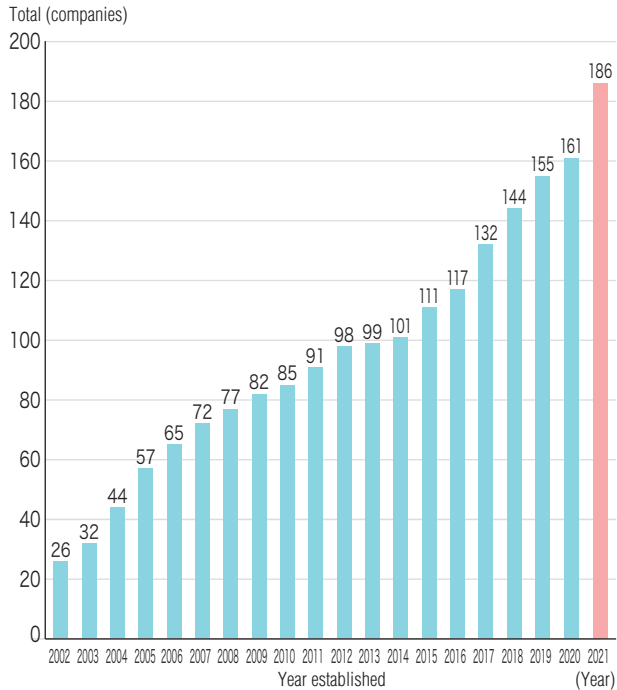


## Funding for Ventures Launched at the University of Tsukuba

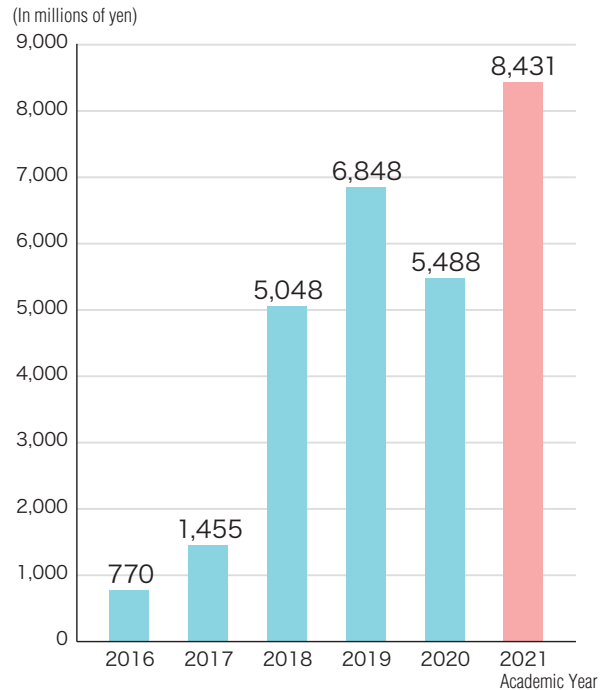
Having launched many startups so far, most notably CYBERDYNE, INC., which became listed in 2014, the University of Tsukuba is one of Japan's universities that have established the largest number of startups. As of AY2021, it ranks 4th among all Japanese universities.

Furthermore, recent years have seen a significant rise in the annual amount of funds raised for startups launched at the university, which reached approximately 8.4 billion yen in AY2021.

### No. of Startups Launched at the University



### Funding for Ventures Launched at the University of Tsukuba



## Promoting Entrepreneurship Education

As of AY2021, the university provides multi-layered education in five categories to develop entrepreneurs.

- (1) Next-Generation Entrepreneur Training Course
- (2) Tsukuba Creative Camp Basic
- (3) Tsukuba Creative Camp Advanced
- (4) Essential Knowledge of Management and Intellectual Property for Entrepreneurs
- (5) Exploration and Development of Global Entrepreneurship for NEXT Generation Program (EDGE-NEXT) of the Ministry of Education, Culture, Sports, Science and Technology

\* EDGE-NEXT was terminated in AY2021.



A business plan presentation in Tsukuba Creative Camp Advanced in AY2021

# Realizing a University that Practices Internationalism Every Day — Promoting Globalization —

## Goals & Main Measures

### 1 We will strengthen our global competitiveness and deliver education with international interchangeability as well as research of the world's highest level

To achieve the goals of our Top Global University project, "Creating a Transborder University for a Brighter Future," supported by MEXT, we will cooperate with our partner universities worldwide and promote international collaboration in education and research through the Campus-in-Campus initiative, which facilitates sharing education and research beyond institutional and national boundaries.

### 2 We will lead the overall globalization of Tsukuba Science City

We will strengthen the global presence of the university and all of Tsukuba Science City through the active dissemination of education and research outcomes by hosting international conferences in which research institutes within Tsukuba Science City as well as educational and research organizations of the university participate.

## Results of Main Activities

### Implementation of the Top Global University Project

The University of Tsukuba was selected as a Type A (Top Type) university in the Top Global University Project by the Ministry of Education, Culture, Sports, Science and Technology in AY2014. Through Campus-in-Campus (CiC), a core element of this project, and other initiatives, the

university aims to realize transborder education and research exchanges beyond national and institutional boundaries and strives to go beyond just being an "open university" and become a "Transborder University that opens Japanese higher education and society to the world."

### Main Initiatives

#### ▶ Promotion of the Campus-in-Campus (CiC) Initiative

This is an initiative for realizing transborder education and research exchanges beyond national and institutional boundaries by sharing campus facilities with international partner universities that have signed Campus-in-Campus (CiC) agreements with the University of Tsukuba. More specifically, it aims to allow students, faculty, and staff members to freely utilize universities around the world as their home campuses by providing the Course Jukebox System, which enables sharing of courses between CiC partner universities, launching and implementing Joint Degree and Double Degree Programs, inviting overseas research units, setting up mutual offices, and so on.

As of May 2022, we have signed CiC agreements with the following partner universities:

University of Bordeaux (France) / National Taiwan University (Taiwan) / University of São Paulo (Brazil) / Universiti Teknologi Malaysia (Malaysia) / University of California Irvine (US) / Utrecht University (Netherlands) / University of Grenoble Alpes (France) / The Ohio State University (US) / Ruhr University Bochum (Germany) / Al-Farabi Kazakh National University (Kazakhstan)



#### ▶ Japan Virtual Campus (JV-Campus)

The university developed the Japan Virtual Campus (JV-Campus), an online education platform, to allow internationally competitive Japanese higher education to be published online in and outside of Japan, and put it into pilot operation in March 2022. Through this collective international gateway to Japanese higher education, we will provide

attractive educational content that are going to be particularly sought after in the post-COVID era, together with many other universities and institutions both inside and outside Japan, thereby jointly leading the revitalization of the creation of learning with people motivated for learning all over the world.

- ◆ International online education platform (JV-Campus)
- ◆ As the **operating entity**, the University of Tsukuba is **in charge of the overall management of this all-Japan international online education platform (JV-Campus)**. (JV-Campus <https://www.jv-campus.org/>)

### All-Japan international online education platform (JV-Campus)

Distributing diverse and attractive strategic course content organized by Japanese institutions to the world as an all-Japan project

Accumulating diverse knowledge applicable to the world and society in the form of courses

Promoting Japanese language education and the strengths of Japan



Available in different languages, mainly English

All universities both inside and outside Japan can share their notable educational content to the world if they wish.

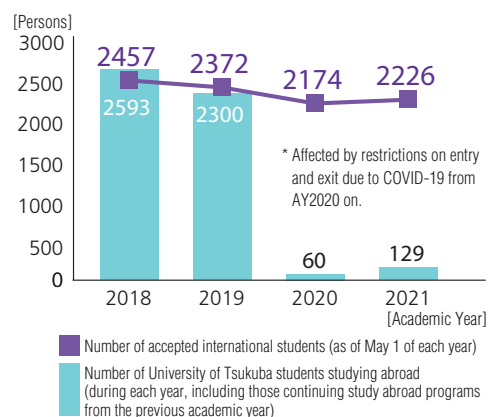
An Individual Institution Box and support can be provided to each participating institution.

- ▶ Platform environment system
- ▶ Portal site function

## Receiving International Students and Providing Support for Studies Abroad

### ▶ Characteristics of our exchanges with international students (Latest data as of May 1, 2022)

The university is playing host to diverse international students from many different parts of the world (117 countries and regions) as one of the largest hosts of international students among Japanese universities. One characteristic is that the university allows these students to receive tailored Japanese language education according to their Japanese proficiency, while at the same time offering many degree programs that can be completed in English only. International students who cannot travel to Japan due to COVID-19 can also attend online classes.



### ▶ Study abroad programs for students

The university has signed international exchange agreements with as many as 381 overseas universities. We have the largest number of partner universities in China, followed by the US and Germany, in that order. About 40% and 60% of all University of Tsukuba students studying abroad are accounted for by undergraduate students and graduate students, respectively.

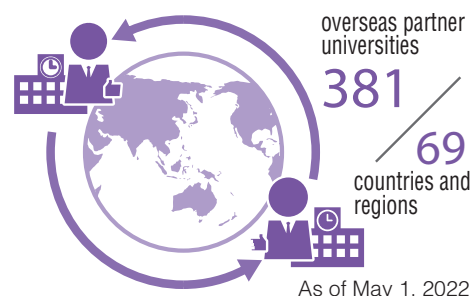
### Support for studies abroad (AY2021)

#### Over 300 students were selected for a wide range of financial support programs

- Six students were funded through the JASSO Study Abroad Support Program (Exchange).
- Twelve students were selected for the public-private study abroad support program “Tobitate! (Leap for Tomorrow) Study Abroad Initiative.” A total of 166 students have been selected for this program since the first period.
- A total of 287 students, including 134 who have been funded online, have been selected for the University of Tsukuba Study Abroad Support Program (Habatake! Scholarship), which was launched in AY2015. Of these students, 15 have been selected for exchange support with overseas partner universities, 54 for Campus-in-Campus (CiC) and other support, 36 for participation in overseas academic conferences, etc., and 182 for participating in overseas language training, etc.

\* “Funded” students have actually been provided with the funds.

\* “Selected” students have been selected for support programs, irrespective of whether they have actually received the funds.



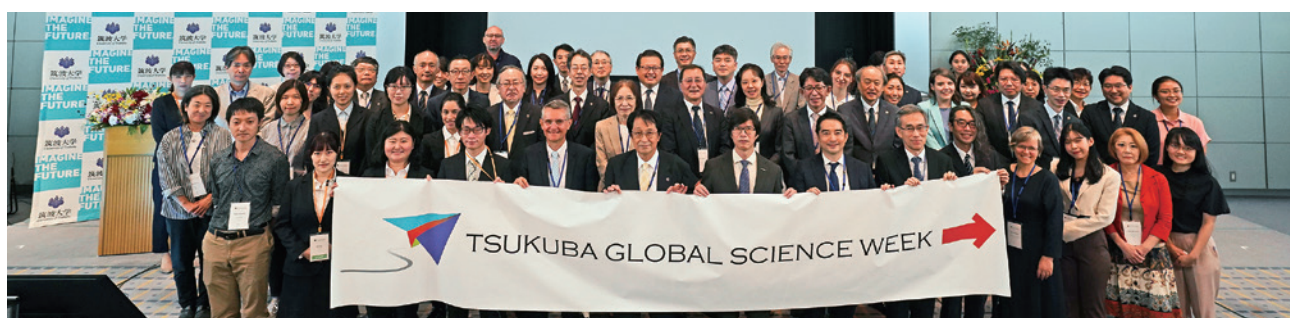
## Tsukuba Global Science Week (TGSW) International Conference and the Tsukuba Conference

The Tsukuba Global Science Week (TGSW) brings together a wide range of researchers and students, from young to experienced, from around the world to Tsukuba Science City, where participants engage in discussions beyond national borders and fields of research in efforts to build an international collaboration network, and at the same time to create knowledge backed by a high level of research. The TGSW, which aims to provide a forum for heated debate towards solutions to global issues, has been held since AY2010. In AY2022, TGSW 2022 (the 12th TGSW) was held in an online/hybrid format in September.

The Tsukuba Conference, which aims to be a “Young Davos’

Summit” to bring together outstanding young people from industrial, governmental and academic circles around the world to Tsukuba Science City to discuss “society, science and technology,” has been held every two years since AY2019, under the leadership of the University of Tsukuba. The third one, Tsukuba Conference 2023, is planned to take place in September 2023 with the main theme of “Design the Future: Curiosity-Driven Quests for Global Solution.”

Through the TGSW and Tsukuba Conference, the university continues to actively promote itself and the international city of Tsukuba even during the global COVID-19 pandemic.



## Goals & Main Measures

The University of Tsukuba Hospital has education and research functions as an affiliated hospital of a comprehensive research university, and medical treatment functions as the only special-purpose hospital in the prefecture.

In education and research functions, we will promote initiatives that leverage the strengths and uniqueness of the university in areas such as enhancing and strengthening regional medical education centers, strengthening the framework for promoting clinical research to accelerate the creation of innovative medicines, introducing the use of robots in medical treatment to realize cutting-edge R&D and medicine and social applications, and establishing innovative cancer treatment regimens using boron neutron capture therapy (BNCT).

In medical care, we are promoting efforts to contribute to regional medicine in Ibaraki and other prefectures by strengthening services such as the provision of telemedicine and advanced medical care (emergency and critical medicine, etc.) and strengthening new outpatient functions.

- From fiscal 2018, the hospital has been shifting from the stage of ensuring sound management is on track to **aiming for true enhancement of functions!**
- With our sights set on the future, we aim to make investments necessary for the real functional strengthening of the hospital, putting in place an environment that will be satisfying not only for patients but also for staff as we **realize a magnet hospital.\***

\* An attractive hospital with comprehensive medical treatment systems, facilities and equipment for providing advanced acute care, with high-level human resource development capabilities, which appeals to doctors, nurses, etc. and is trusted by patients

## Results of Main Activities

### Development of a Hydrogen Fuel Cell Bus-based Disaster Prevention and Infection Control System

This project was implemented during AY2021 through collaboration with private companies, medical institutions, public transportation carriers, etc. The aim of the R&D efforts was to promote the development, empirical research, and social implementation of “mobility for disaster medicine” equipped with a hydrogen fuel cell bus-based disaster prevention and infection control system.

We developed two buses: a motorcoach allowing for quick mass testing (3,000 tests/day) and a highly mobile minibus enabling testing in a narrow space (1,320 tests/day). One advantage is their swiftness; the test result can be given in as little as 40 minutes (about one hour even when a large number of samples are being processed) after accepting the patient. [Research Director: Professor Hiromichi Suzuki (Faculty of Medicine), Social Implementation Director: Professor Kenji

Suzuki (Faculty of Engineering, Information and Systems)]

Development of vehicles has been implemented by setting themes such as “whether the vehicle can meet the power supply quality and capacity standards required by medical instruments,” “whether the vehicle can retain the quiet performance and zero emission characteristic of a hydrogen fuel cell bus” and “whether the vehicle can flexibly switch between functions according to needs arising in the event of a disaster.”

At the request of Ibaraki Prefecture, we have sent the hydrogen fuel cell buses to provide PCR tests for healthcare and other essential workers identified as close personal contacts. We tested 2,698 people from February through March 2022. Given the needs of the prefecture, these PCR tests have continued to be implemented from April 2022 on as well.



Mobile laboratory



Providing PCR tests for essential workers  
(The two vehicles in operation at the same time on February 24, 2022)

## Support for Patients with Severe Diseases and Their Families

The Department of Palliative and Supportive Care was established on April 1, 2022 to provide consultation and care to patients with severe diseases, such as cancer, chronic cardiac failure, chronic obstructive lung disease and chronic kidney disease, and their families.

While new treatments have been developed for many intractable diseases, resulting in an increase in life expectancy, growing numbers of patients need to receive continued treatment. For cancer care in particular, improvement of the quality of recuperation life is regarded as a policy challenge, and calls are increasing for the establishment of a system for seamless provision of palliative care from early to terminal

stages.

In the treatment and care of severe diseases, the first thing that the department does is relieve pain and symptoms causing discomfort and help patients find treatment and care methods that suit them. As symptoms progress, depression may ensue, making it difficult for the patient to make decisions about treatment or care for themselves. As such, the department places emphasis on practicing “advance care planning,” which refers to coproducing a plan in advance with each patient and their family on what kind of treatment and recuperation they want to receive if their conditions progress.

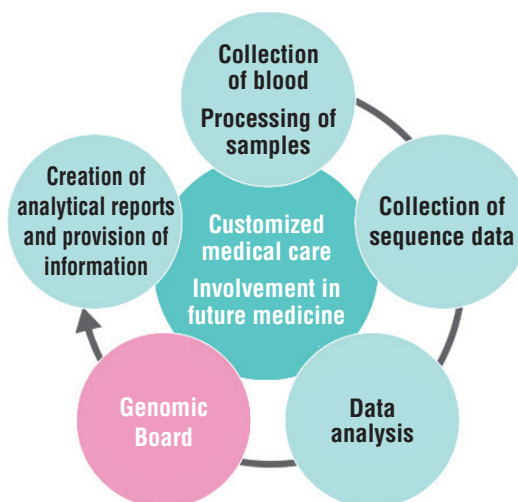
## Japan's First Genome Dock Started

The University of Tsukuba Hospital started Genome Dock, a new attempt to share information helpful for diagnosis and treatment of diseases through analysis of the human genome, in July 2021. The aim is to collect genome data, conduct high-definition analysis of it, and share information helpful for health management of individuals through cooperation with the Tsukuba Preventive Medicine Research Center of the University Hospital, iLAC, a startup originating in the University of Tsukuba, and other stakeholders.

This project targets 125 different genes involved in cancer, heart disease and other conditions. After these genes are analyzed, the meanings of the results are discussed by the Genomic Board, a board of experts formed by medical specialists from respective clinical fields, and reports are accordingly created. When the results are returned to each patient, a clinical genetic specialist and certified genetic counselor attend the meeting to provide specialist information. So far, significant pathological genetic mutations have been detected in four out of 24 patients, who have been provided with advice on lifestyle modifications and specific medical inspections.

This is the first system in the Japan to conduct genetic

analyses based on scientific evidence and appropriately return the results from a medical point of view. With the cooperation of external medical institutions, the system began to also be offered in the Tokyo metropolitan area in AY2022.



An exterior view of the University Hospital



High-precision genomic analysis using the AI robot “Mahoro”  
Courtesy of Robotic Biology Institute Inc.

## Goals & Main Measures

Applying the results of three types of centers (leading education centers, teacher education centers and international education centers), we will establish a consortium with universities and affiliated schools throughout Japan and develop and propose curricula for developing global knowledge.

We perceive the 11 affiliated schools as a cluster of schools that will lead education nationally. With this understanding, we share the accumulated knowledge of the affiliated schools including the high level of teaching expertise of the teachers in areas such as guidance in curriculum, school events, and special support education at the affiliated cluster through exchanges at the cluster of schools. Moreover, we will leverage our strengths that can be developed and we will strengthen our framework of collaboration with universities nationwide to develop programs aimed at a Tsukuba-type inclusive education system. Furthermore, we will return the results of those activities nationwide through open research seminars and publishing activities.

## Basic Policy on the Future Vision for Affiliated Schools

Our basic policy on the future vision for our affiliated schools is to work to enhance them as the following three types of centers:

### Leading Education Centers in Effective Curriculum Development Aimed at Improving Basic Academic Ability

With affiliated elementary schools, junior high schools, high schools, and special schools catering to students with all types of disabilities, the University of Tsukuba is a unique university in the world. The university's affiliated schools also have a long history as experimental schools leading the schools of Japan, and we actively report on research and practices in the affiliated schools to lead education in Japan.

#### [Main Initiatives]

- Affiliated school research presentations
- The 16th Sin-Itiro Tomonaga Memorial Buds of Science Prize, etc.



Buds of Science Prize Commendation Ceremony and Presentation

### Advanced Teacher Education Centers for Improving Teacher Instruction

The university's roots go back to Japan's first Normal School. Since then, the university has led education in Japan. The affiliated schools have also played a vital role in cooperating with university research and in practical training for teachers and caregivers. Leveraging the characteristics of their respective school types, the affiliated schools hold open classroom visits and workshops for practicing teachers, accept short-term and long-term teacher trainees, and use their classrooms as venues for conducting courses for teachers renewing their teaching certificates (Option D). (The teaching certificate renewal system was terminated in July 2022.)

#### [Main Initiatives]

- Curriculum development for nurturing uniform global skills in elementary, junior high and high school
- Open courses (in-service teacher training, open courses for qualifying teachers in accordance with the Educational Personnel Certification Act), etc.



Case study on school teaching

### International Education Centers Cultivating Skills in Internationalism

Each affiliated school promotes international exchange activities for young students and teachers based on two common concepts:

- (1) In parallel with their development as individuals, infants, children, and students at the schools develop an attitude of understanding and appreciation of their own culture and the cultures of other countries and an attitude of actively communicating with people of other countries.
- (2) Respecting the culture of their own country and the culture of other countries, teachers make efforts to promote internationalism at their schools as a whole and consider what their schools can do for Japan and the world.

#### [Main Initiatives]

- International Baccalaureate (IB)
- Promotion of Olympic and Paralympic Education



## Results of Main Activities

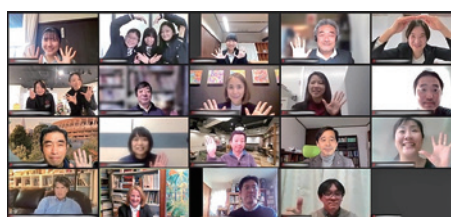
### Curriculum Development for Global Human Resources Training

- The Support Project for Building the Worldwide Learning (WWL) Consortium, carried out jointly by the Senior High School at Sakado, University of Tsukuba, which acted as the base school, completed its three-year project period at the end of AY2021 by replacing originally planned activities with fieldwork in Japan and remote presentation sessions, including an online ESD Symposium, under restrictions caused by the COVID-19 pandemic.
- The university also made achievements in developing a global spirit in students at affiliated schools by working in collaboration with the Faculty of Health and Sport Sciences towards the 2020 Tokyo Olympic and Paralympic Games, which was postponed to 2021, cooperating in the Nationwide Olympic and Paralympic Movement Project, and playing the leading role in the Japan Pierre de Coubertin Youth Forum (in which selection of national team members for international events also took place).  
Furthermore, we organized a lecture meeting by a graduate of an affiliated special needs education school who had won a gold medal at the 2020 Tokyo Paralympic Games and other activities to accumulate more initiatives aimed at

generating greater interest and enthusiasm for the Olympic and Paralympic Games among students.



WWL International Fieldwork (Domestic Version) by the Senior High School at Sakado, University of Tsukuba

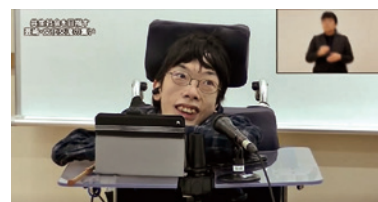


Japan Pierre de Coubertin Youth Forum 2021

### Development of Educational Programs Aimed at an Inclusive Education System

- Students from regular and special needs affiliated schools created videos and other materials on the realization of an inclusive society and held exchanges online.  
In AY2021, a Gathering for Artistic and Cultural Exchanges towards an Inclusive Society was delivered from the Special Needs Education School for the Physically Challenged, University of Tsukuba, to provide an exchange opportunity, in which a movie director who had graduated from the school gave a lecture and videos created by respective affiliated schools were shown one after another. As this program was held on Sunday, many parents attended it, which made this new form of awareness building about disabilities and an

inclusive society more meaningful. This achievement was published both inside and outside the university through its internal communication materials and website.



Gathering for Artistic and Cultural Exchanges towards an Inclusive Society

### Collaboration between the University and Affiliated Schools

- Research collaboration between universities and affiliated schools includes not only the following research projects participated in by members of the Education Bureau of the Laboratory Schools and all affiliated school teachers but also collaborative research projects between individual schools and university faculty members, sometimes from multiple laboratories and other universities:
  - 1) Sharing and Publishing ICT-assisted Teaching Practice: Towards Sharing and Communication of How Each Affiliated School Implements Online Education and Collaboration with the GIGA School Concept
  - 2) Research on Instructions and Support for Visually Impaired and Deaf Infants, Pupils and Students
  - 3) Implementation and Evaluation of Inclusive Education during the COVID-19 Pandemic
- The Career Forum, which had been implemented face to face, was streamed online through collaboration with Ochanomizu

University Senior High School, which has signed a partnership agreement with us. The results of this forum were also reported by video streaming at educational research conferences and have been repeatedly verified through questionnaire surveys.

- Based on the results of their educational research and teaching practice in affiliated schools, 55 teachers from nine affiliated schools gave classes in the university.
- Ten teachers from eight affiliated schools delivered on-demand classes for the teaching subjects of the University of Tsukuba “Teaching Methods for the Period for Integrated Studies I and II” as instructors.
- From the university, 155 students took classes taught for practice at eleven affiliated schools. In the advance guidance on practice teaching, 17 teachers from nine affiliated schools gave classes online or in other formats (except for the practical training for caregivers).

# Transformation from Operating to Managing a University — Promoting University Management —

## Goals & Main Measures

The university aims to shift away from university management depending solely on operating expense grants from the Japanese government to university management backed up by diverse financial resources to meet a broad spectrum of social expectations as a center of excellence in the midst of harsh financial conditions surrounding national universities.

In addition to formulating management strengthening measures to achieve this objective and implementing the measures to diversify the university's financial resources and reform its revenue and expenditure structure, we have established the University Management Reform Office as an advisory body under the direct control of the President. This office includes external corporate managers and other experts, and we are examining concrete plans for the future.

To strengthen governance, we have also established a basic policy on information security and are making efforts to put a framework in place.

## Results of Main Activities

### Establishment of the University Management Promotion Office

The University Management Promotion Office was launched at the same time as our new beginning as a Designated National University Corporation in April 2022 to develop university management strategies and put them into actionable steps with the goal of maximizing the value of the university in all aspects, from education, research, and co-creation with society to university management.

An important mission of this office is to conduct management analyses and develop future forecasts using many different types of information about the university, including IR data, and accordingly establish our future vision for the University of Tsukuba, and medium- to long-term management strategies with a view to achieving the vision. The University of Tsukuba Vision 2030 sets out what the university is at present and what it should be in the future, which has been compiled

through discussions with internal stakeholders. Some of the strategies set out in the University of Tsukuba Vision 2030 are also incorporated in our Fourth Mid-term Goals and Mid-term Plan.

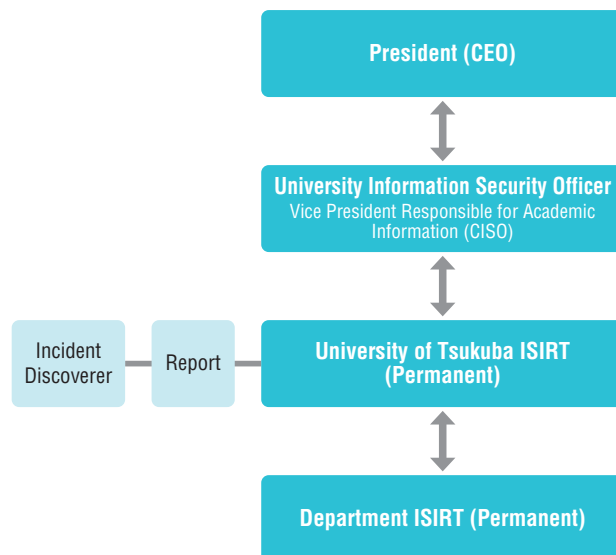
The University Management Promotion Office, formed by a broad range of stakeholders, including faculty, staff members, and graduates of the university; business owners; and people involved with financial institutions, works to accelerate initiatives to realize the University of Tsukuba Vision 2030 and Designated National University Corporation Scheme while constantly updating the Vision by enhancing the analysis and planning functions of the university and building up relationships of trust with stakeholders both inside and outside the university.

### Information Governance Framework Enhancement

Under the basic policy on information security, we are putting in place rules and systems necessary for implementing appropriate information security measures to maintain information security standards that form the foundation of open, comprehensive universities both in Japan and internationally and to ensure the ongoing stable implementation of education, research and administrative business.

➔ For details, see “Building an Information Security Management System” on page 47.

### Information Security Organization and Framework



\* ISIRT (Information Security Incident Response Team)

## Initiatives to Strengthen Management

To maintain a stable business foundation at the university, we must revamp the income and expenditure structure. Therefore, in the Third Mid-term Goals Period, we formulated management strengthening measures based on a “strategy for obtaining external funds,” such as placing greater emphasis on attracting large-scale competitive research funds, the “development of profitable businesses,” for example, extension programs and fund programs that earn course fee revenues by swiftly returning the results of the university’s advanced and leading-edge research and education to society, and a “personnel strategy,” which promotes strategic and efficient allocation of human resources, to strengthen our financial base.

In the Fourth Mid-term Goals Period, we have been working to further strengthen the financial base of the university by diversifying its financial resources while reflecting the results from the Third Mid-term Goals Period. To this end, we are striving towards the establishment of new management strengthening measures, for example, constructing a virtuous cycle for strengthening our financial base through creating new resources by taking advantage of the relaxation of regulations, such as issuing university bonds for a broader scope of projects, and expanding financial resources and fund management operations to refund them.

### (1) Strategy for obtaining external funds

Under the University of Tsukuba Basic Research Support Program, which aims to promote further growth of the university’s creative and pioneering research with a view to attracting more Grants-in-Aid for Scientific Research (KAKENHI), we have provided support to acquire more funds in higher research categories. Consequently, the number of Grants-in-Aid for Transformative Research Areas (A), which was one in AY2020, rose significantly to 11, while we acquired four Grants-in-Aid for Transformative Research Areas (B), which we did not receive in AY2020.

With regard to large-scale competitive research funds, application and hearing support was provided mainly by URAs, while URAs, Technology Transfer Manager, administrative staff and related organizations further strengthened their cooperation. As a result, we received research funds from CREST (1 grant), PRESTO Sakigake (3 grants), JST-Mirai Program (2 grants), AMED-CREST (1 grant), among others.

Furthermore, nine Commercialization Promotion Projects were adopted with the aim of supporting joint research and nurturing and supporting startups originating in the University of Tsukuba, and research spaces, mainly in the ILC and Cooperative Research Buildings, and financial support (first year only) were provided to them.

We acquired 14.28 billion yen of external funds through these initiatives, higher than the previous year (13.678 billion yen).

### (2) Development of profitable businesses

Despite restrictions on face-to-face classes caused by the COVID-19 pandemic, we acquired 45 million yen through extension programs by enhancing online courses (increasing the number of courses and starting a rerun streaming service). We also raised 12 million yen in donations (from two individuals and six companies) for a fund program by appealing for donations to install new benches for campus bus stops and commemorating the donors by putting their names on the benches.

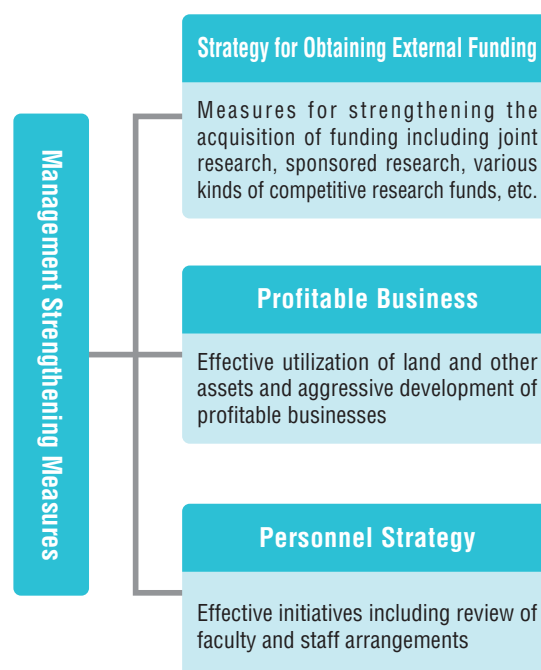
As part of our efforts to secure more internal financial resources, we also signed an outsourcing agreement with a private company and discussed the development and marketing of our official goods. At the same time, we built a review system to make more effective utilization of land and other assets by getting a committee on facilities and land to discuss and promote many different methods of facility development and improvement.

Through these initiatives, we acquired 2.78 billion yen from the development of profitable businesses, up from 2.714 billion yen in the previous year.

### (3) Personnel strategy

We decided to assign strategic positions for the equivalent of 15 people to encourage hiring of young faculty members and strengthen our research capacity, while carrying out effective initiatives including a review of teacher and staff placement.

For administrative staff, we developed a cyclical strategic staff support system for strategic placement of fixed-term staff with a maximum 3-year term and resolved to assign six staff members in this system.



## Tsukuba Futureship

Since April 2010, the University has been awarding the Tsukuba Futureship to students who demonstrate potential to pave a new path for the future to provide them with a stable environment where they can concentrate on study and research and with opportunities to engage in various mutual exchanges as well as to contribute to promoting education and research at the university, and also social contribution activities.

The Tsukuba Futureship has both a General Fund and Specified Funds. The General Fund mainly provides financial support to elementary, secondary and tertiary students for study and research purposes and for international exchanges and development of global human resources.

The Specified Funds, which are established for the implementation of specific projects conducted by the university, are used for purposes such as training and strengthening athletes and teams in sports clubs and developing human resources who will provide high-quality

medical care at the University Hospital.

The Study Support Fund, which is a specified fund, provides support to students who have difficulty studying due to economic reasons. In accordance with the tax deduction scheme introduced under fiscal 2016 tax reforms, donors to this fund can receive a tax deduction by choosing either an "income deduction" or "tax deduction," whichever is more advantageous.

In addition to tax incentives for making donations, the university also gives commendations to donors based on the amount of their donations, as an expression of gratitude to donors.

For further details, please see the Tsukuba Futureship website (<https://futureship.sec.tsukuba.ac.jp/>).

We thank you for your understanding of the mission of the Tsukuba Futureship and we look forward to your continued support.

## 151st Year Since Founding and 50th Anniversary of the University of Tsukuba Commemorative Fund

The University of Tsukuba traces its roots to the Normal School, Japan's first institution of higher education, founded in 1872. This institution underwent a number of transformations until it became the Tokyo University of Education, the immediate predecessor of the University of Tsukuba, which was established in 1973 as a "new concept university." Thus, in 2023, we will celebrate the 151st year since our founding and the 50th anniversary of the establishment of the University of Tsukuba. To realize our founding ideals, we established the 151st Year Since Founding and 50th Anniversary of the University of Tsukuba Commemorative

Fund for (1) the support of world-leading research and (2) the support of international exchanges and development of global human resources. We sincerely thank all stakeholders for your understanding of the mission of the fund and look forward to your support and cooperation.



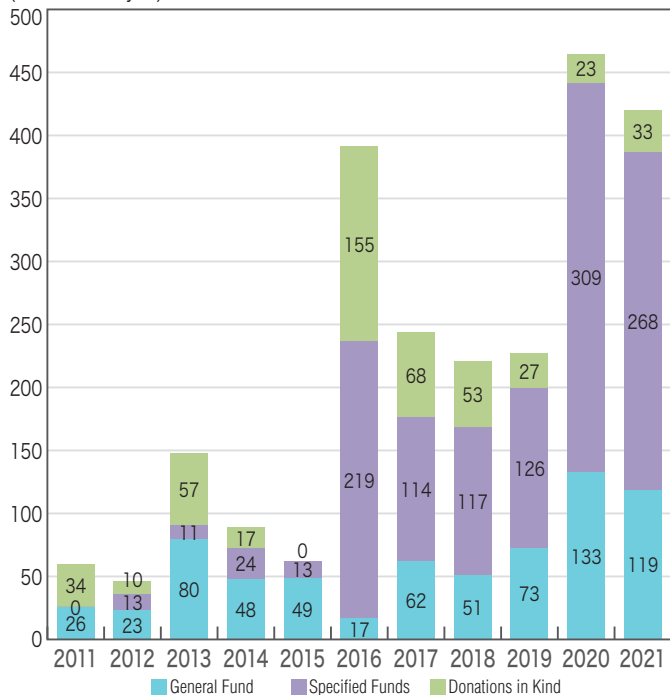
### AY2021 Cash Donations Received

(In thousands of yen)

Purpose of Donation	Donation Amount	No. of Donations
General Fund	119,199	3,124
Specified Funds	268,203	4,459
151st Year Since Founding and 50th Anniversary of the University of Tsukuba Commemorative Fund	169,462	2,469
Futureship Seat Project (FSP)	12,080	8
University of Tsukuba Sports Association Project	10,390	282
University of Tsukuba Hospital Support Project	9,879	57
Shiho-kai Fund	34,020	1,354
Tsukuba Futureship Association for International Student Support	1,405	210
Student Support Project Fund	15,804	68
Young Researchers Support Project	15,147	9
Assets-in-kind Utilization Fund	16	2
<b>Total</b>	<b>387,402</b>	<b>7,583</b>

### Changes in Receipt of Cash Donations

(In millions of yen)



## Crowdfunding

In AY2017, we launched a business partnership with READYFOR Inc. for crowdfunding, a powerful tool for obtaining donations. In AY2021, we implemented four projects with a funding amount of approximately 19 million yen.

As a university carrying out a broad range of educational and research activities, we invite crowdfunding contributions mainly from outside the university for project themes that can

benefit society.

The university will continue actively implementing projects concerning its education, research, cooperation with local community members and other activities and communicating these activities to encourage the formation of donation habits and increase new donors, thereby strengthening its financial base through diversification of its financial resources.

### Projects Implemented in AY2021

#### ① Creating a comic book to help children with Type 1/Type 2 diabetes

The realities of the lives and illness of children with Type 1/Type 2 diabetes are not known enough. This project is about spreading awareness of the realities of children with Type 1/Type 2 diabetes using the format of a comic book as a tool for greater readability. The comic book was distributed at local schools and summer camps for children with Type 1 diabetes for free.

**Amount raised: 571,000 yen**

#### ② The Sixth Hakone Ekiden Team Revitalization Project

The purpose of this project is to raise funds to provide financial support for training of current members of the university's Hakone Ekiden Team, who are aiming to qualify again for the Tokyo-Hakone Round-Trip College Ekiden Race (Hakone Ekiden) by making the most of their knowledge and skills as a successor to Shiso Kanakuri from Tokyo Higher Normal School (predecessor of the University of Tsukuba), who played a central role in the launch of the Race. This project aims to further stimulate the university's education and research activities and demonstrate what student sports is all about.

**Amount raised: 6,175,000 yen**

#### ③ Plan to purchase a tool for morphological observation of plants and insects

We purchased a desk-size simple scanning electron microscope for students to use in experiments and practical training. Not only members of the program but also those belonging to related programs within the University of Tsukuba are allowed to use this tool. Furthermore, we had been periodically holding workshops by inviting elementary students to observe plants and insects using this electronic microscope as part of our social contribution activities until we had to postpone this activity due to COVID-19. We are hoping to resume it soon depending on the infection situation.

**Amount raised: 1,035,000 yen**

#### ④ Supporting R&D and human resource development towards more sustainable digitization and nature

The R&D Center for Digital Nature, which was launched in 2020, is mainly engaged in R&D activities, development of human resources, and social implementation. The purpose of this crowdfunding campaign was to raise funds to cover the research expenses required to promote the R&D activities of the center. At the same time, this campaign has expanded our opportunities to connect to people interested in our research, which, we believe, means more than just securing research expenses.

**Amount raised: 11,635,000 yen**

## The University of Tsukuba Issued a Bond in October 2022

Reminding itself of the philosophy of its predecessor school, "Jita-Kyoei" (mutual prosperity for self and others), and its founding philosophy of being an "open university," and sharing them with society, the University of Tsukuba seeks to create new value for society by making the most of its interdisciplinary and international nature, which is its strength, and further demonstrating its functions as the core organization in Tsukuba Science City. We are also aware that we need to work to enhance these roles.

To this end, it is important for the university to exist as an independent management body, strengthen its governance system and ensure thorough engagement with society. With this awareness in mind, not only do we need to further brush up our ability to develop human resources and research, which is one of our missions as an institution of higher education, but also to realize social implementation of people and knowledge that can help create new value for society. At the same time, we are required to make proactive prior investments to make the above a reality, so that we can be needed even more by society as a whole, including businesses and financial institutions. This is the reason that we have decided to issue a University of Tsukuba bond to co-create a future society based on new

social value with society.

Funds raised through this bond will go toward projects that the university will carry out to co-create a future society based on new social value with society itself in line with the University of Tsukuba Vision 2030, which was established in April 2022.

Item	Outline
Bond name	First National University Corporation University of Tsukuba Bond (a sustainability bond, popularly named the "University of Tsukuba Social Value Creation Bond")
Amount issued	20 billion yen
Number of years	40 years
Coupon rate	1.619%
Issue data (Payment date)	Wednesday, October 19, 2022
Due date	Friday, March 17, 2062
Rating	AA+ (Rating and Investment Information, Inc.) AAA (Japan Credit Rating Agency, Ltd.)



A low-angle, close-up photograph of a teal-colored train. The word 'FUTURE' is printed in large, white, sans-serif capital letters along the side of the train's body. The train is moving, as indicated by the blurred background and the perspective. The sky is a pale, overcast blue. A dark blue horizontal bar is overlaid on the right side of the image, containing the text 'Initiatives for Strengthening Governance' in white.

## Initiatives for Strengthening Governance

# Governance Framework

Under the leadership of the president, the university decides on the roles and responsibilities of the internal organizations, and establishes appropriate decision-making procedures through the appointment of university executive officers and the Management Committee, which are systems unique to our university. In particular, the university has been making efforts to further strengthen governance and execute prompt business operations through the monitoring of compliance with the Code of Governance for National University Corporations.

## University Officers

- The president is selected by (1) the President Nomination and Inspection Committee and is appointed by the Minister of Education, Culture, Sports, Science and Technology. The President Nomination and Inspection Committee is composed of members selected from external members of the Governing Council and members selected from the Education and Research Council to reflect not only views on campus but also views of society at large.
- The executive directors (8 full-time and 2 part-time directors, including 3 female directors) assist the president in managing the affairs of the university corporation.
- The vice presidents (10 in total, 8 of whom are concurrent directors) assist the president, receive orders from the president, and manage school affairs.
- The university executive officers (15) support the president, receive orders from the president, and supervise specific duties under the university's unique system. The faculty heads (10), who head the faculty organizations, and persons (5) who are in charge of specific tasks are responsible for these duties.
- The auditors (2) are appointed by the Minister of Education, Culture, Sports, Science and Technology. In addition to auditing the university on a regular basis, the auditors cooperate in assessing the performance of the president at the annual meeting of the President Nomination and Inspection Committee.

\*Furthermore, although not a director of the university, the accounting auditor is appointed by the Minister of Education, Culture, Sports, Science and Technology, and conducts audits of the financial statements, business reports (financial segments) and financial results.

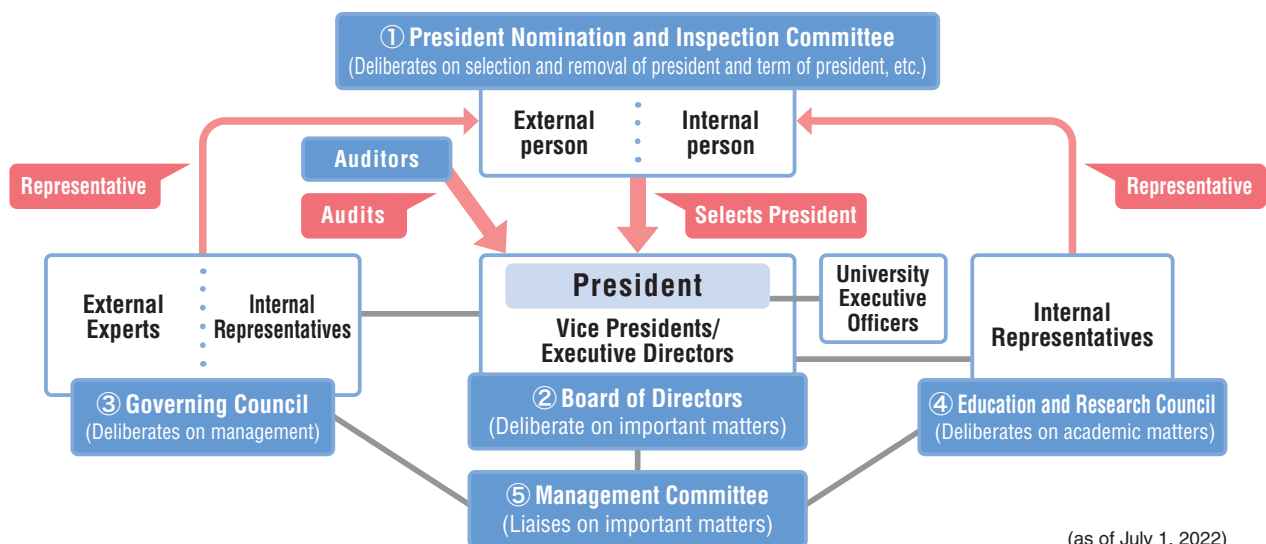


The 2022 leadership of the University of Tsukuba

## Deliberating Bodies of the University

- (2) The Board of Directors deliberates on important matters concerning administration, and meets once a month. It is comprised of the president and executive directors (10). The auditors, vice presidents and executive officers also attend board meetings.
- (3) The Governing Council is an organization which deliberates on important matters concerning management and meets seven times a year. It consists of the president, eight full-time executive directors appointed by the president, and 10 off-campus council members. To reflect the views of the wider society, the majority of the members are off-campus members. With other officers such as auditors, vice presidents, university executive officers and directors of administrative organizations also in attendance, the Governing Council serves as a venue where a wide range of opinions can be exchanged.
- (4) The Education and Research Council deliberates on important matters concerning education and research, and meets once a month. Comprised of the president, executive directors, vice presidents, heads of departments such as the university schools and colleges, and persons appointed by the president (total of 52 members), the Education and Research Council serves as a venue where the heads of all the organizations responsible for education and research at the University gather together.
- (5) The Management Committee, which is a system specific to our university, serves as a liaison and coordinating organization in important matters concerning the management of university affairs. It is comprised of the president, executive directors, vice presidents and university executive officers (31 members) and auditors also attend its meetings. All matters discussed by the above councils go through the Management Committee, which meets once a week to allow for flexible management. A characteristic of this committee is that the heads of the faculties, who are the heads of the teacher organizations, participate in decision-making from the initial stages as university executive officers of the university.

## Governance Framework



(as of July 1, 2022)



# Framework for Use and Management of Education and Research Funds

The university has established the Education and Research Funds Misuse Prevention Plan to prevent the wrongful use of education and research funds, and has taken various measures to eliminate the causes of misuse and promote appropriate use and management of education and research funds.

The university also strives to raise awareness about the prevention of misuse by implementing compliance education and awareness building activities for faculty and staff, and has established a framework for strengthening the organization to ensure that it can respond to risks at an early stage.

## Use and Management of Education and Research Funds

We have established a system of accountability in regard to the use and management of education and research funds, with the president as the chief administrative officer, and we have clarified roles and responsibilities under this system.

The general managing officer, who assists the Chief Executive Officer and supervises the organization-wide framework for preventative measures against misuse, organizes the Committee on Promotion of Preventative Measures Against Misuse of Education and Research Funds to identify the causes of misuse and establishes the National University Corporation University of Tsukuba Education and Research Funds Misuse Prevention Plan to eradicate the causes.

Based on this misuse prevention plan, the department officers take necessary measures and report the status of implementation to the general managing officer. They also implement compliance

education and awareness building activities within the respective departments that they manage and supervise, manage education and research funds, monitor the status of management and provide guidance for improvement.

The Office of Auditors monitors the progress and penetration of each measure from a university-wide perspective, and reports to the Chief Executive Officer and the Committee on Promotion of Preventative Measures Against Misuse of Education and Research Funds.

The auditors work in cooperation with the Office of Auditors and the Committee on Promotion of Preventative Measures Against Misuse of Education and Research Funds to check the status of development and operation of internal control over misuse prevention from an organization-wide perspective and express opinions about the results at Board of Directors and other meetings.

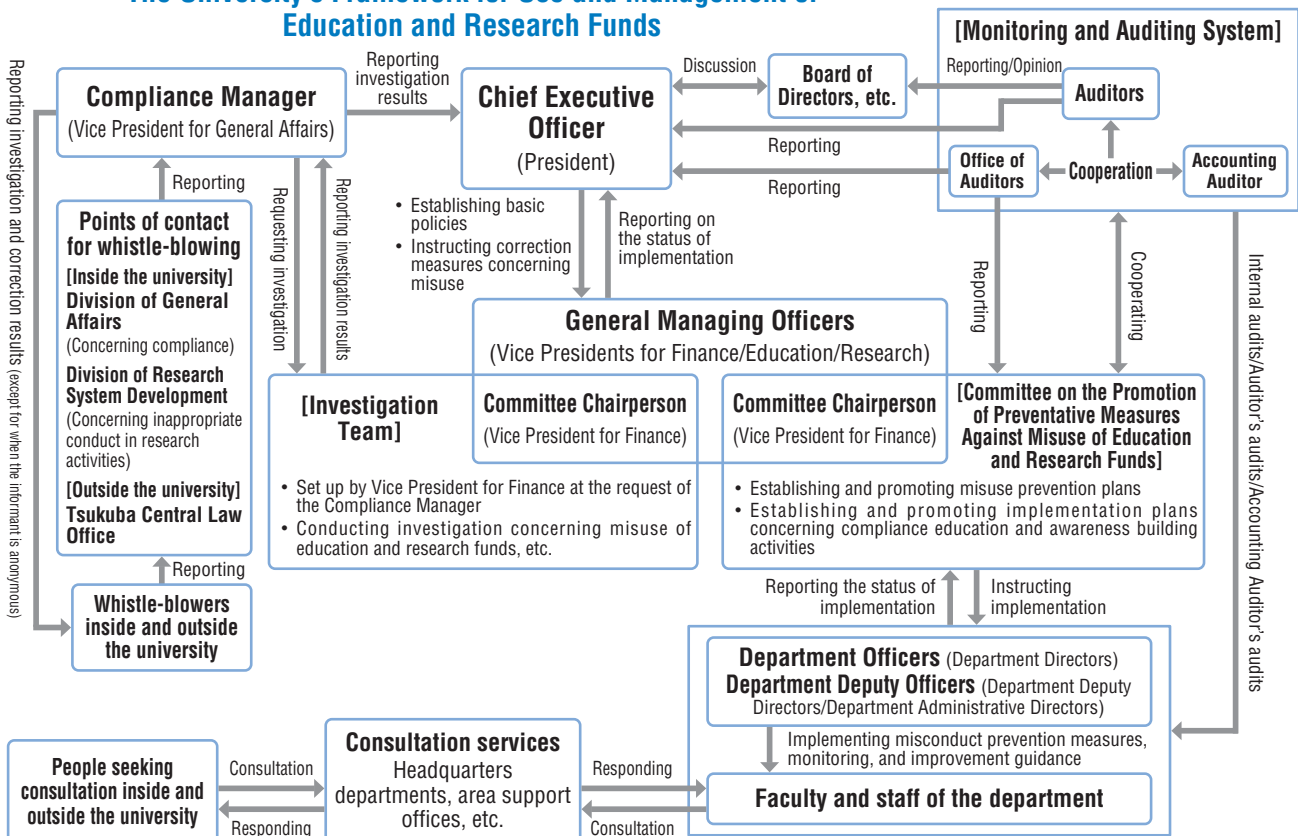
## Clarification and Unification of Accounting Rules, Compliance Education, and Awareness Building Activities

Accounting rules are reviewed in a timely manner based on actual conditions of business to ensure consistency in their operation.

To ensure all accounting rules are easy for faculty and staff to understand, we have prepared the Accounting Rules Handbook. In addition, we make efforts to educate and raise the awareness of faculty and staff by providing compliance education and

awareness building activities about the prevention of misuse for appropriate use and management of education and research funds through e-learning in line with the Implementation Plan Concerning Compliance Education and Awareness Building Activities Aimed at Prevention of Misuse of Education and Research Funds, established by the general managing officer.

### The University's Framework for Use and Management of Education and Research Funds



Initiatives to prevent the misuse of education and research funds at the university are also posted on the university website.  
<https://www.tsukuba.ac.jp/research/compliance-guideline/>

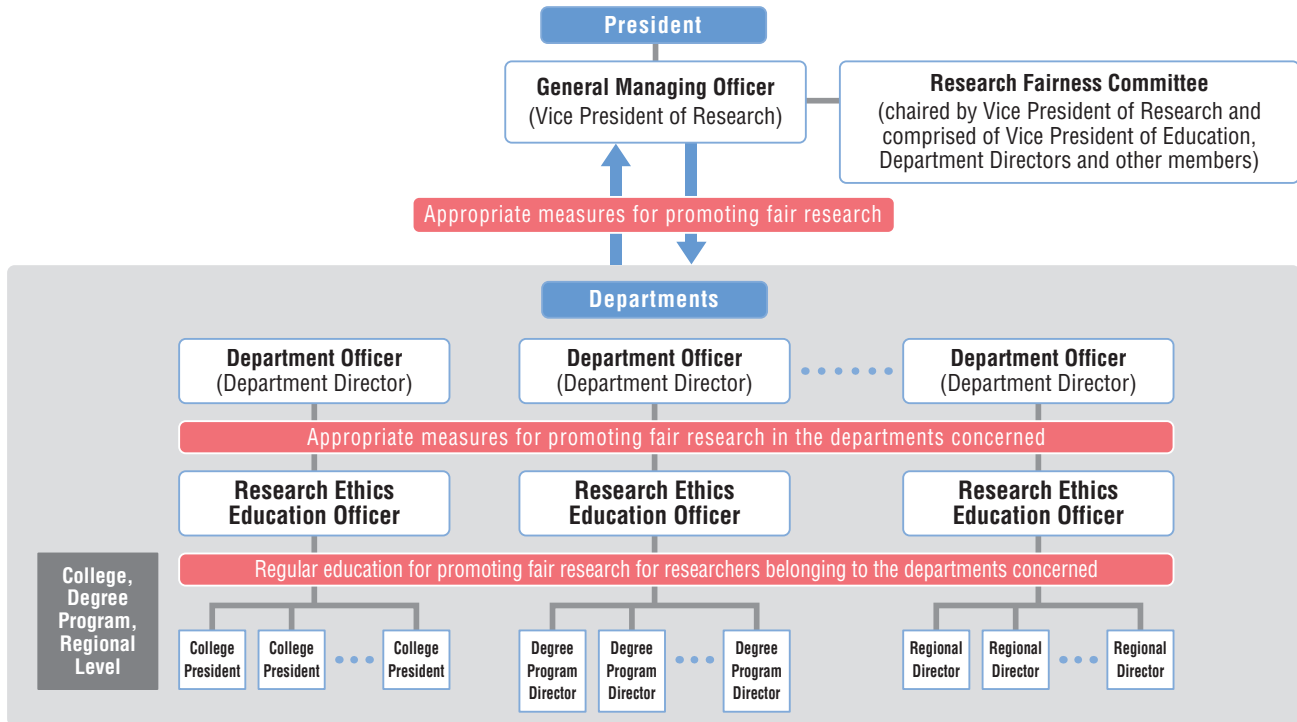
# Promoting Fair Research Activities

The University of Tsukuba has established the University of Tsukuba Research Fairness Rules to prevent inappropriate conduct and to put in place a framework for realizing fair research activities. The university has also established guidelines for research ethics education and the storage of research materials and strives to maintain fair research activities.

## Establishment of a Framework for Promoting Fair Research Activities

Based on the Guidelines for Responding to Misconduct in Research Activities (decided by the Minister of Education, Culture, Sports, Science and Technology), we established the University of Tsukuba Research Fairness Rules and a framework consisting of a general management officer (Vice President of Research), department officers (department directors), Research Ethics Education Officers (appointed by the director in each department), and the Research Fairness Committee.

### Framework for Promoting Fair Research Activities



## Guidelines for Research Ethics Education (March 2, 2017, decided by the President)

Research ethics education aims to ensure that researchers engage in responsible research activities by independently observing norms, thereby establishing trust in science and contributing to the sound development of science.

### Method of Study and Period of Implementation (University Faculty)

- Research ethics training at the time of recruitment
- Obligation to undertake regular study through Research Ethics e-learning (eL CoRE or eAPRIN)

- Regular participation in research ethics FD workshops
- Research ethics training based on characteristics of the research field

### Method of Study and Period of Implementation (Graduate Students)

- Research ethics training at the time of admission and advancement to specialist programs

## Guidelines for the Storage of Research Materials, etc. (March 2, 2017, decided by the President)

Researchers are required to store research materials to prove the validity of their activities in the event any doubt arises concerning research misconduct or to ensure the possibility of third-party verification.

Furthermore, because the results of research and the data on which they are based have the characteristics of public assets, it is the responsibility of each researcher and the university to properly manage and preserve research materials.

### Data and Material Subject to Storage Obligations, Storage Period and Storage Method

- The storage period for documents (documents, numerical data, images, etc.) is 10 years after their publication.
- The storage period of objects such as specimens (experimental samples and specimens) and equipment is five years after the publication of the paper concerned.

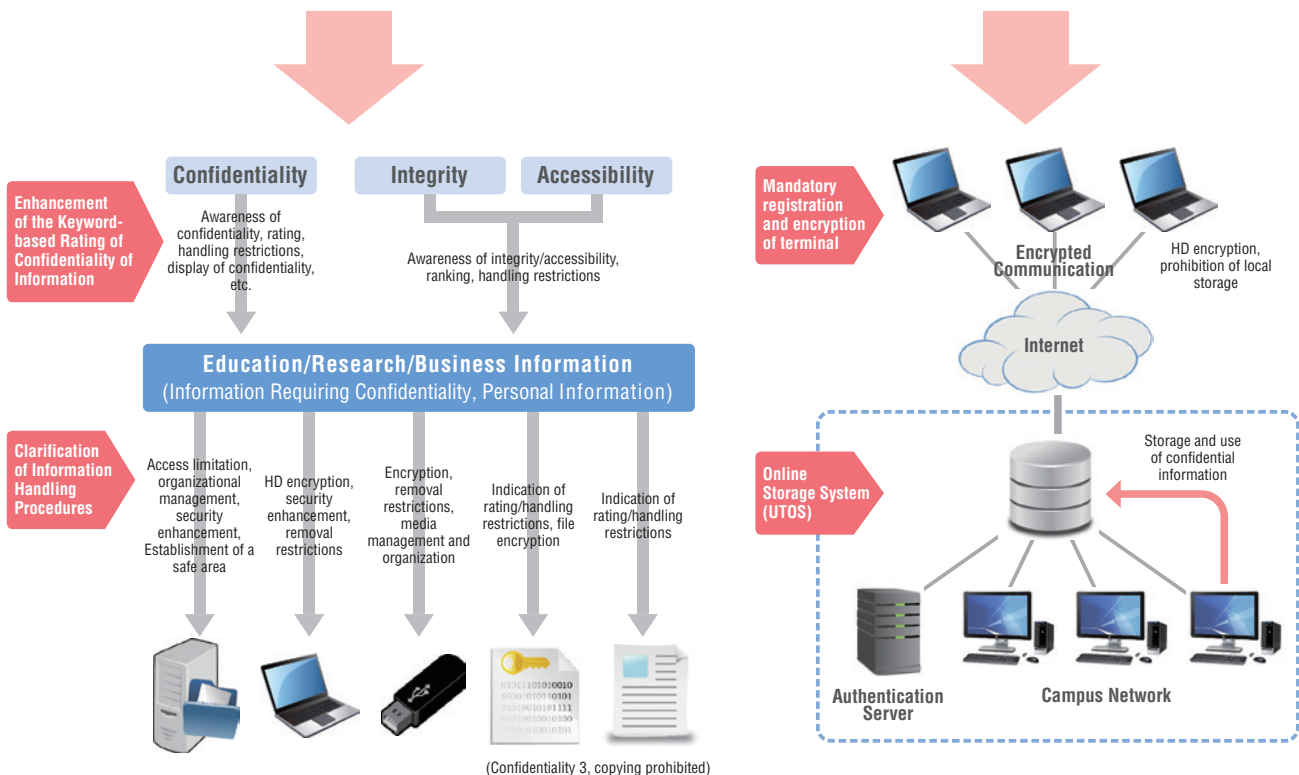
# Building an Information Security Management System

The University is making efforts to strengthen the security of its risk management and network system by making information security education mandatory and through audits. For example, we have established an information security management system that is recognized internationally in terms of rating the confidentiality of information and establishing a dedicated system for storing confidential information.

<b>Education</b>	<p>Information security education through e-learning and seminars for students and faculty</p> <ul style="list-style-type: none"> <li>○ Students and faculty: e-learning (INFOSS Information Ethics)</li> <li>○ Faculty, staff and students: information security seminars</li> <li>○ System administrators: security technology seminars</li> <li>○ Targeted email attack training</li> </ul>
<b>Risk Management</b>	<p>Information security audits</p> <ul style="list-style-type: none"> <li>○ Audits in cooperation with the Office of Auditors and the Information Security Risk Management Office on the status of systematic initiatives for information security and the status of incident response systems, etc. for five departments</li> <li>○ Follow up audits for departments audited the previous academic year</li> </ul>
<b>Network System Security</b>	<p>Initiatives to prevent incidents, minimize damage, and prevent damage from spreading</p> <p>In preparation for advanced cyber-attacks,</p> <ul style="list-style-type: none"> <li>○ Implemented detection and prevention of security invasions in the core network systems</li> <li>○ Periodically implemented vulnerability diagnosis using vulnerability check tools</li> <li>○ Monitored communication from inside to outside the university</li> </ul>
<b>Confidentiality Management</b>	<p>Enhanced the keyword-based rating of confidentiality of information and clarified information handling procedures according to the level of confidentiality</p> <ul style="list-style-type: none"> <li>○ Undertook the rating of information handled in work duties, and formulated and implemented information handling restrictions and handling procedures based on the information rating</li> </ul>
<b>Confidential Information System</b>	<p>Established a dedicated system for storing confidential information and operation rules requiring mandatory registration on user terminals and encryption of terminals</p> <ul style="list-style-type: none"> <li>○ Developed and put into operation the online storage system (UTOS) to prevent confidential information being taken off campus</li> <li>○ Enforced the rules for mandatory registration and encryption of UTOS user terminals</li> </ul>

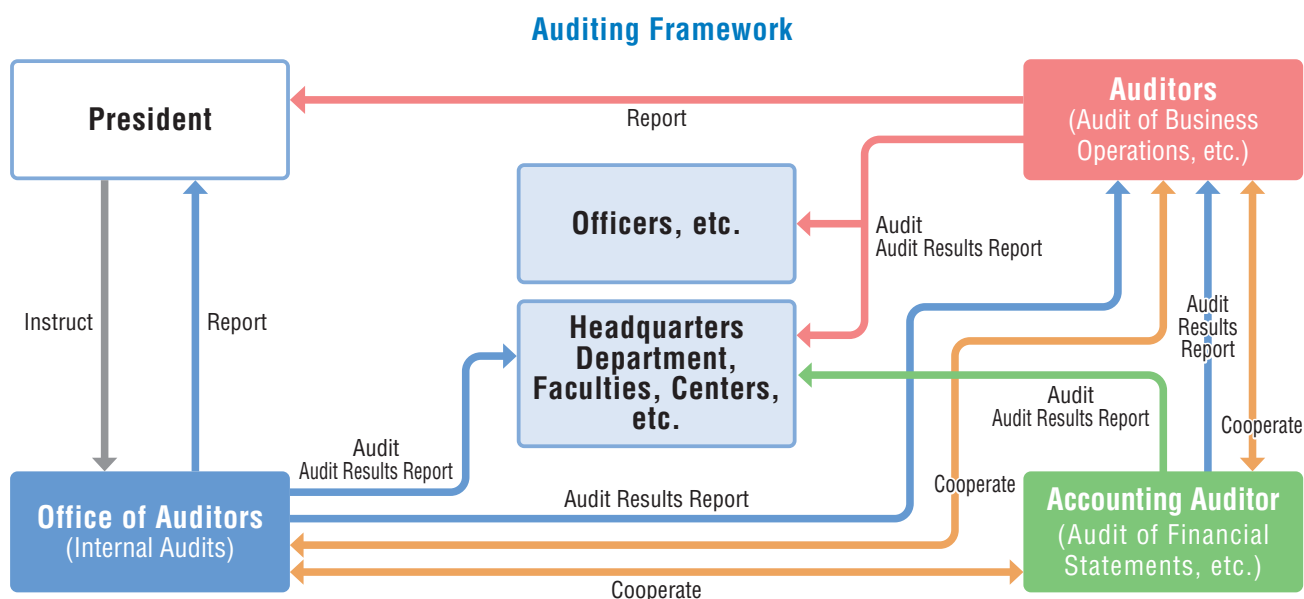
Annual information sessions for thorough implementation

Initiatives for Strengthening Governance



# Auditing Framework

The university cooperates with business operation audits of the auditors, internal audits of the Office of Auditors, and audits of the accounting auditor, and makes efforts to verify these to improve the quality of education and research, and maintain and improve the appropriateness, rationality, efficiency, and soundness of business operations.



## Audits by Auditors

### Audits

- In order to properly execute our duties, we will maintain a fair and unbiased attitude and an independent stance. At the same time, the purpose of this audit is to ensure proper and efficient operation of the corporation's business by communicating with officers, faculty, staff, accounting auditors, etc., collecting information, and improving the environment for auditing. In addition, by focusing on dialogue across the university and its organizations as a whole through audits, we promote the sharing of goals and issues, and provide necessary advice and proposals for solving issues.

### Audit Items

- Audits concerning business operations
- Audits of financial results, financial statements, and management of unused funds

### Audit Reports

- The auditors prepare a written opinion and present it to the president and other parties concerned regarding audits related to business operations.

## Audits by Office of Auditors

### Audits

- The Office of the Auditors investigates and verifies the status of execution of business operations from the viewpoint of legality, rationality and efficiency from a fair and objective standpoint, and based on its results, provides information as well as advice, suggestions and support for improvement in business operations.

### Audit Items

- Audit concerning accounting operations (including monitoring of the Education and Research Funds Misuse Prevention Plan and status of staff work), public research funds, and information security
- Cooperation with auditors' audits

### Audit Reports

- The Office of Auditors prepares an audit report and presents it to the president. The auditors also disseminate their findings and precautions to be taken in the audit to thoroughly prevent similar cases from recurring, and they carry out follow-up audits the following academic year.

## Audits by the Accounting Auditor

### Audits

- The financial statements and reports on financial results are audited by an accounting auditor appointed by the Minister of Education, Culture, Sports, Science and Technology. In addition, the accounting auditor holds meetings as appropriate with the president, auditors, and the Office of the Auditors to share information on issues in accounting procedures and other matters.

# Financial Conditions



# Financial Results for AY2021

## B/S: Balance Sheet

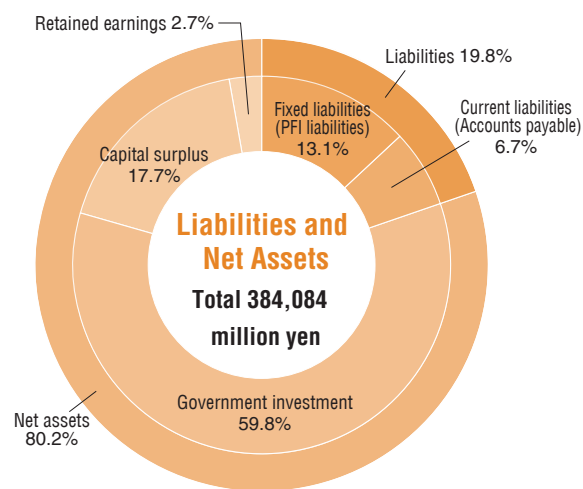
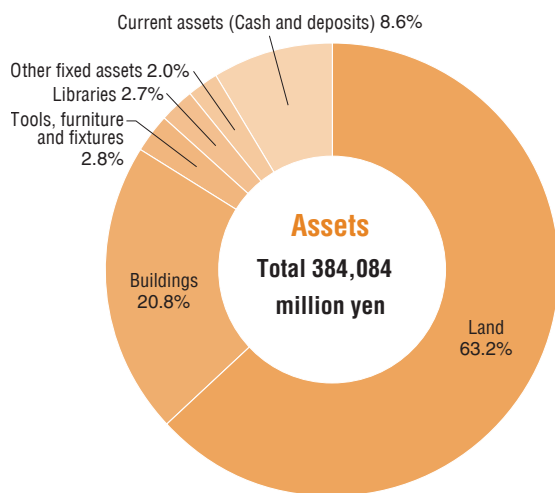
A balance sheet presents the financial conditions of a corporation on the day of settlement. The liabilities and net assets indicate the breakdown of the procured funds while the assets show how the procured funds have been managed.

### 《Characteristics of the University of Tsukuba》

Fixed assets, such as land and buildings, account for 84% of the assets of the university. Although 33.9% of its liabilities is represented by borrowings, lease liabilities and PFI liabilities, the university stabilizes its financial management through systematic repayment. Net assets occupy 80.2% of the total of liabilities and net assets, of which 59.8% is accounted for by government investment, such as land and buildings contributed in kind by the national government.

(In millions of yen)

Item	AY2020	AY2021	Change	Item	AY2020	AY2021	Change
<b>Assets</b>	<b>383,453</b>	<b>384,084</b>	<b>631</b>	<b>Liabilities</b>	<b>77,119</b>	<b>76,133</b>	<b>▲986</b>
(Main Items)				(Main Items)			
Land	243,263	242,563	▲700	Operational grants liabilities	1,243	—	▲1,243
Buildings	83,279	79,756	▲3,523	Borrowings	3,375	5,925	2,550
Tools, furniture and fixtures	11,867	10,668	▲1,199	Lease liabilities	3,637	2,190	▲1,447
Libraries	10,377	10,388	12	PFI liabilities	19,474	17,732	▲1,742
Construction in progress	921	3,074	2,152	Donation liabilities	5,681	6,229	548
Investment in securities	3,600	4,300	700	Sponsored research/ sponsored operations liabilities	1,988	2,480	492
Cash and deposits	19,783	23,041	3,258	Deposits received	1,873	2,256	383
Accounts receivable	7,967	7,946	▲21	Contra-accounts for assets	25,254	24,857	▲397
				Accounts payable	12,345	12,102	▲242
				<b>Net Assets</b>	<b>306,334</b>	<b>307,951</b>	<b>1,617</b>
				(Main Items)			
				Government investment	230,333	229,628	▲705
				Capital surplus	69,666	67,930	▲1,736
				Retained earnings	6,335	10,393	4,058
				Reserve funds carried forward from previous Mid-term Plan period	2,421	2,421	0
				Reserve funds	2,183	3,496	1,313
				Unappropriated retained earnings (or undisposed loss) at the end of the term	1,731	4,476	2,744



### Total assets: 384,084 million yen (year-on-year increase of 631 million yen ↑)

The main factors contributing to the increase were increases in the amount of construction in progress (renovation of Building B of the University Hospital, etc.) and cash and deposits (a reduction in personnel expenses and management efforts of the University Hospital, such as an increase in delicate operations, etc.). Buildings and "Tools, furniture and fixtures" decreased due to a reduction in the amount of accumulated depreciation of fixed assets (total amount of expenses that have been booked as depreciation in the past) and for other reasons.

### Total liabilities: 76,133 million yen (year-on-year decrease of 986 million yen ↓)

The main factor contributing to the decrease was repayment of lease liabilities (information systems, etc.) and PFI liabilities (redevelopment of the hospital). The amount of operational grants liabilities decreased due to repayment in the accounting treatments in the final year of the Third Mid-term Goals Period.

### Total net assets: 307,951 million yen (year-on-year increase of 1,617 million yen ↑)

The main factor contributing to the increase was a rise in retained earnings (reserve funds/unappropriated retained earnings at the end of the term) resulting from management efforts, etc. The amount of government investment decreased due to sale of the old staff quarters site and capital surplus decreased due to an increase in the amount of accumulated depreciation of fixed assets.

## P/L: Profit and Loss Statement

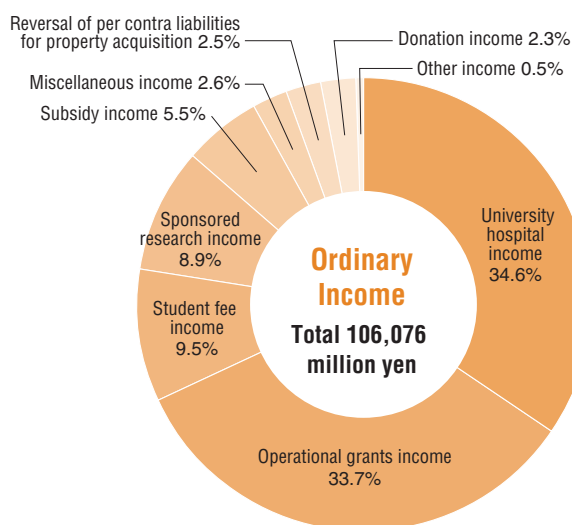
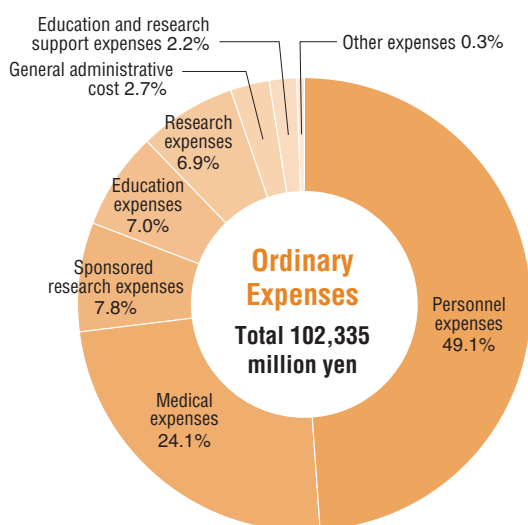
This statement indicates a corporation's operating conditions during a given accounting period (fiscal year) by showing the amount of income less expenses as profit.

### 《Characteristics of the University of Tsukuba》

The university's ordinary expenses exceeded 100 billion yen for the first time in AY2021. Personnel expenses and medical expenses accounted for 49.1% and 24.1%, respectively. Of the ordinary income, 33.7% and 34.6% were occupied by operational grants income and university hospital income, respectively.

(In millions of yen)

Item	AY2020	AY2021	Change	Item	AY2020	AY2021	Change
Ordinary Expenses	98,984	102,335	3,350	Ordinary Income	100,660	106,076	5,416
(Main Items)				(Main Items)			
Education expenses	7,256	7,171	▲ 85	Operational grants income	35,259	35,728	468
Research expenses	6,711	7,019	309	Student fee income	10,006	10,056	50
Education and research support expenses	2,113	2,214	101	University hospital income	34,895	36,690	1,796
Medical expenses	23,252	24,670	1,418	Sponsored research income	3,714	6,709	2,994
Sponsored research expenses	2,982	5,572	2,590	Joint research income	1,982	1,787	▲ 196
Joint research expenses	1,701	1,514	▲ 188	Sponsored operations income	919	944	26
Sponsored operations expenses	847	863	16	Subsidy income	5,102	5,842	740
Personnel expenses	50,910	50,205	▲ 704	Donation income	2,626	2,401	▲ 225
General administrative costs	2,794	2,763	▲ 30	Reversal of per contra liabilities for property acquisition	2,614	2,677	63
Financial costs	327	308	▲ 20	Miscellaneous income	2,670	2,744	74
Extraordinary loss	120	133	13	Extraordinary profit	107	762	654
Gross income	1,731	4,476	2,744	Reversal of reserve	69	106	37



### Ordinary expenses: 102,335 million yen (year-on-year increase of 3,350 million yen ↑)

The main factors contributing to the increase were increases in sponsored research expenses (Moonshot Research and Development Program among others) and medical expenses (relaxation of restrictions on medical activities caused by the spread of COVID-19), etc.

The amount of personnel expenses decreased due to renewed placement of faculty and staff (management strengthening measures (personnel strategy)), etc.

### Ordinary income: 106,076 million yen (year-on-year increase of 5,416 million yen ↑)

The main factors contributing to the increase were increases in student fee income (a special measure concerning acceptance of international students among others), university hospital income, sponsored research income, subsidy income, miscellaneous income, etc. (management efforts, etc.).

The amount of donation income decreased as a result of emergency financial support provided to students in response to the spread of COVID-19 in the previous academic year.

### Gross income: 4,476 million yen (year-on-year increase of 2,744 million yen ↑)

(Ordinary income + Extraordinary income + Reversal of reserve) – (Ordinary expenses + Extraordinary loss)

## Financial Financial Conditionsonditions

National university corporations are expected to play core roles in Japan's creation of innovations while competing with leading universities around the world by promoting world-class education and research.

To make sure that national universities are able to meet social demand, it is important for them to establish a stable financial base. With the goal of strengthening its financial base through diversification of internal financial resources, the University of Tsukuba has formulated management strengthening measures (see page 39) based on a strategy for obtaining external funds, the development of profitable businesses, and a personnel strategy for the Third Mid-term Goals Period, and has

accordingly implemented various initiatives, such as placing greater emphasis on attracting large-scale competitive research funds, extension programs and fund programs, and strategic and efficient allocation of human resources.

The figures and tables below show how the university's ordinary income and ordinary expenses changed during the six years of the Third Mid-term Goals Period. Both the ordinary income and ordinary expenses increased as a result of acquisition of external funds and expansion of business associated with strengthening of the medical treatment functions of the University Hospital and other changes.

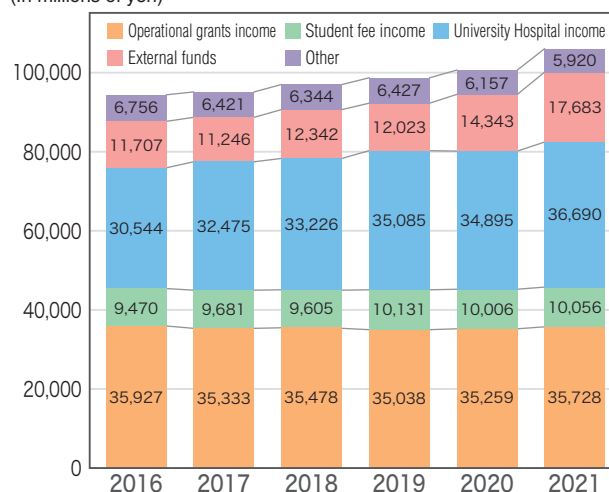
### Ordinary Income

(In millions of yen)

Resource Classification	AY2016	AY2017	AY2018	AY2019	AY2020	AY2021
Operational grants income	35,927	35,333	35,478	35,038	35,259	35,728
Student fee income	9,470	9,681	9,605	10,131	10,006	10,056
University hospital income	30,544	32,475	33,226	35,085	34,895	36,690
External funds	11,707	11,246	12,342	12,023	14,343	17,683
Sponsored research income	4,911	4,156	4,695	4,111	3,714	6,709
Joint research income	1,194	1,253	1,587	1,927	1,982	1,787
Sponsored operations income	1,406	1,353	1,320	1,194	919	944
Subsidy income	2,143	2,320	2,244	2,106	5,102	5,842
Donation income	2,053	2,164	2,496	2,685	2,626	2,401
Other*	6,756	6,421	6,344	6,427	6,157	5,920
<b>Total</b>	<b>94,404</b>	<b>95,156</b>	<b>96,995</b>	<b>98,704</b>	<b>100,660</b>	<b>106,076</b>

\* Other: Facility expense grants income, reversal of per contra liabilities for property acquisition, financial income and miscellaneous income

(In millions of yen)



**Interannual variability trends:** The operational grants income remained roughly flat while ordinary income as a whole was on the increase as the university hospital income increased due to a greater level of sophistication of the functions of the hospital, and the sponsored research income, joint research income, subsidy income and donation income rose as a result of acquisition of external funds. The ordinary income increased by 12.4% in the final year (AY2021) of the Third Mid-term Goals Period compared to the first year (AY2016).

### Ordinary Expenses

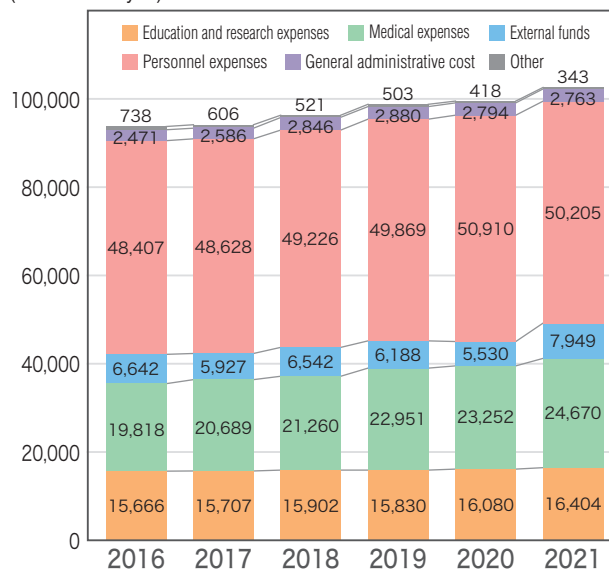
(In millions of yen)

Resource Classification	AY2016	AY2017	AY2018	AY2019	AY2020	AY2021
Education and research expenses	15,666	15,707	15,902	15,830	16,080	16,404
Education expenses	6,477	6,743	6,833	6,985	7,256	7,171
Research expenses	6,846	6,771	6,756	6,572	6,711	7,019
Education and research support expenses	2,343	2,193	2,313	2,273	2,113	2,214
Medical expenses	19,818	20,689	21,260	22,951	23,252	24,670
External funds	6,642	5,927	6,542	6,188	5,530	7,949
Sponsored research expenses	4,261	3,568	3,951	3,413	2,982	5,572
Joint research expenses	1,085	1,126	1,391	1,682	1,701	1,514
Sponsored operations expenses	1,296	1,233	1,200	1,093	847	863
Personnel expenses	48,407	48,628	49,226	49,869	50,910	50,205
General administrative cost	2,471	2,586	2,846	2,880	2,794	2,763
Other* <sup>2</sup>	738	606	521	503	418	343
<b>Total</b>	<b>93,742</b>	<b>94,143</b>	<b>96,297</b>	<b>98,221</b>	<b>98,984</b>	<b>102,335</b>

\*1 Subsidy and donation expenses are included in educational expenses, research expenses, personnel expenses, etc.

\*2 Other: Financial cost and miscellaneous loss

(In millions of yen)



**Interannual variability trends:** The education and research expenses remained roughly flat while ordinary expenses as a whole were on the increase as the medical expenses increased due to a greater level of sophistication of the functions of the hospital, and the sponsored research expenses and joint research expenses rose as a result of acquisition of external funds. The ordinary expenses increased by 9.2% in the final year (AY2021) of the Third Mid-term Goals Period compared to the first year (AY2016). At the same time, the size of the university's business exceeded 100 billion yen for the first time in AY2021.



# Costs and Financial Resources Concerning Education and Research

Education and research activities are covered by the education expenses and research expenses shown in the financial statement as well as by education and research support expenses used to support and manage all education and research at the university, general administrative costs, personnel expenses for faculty and

staff working in education and research, and other expenses.

The education-related expenses and research-related expenses below show the extent to which funds are spent on our university's education and research, respectively.

## Costs Related to Education [Education-related Expenses]

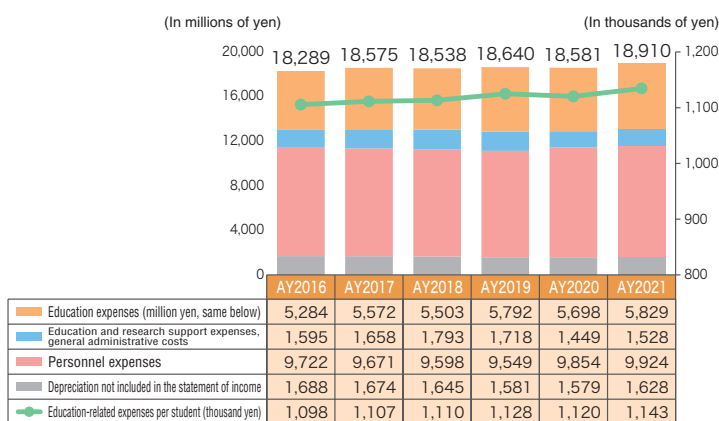
Education-related expenses in AY2021 were approximately 18.9 billion yen (excluding the University Hospital segment and affiliated school segment), working out to roughly 1.14 million yen per student.

As the annual tuition fee per student is about 530,000 yen, the

university is investing more into education-related expenses than it is receiving in annual tuition fees to develop people to play a role on the global stage.

These expenses are covered by various sources of revenue, primarily operational grants and student fee income.

### Breakdown of Expenses



### Breakdown of Financial Resources

Resource Classification	AY2016	AY2017	AY2018	AY2019	AY2020	AY2021
Operational grants*1	14,864	15,230	15,331	15,230	15,028	15,380
External funds	1,518	1,534	1,320	1,401	1,478	1,743
Donations	356	382	401	466	733	421
Subsidies	1,162	1,153	919	935	745	1,322
Facility maintenance expenses	947	957	1,020	1,220	1,255	839
Other*2	960	854	867	788	819	948
<b>Total</b>	<b>18,289</b>	<b>18,575</b>	<b>18,538</b>	<b>18,640</b>	<b>18,581</b>	<b>18,910</b>

\*1 Operational grants: Operational grants, student fee income, miscellaneous income, etc.

\*2 Other: Donations in kind, borrowings, appropriated surplus, etc.

## Costs Related to Research [Research-related Expenses]

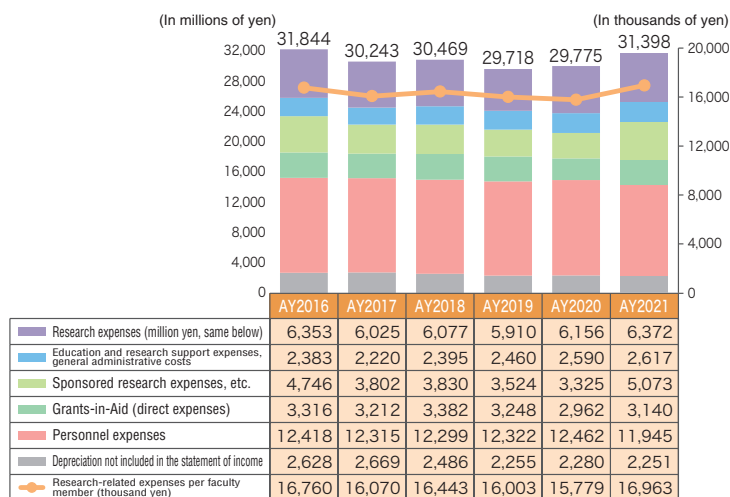
Research-related expenses in AY2021 were approximately 31.4 billion yen (excluding the University Hospital segment and affiliated school segment), working out to roughly 16.96 million yen per faculty member.

To further invigorate research activities of the university, we have been implementing initiatives to acquire large-scale competitive research funds through the strategy for obtaining external funds in

the management strengthening measures and have been seeking to attract subsidies and research funds from private companies for joint research and sponsored research expenses, among others.

These research-related expenses were covered by various sources of revenue, primarily operational grants and external funds.

### Breakdown of Expenses



### Breakdown of Financial Resources

Resource Classification	AY2016	AY2017	AY2018	AY2019	AY2020	AY2021
Operational grants*1	14,937	14,903	14,703	14,828	15,450	15,037
External funds	13,838	12,586	13,160	12,538	11,745	13,672
Donations	827	854	983	965	799	814
Sponsored research expenses, etc.	6,061	5,099	5,184	4,923	4,518	6,254
Subsidies	1,533	1,494	1,371	995	1,142	828
Grants-in-Aid for Scientific Research	3,694	3,587	3,773	3,678	3,404	3,589
Indirect expenses	1,723	1,552	1,850	1,976	1,882	2,186
Facility maintenance expenses	1,699	1,458	1,346	1,327	1,574	1,522
Other*2	1,370	1,297	1,261	1,025	1,006	1,167
<b>Total</b>	<b>31,844</b>	<b>30,243</b>	<b>30,469</b>	<b>29,718</b>	<b>29,775</b>	<b>31,398</b>

\*1 Operational grants: Operational grants, student fee income, miscellaneous income, etc.

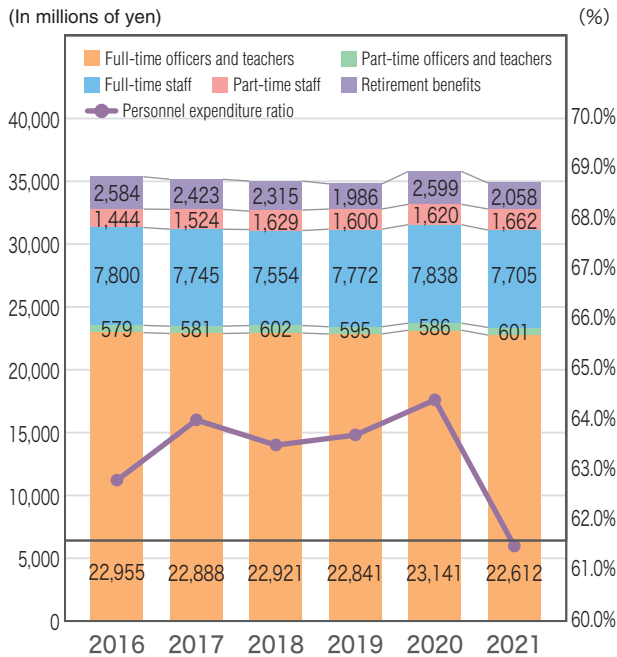
\*2 Other: Donations in kind, borrowings, appropriated surplus, etc.

## Personnel Expenses

Total personnel expenses for AY2021 amounted to approximately 50.2 billion yen (university segment: 34.6 billion yen, hospital segment: 15.6 billion yen) and recorded a year-on-year decrease of approximately 700 million yen in the Third Mid-term Goals Period

as a result of strategic and efficient allocation of human resources and other initiatives based on the personnel strategy set out in the management strengthening measures.

### Changes in Personnel Expenses (University Segment)

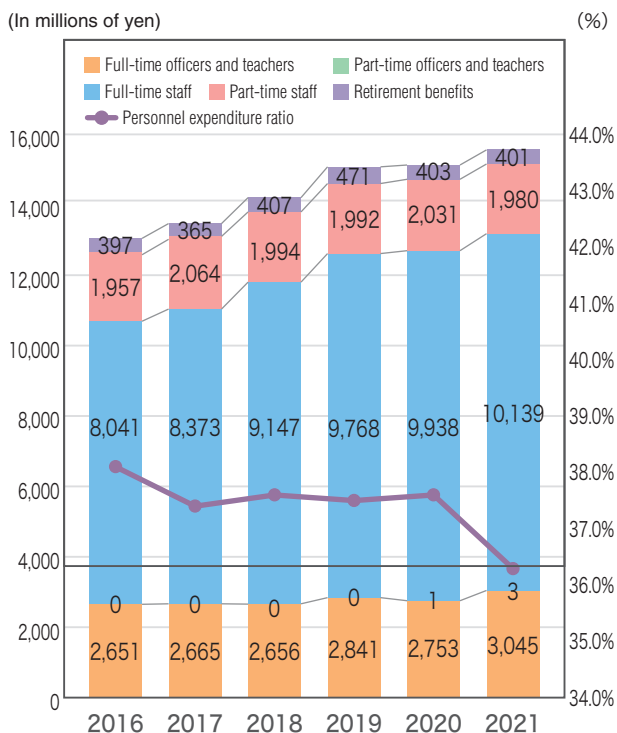


(In millions of yen)

Resource Classification	AY2016	AY2017	AY2018	AY2019	AY2020	AY2021
Operational grants* <sup>1</sup>	33,450	33,396	33,208	33,055	34,019	33,078
External funds	1,739	1,680	1,703	1,718	1,764	1,559
Donations	549	540	638	726	729	635
Subsidies	1,122	1,100	1,015	937	980	870
Indirect expenses	67	40	51	55	55	53
Other** <sup>2</sup>	172	85	110	23	0	0
<b>Total</b>	<b>35,361</b>	<b>35,161</b>	<b>35,021</b>	<b>34,795</b>	<b>35,784</b>	<b>34,637</b>
<b>Personnel expenditure ratio</b>	<b>62.8%</b>	<b>64.0%</b>	<b>63.5%</b>	<b>63.7%</b>	<b>64.4%</b>	<b>61.5%</b>

**Interannual variability trends:** The personnel expenses decreased as a result of the personnel strategy aimed at promoting strategic allocation of human resources, increasing use of financial resources like sponsored research expenses for employment, and so on. In particular, the personnel expenses accounted for a substantially decreased proportion of the operating expenses (ratio of personnel expenses) in AY2021 as operational efficiency improved and the largest amount of operating expenses ever was booked.

### Changes in Personnel Expenses (Hospital Segment)



(In millions of yen)

Resource Classification	AY2016	AY2017	AY2018	AY2019	AY2020	AY2021
Operational grants* <sup>1</sup>	2,337	2,035	2,044	2,065	1,664	2,258
University hospital revenue	9,909	10,579	11,182	12,007	12,386	12,156
External funds	763	847	972	1,000	1,076	1,154
Donations	686	759	774	807	837	910
Subsidies	68	78	97	85	188	217
Indirect expenses	10	10	101	108	51	26
Other** <sup>2</sup>	37	7	6	1	0	0
<b>Total</b>	<b>13,046</b>	<b>13,467</b>	<b>14,204</b>	<b>15,073</b>	<b>15,126</b>	<b>15,568</b>
<b>Personnel expenditure ratio</b>	<b>38.1%</b>	<b>37.4%</b>	<b>37.6%</b>	<b>37.5%</b>	<b>37.6%</b>	<b>36.3%</b>

**Interannual variability trends:** The personnel expenses increased as a result of strengthening of the medical treatment functions of the hospital, as well as demonstration of its functions as Ibaraki Prefecture's only Special-Purpose Hospital and Advanced Emergency and Critical Care Center. At the same time, however, the ratio of personnel expenses decreased in AY2021 because the operating expenses significantly increased as restrictions on medical activities caused by the spread of COVID-19 were relaxed, resulting in a rise in medical expenses.

\*1 Operational grants: Operational grants, student fee income, miscellaneous income, etc.

\*2 Other: Reserve funds carried forward from previous Mid-term Plan period

\*3 Ratio of personnel expenses = Personnel expenses / Operating expenses (total amount of education expenses, research expenses, medical expenses, education and research support expenses, sponsored research expenses, joint research expenses, sponsored operations expenses and personnel expenses)

# Features of the University of Tsukuba Compared to Other Universities

## Comparison Based on Financial Indicators

Financial indicators are a tool for ascertaining and assessing the financial status and management conditions.

In the Third Mid-term Goals Period, the “Three Frameworks for Priority Support” were introduced to provide more precise support to individual national universities according to the orientation of functional enhancement.

Each university selected one of the three frameworks (Priority Support 1: promoting human resources and research projects that meet local needs, Priority Support 2: promoting the formation of

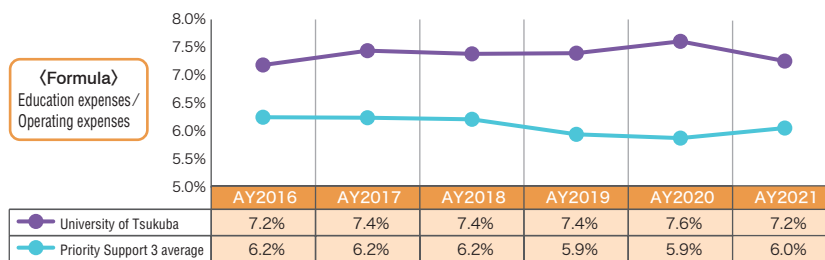
excellent R&D centers and networks in respective fields, and Priority Support 3: promoting excellent educational and research activities that can compete with those of the world’s leading universities).

By conducting financial indicator-based comparison and analysis of the University of Tsukuba and the other universities that selected the same framework (\*Priority Support 3) using financial data published by these universities, we seek to identify the trends, strengths, weaknesses, and positions of our university, and accordingly work to strengthen our financial base.

\* Priority Support 3 Universities: Hokkaido University, Tohoku University, University of Tokyo, Tokai National Higher Education and Research System, Kyoto University, Osaka University, Kyushu University, Chiba University, Tokyo University of Agriculture and Technology, Tokyo Institute of Technology, Hitotsubashi University, Kanazawa University, Kobe University, Okayama University, Hiroshima University, and University of Tsukuba (16 universities)

### Development and Activity

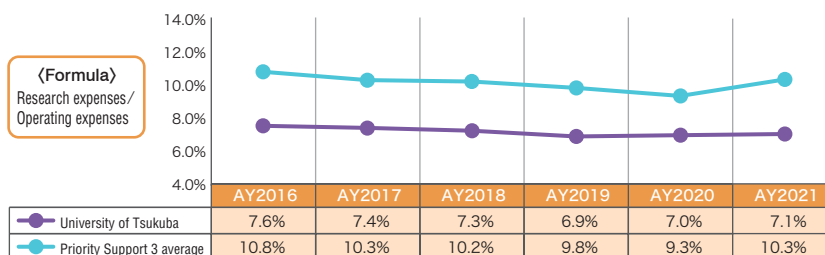
#### Ratio of education expenses to operating expenses Higher values mean more expenses used in educational activities.



#### University of Tsukuba trends

The ratio of education expenses tends to high because the university owns a wide range of educational facilities, student residences, etc. on its extensive campus, provides quality education through its affiliated schools (11 schools), and implements initiatives to lead Japanese and regional education.

#### Ratio of research expenses to operating expenses Higher values mean more expenses used in research activities.

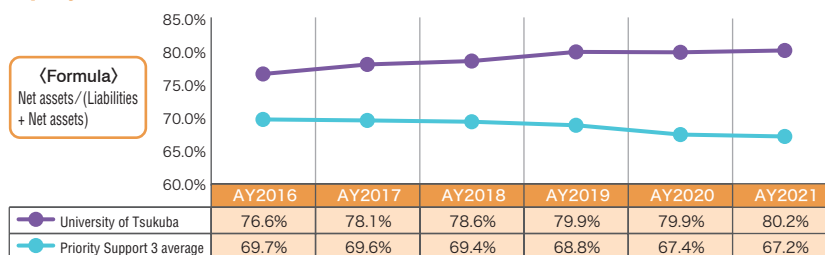


#### University of Tsukuba trends

Although the ratio of research expenses tends to be below the Priority Support 3 Universities average, the university has been promoting a strategy for obtaining external funds to diversify its financial resources to avoid relying only on operational grants as part of its management strengthening efforts, resulting in an increase in the amount of external funds acquired (up 4.4% from the previous year).

### Financial Health and Stability

#### Equity ratio Higher values mean greater financial health.

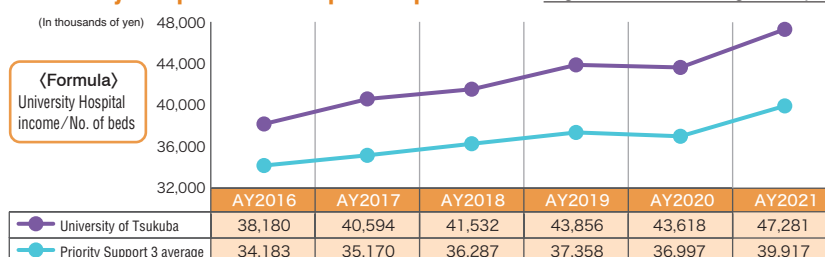


#### University of Tsukuba trends

The liabilities were on the decrease as the university regularly repaid PFI liabilities for the University Hospital Redevelopment Project, information system lease expenses, etc. In this way, stable financial management helped reduce the ratio of liabilities and raise the equity ratio.

### Profitability

#### University Hospital income per hospital bed Higher values mean greater profitability.



#### University of Tsukuba trends

The university hospital income increased due to rises in the numbers of inpatients, surgeries, etc. while the income per bed was also on the increase as the average length of stay reduced due to improved quality of medical care and appropriate bed control was implemented for efficient management of hospital beds.

# Major Characteristics of National University Corporations' Accounting

Due to their public nature, national university corporations are not profit-oriented and do not aim to achieve independent profitability. As they receive financial support from the national government, they apply unique accounting treatments that are

different from corporate accounting in accordance with the Accounting Standards for National University Corporations, which are based on standard business accounting practices with necessary modifications.

## Balancing of Profit and Loss

National university corporations are responsible for reporting accounting information concerning the financial status, management conditions, and use of financial resources entrusted to them for education and research purposes to Japanese citizens, who entrust them with the resources, and other stakeholders, using financial statements, and are required to disclose the information in an appropriate, easy-to-understand manner.

To this end, the Accounting Standards for National University Corporations require national university corporations to balance profit and loss when carrying out operations in line with the Mid-term Plan. In more specific terms, they conduct the following accounting treatments:



## Income Recognition

As with corporate accounting, national university corporations apply the realization basis for income recognition. However, the realization is recognized according to criteria specific to national university corporations.

For example, when operational grants are provided, they are first recognized as liabilities rather than income. This is based on the idea that national university corporations receive funds required only to carry out their business operations, and by accepting the funds, they are obliged to carry out such business operations. The same also applies to subsidies and donations received.

Business operations are carried out by investing in education and research, etc., and when performance obligations for the received funds have been satisfied, income is deemed to be realized and the relevant liabilities are gradually reclassified into income as the operations progress.

Thus, in national university corporation accounting, income does not represent revenue or sales amounts, but represents each revenue source for expenses that are required to carry out business operations.

## Recording of the Same Amount of Income as Depreciation Expenses

As with corporate accounting, when a national university corporation purchases a depreciable asset, the amount required for acquisition is not included in the cost for the year of acquisition, but is distributed over the depreciation period of the asset.

When a depreciable asset is purchased, there will be a difference between the income used to finance the purchase of the asset and the cost (depreciation expense) recorded in the current period. However, from the perspective of properly showing the business operation status of national university corporations, the same amount of income as the depreciation expense is recorded depending on the source of funds used to finance the purchase of the depreciable asset, which is unique to national university corporation accounting.

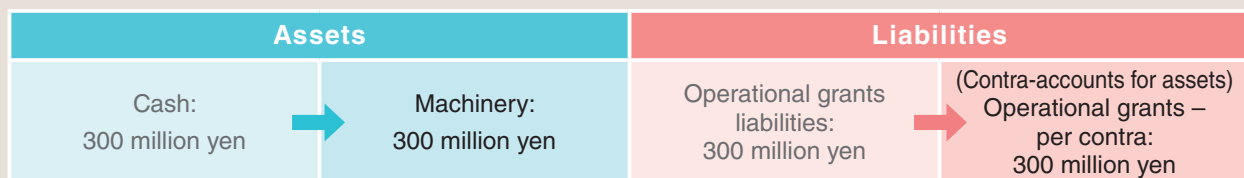
For example, when the university purchases depreciable assets

using operational grants as financial resources, operational grants liabilities (liability account) are initially transferred to another liability account (contra-accounts for assets) known as operational grants – per contra (see Figure 1). Then, operational grants – per contra are withdrawn according to the depreciation rate, and the same amount of income as depreciation expenses is recorded as a reversal of per contra liabilities for property acquisition (See Figure 2).

As a result, the expenses and income for each academic year become equal by offsetting the impact of asset acquisition on profit and loss.

When appropriated surplus (reserves of past profits) is used as a financial resource for an expense, the same amount as the expense is transferred to reversal of appropriated surplus to offset the impact on profit and loss as with the case of asset acquisition.

**Figure 1: At the time of purchase of assets (machinery worth 300 million yen (operational grants))**



**Figure 2: At the time of depreciation**

	Expenses	Income	Profit/Loss
1st year	Depreciation expenses: 100 million yen	Reversal of per contra liabilities: 100 million yen	±0 yen
2nd year	Depreciation expenses: 100 million yen	Reversal of per contra liabilities: 100 million yen	±0 yen
3rd year	Depreciation expenses: 100 million yen	Reversal of per contra liabilities: 100 million yen	±0 yen

## System for Exclusion from the Profit and Loss Statement

Although individual national university corporations establish their own individuality for autonomous, independent university management, some of their operations, such as higher education and academic research, are conducted on the premise that the national government should bear the ultimate responsibility for

them.

This is the reason that some costs that are deemed not to be within the scope of operational responsibilities of national university corporations are treated as exceptions through exclusion from the costs in the profit and loss statement.

### Exclusion from the Profit and Loss Statement

Financial resources for maintenance and renewal of buildings and facilities are provided by the government to ensure reliable implementation of necessary operations, including education and research.

Therefore, if no income is expected from some assets and they are designated by the government as depreciable assets not included in the profit and loss statement, they are regarded as being excluded from the scope of operational responsibilities

of the national university corporation, and the depreciation is not treated as expenses of the national university corporation.

Specifically, the accumulated depreciation of such assets is not recorded as expenses (depreciation expenses), but recorded as accumulated depreciation not included in the profit and loss statement by directly reducing the capital surplus as a decrease in the substantial financial basis of the national university corporation (Figure 3).

**Figure 3: [Balance sheet] Depreciation of a building built with facility maintenance expenses**

Assets	Capital surplus	Profit and loss statement
Building: 10 billion yen Accumulated depreciation: -1 billion yen	Capital surplus: 10 billion yen Accumulated depreciation not included in the profit and loss statement: -1 billion yen	No profit / loss recorded

### Exclusion from Reserves

As with corporate accounting, when expenses such as prospective retirement benefits for faculty and staff and bonuses to be paid in the next term are expected, the amounts to be incurred within the term are treated as expenses and recorded in liabilities as reserves (see Figure 4).

However, when these expenses are financed by operational grants from the government, they are not treated as expenses of the national university corporation for the term and not recorded as reserves. In other words, as with the exclusion from the profit and loss statement above, these prospective expenses that shall

not be recorded as reserves are not included in the profit and loss statement.

National university corporations, which are financed by financial sources including operational grants from the government, have the responsibility to disclose their financial information to Japanese citizens and other stakeholders. As these reserves equivalents are costs that will eventually be borne by citizens, they are required to be included in financial statements as “not included in reserves” (see Figure 5).

**Figure 4: When prospective retirement benefits are financed by the university's own income**  
(Example: staff and faculty who get paid from income of the University Hospital)

Liabilities	Expenses	On financial statements
Reserves for retirement benefits x + y yen	Transferred to reserves for retirement benefit y yen	The total amount of reserves on the balance sheet and the amount of increase in the term on the profit and loss statement

**Figure 5: When the prospective retirement benefits are financed by operational grants**

Liabilities	Expenses	On financial statements
Not recorded	Not recorded	Reserves equivalents recorded

# Financial Statements Based on Standard Business Accounting Practices (as a Guide)

We hear people say that the concept of balancing of profit and loss and the system for exclusion from the profit and loss statement, which are unique to national university corporation accounting, are difficult to understand.

This is the reason that we have created AY2021 financial statements based on standard business accounting practices (as a guide) in relation to the following items to make them easier to understand for stakeholders.

## Key Points

### 1 Review of income recognition ▶ See "Income Recognition" on page 56.

(In millions of yen)

#### ● Profit and Loss Statement (P/L)

The granted (received) amounts of operational grant items with no consideration were recorded as income, not as liabilities, and at the time of granting (reception), not at the time of completion of operations. As a result, the income increased by about 3.8 billion yen.

▶ Recording the income at the time of granting (reception) makes it clearer when the funds were secured, making the data easier to understand in general. This increases the clarity of financial information reflecting the status of receiving external funds.

P/L income items, etc.	Before adjustment	After adjustment	Difference
Operational grants income	35,728	36,205	477
Student fee income	10,056	10,133	77
Facility expense grants income	481	2,360	1,879
Subsidy income	5,842	6,504	662
Donation income	2,401	3,638	1,237
Miscellaneous income	2,744	2,901	157
Extraordinary profit	762	120	△ 642
		Affected amount	3,847

(In millions of yen)

#### ● Balance Sheet (B/S)

The granted (received) amounts, including those carried forward, were recorded as income, not as liabilities. As a result, the liabilities decreased by about 6.6 billion yen.

▶ Transferring the total amount of external funds, etc. recorded as liabilities to income recorded at the time of granting (receiving) can further enhance financial strength and safety.

B/S liabilities items	Before adjustment	After adjustment	Difference
Donation liabilities	6,229	0	△ 6,229
Subsidies deposits received	188	0	△ 188
Advance payments received	163	6	△ 157
		Affected amount	△ 6,574

### 2 Review of the recording of the same amount of income as depreciation expenses, etc.

▶ See "Recording of the Same Amount of Income as Depreciation Expenses" on page 56.

(In millions of yen)

#### ● Profit and Loss Statement (P/L)

When the profit-and-loss balancing treatment in which the same amount of income as depreciation expenses is recorded as a reversal of per contra liabilities for property acquisition is cancelled, the income decreases by about 2.9 billion yen.

▶ Recognizing the influence of depreciation expenses clarifies the necessity of systematically and strategically securing financial resources for renewal of facilities (measures concerning aging assets).

P/L income items, etc.	Before adjustment	After adjustment	Difference
Reversal of per contra liabilities for property acquisition	2,677	0	△ 2,677
Extraordinary profit	120	0	△ 120
Reversal of appropriated surplus	106	0	△ 106
		Affected amount	△ 2,903

(In millions of yen)

#### ● Balance Sheet (B/S)

When the profit-and-loss balancing treatment in which operational grants liabilities are initially transferred to contra-accounts for assets at the time of purchase of depreciable assets is cancelled, including those from the previous academic years, the liabilities decrease by about 24.9 billion yen.

▶ When contra-accounts for assets that do not need to be repaid in the future are not recorded as liabilities, financial strength and safety become clearer.

B/S liabilities items	Before adjustment	After adjustment	Difference
Contra-accounts for assets	24,857	0	△ 24,857
		Affected amount	△ 24,857

### 3 Review of the exclusion from the profit and loss statement

▶ See "Exclusion from the Profit and Loss Statement" on page 57.

(In millions of yen)

#### ● Profit and Loss Statement (P/L)

As a result of recording the depreciation expenses for facilities for which the national government should be responsible (costs deemed not to be within the scope of operational responsibilities of national university corporations) as expenses of the national university corporation, the expenses increased by about 4.3 billion yen.

▶ This clarifies that as depreciation expenses for facilities can amount to a large sum, depreciation expenses for facilities for which the national government should be responsible can have an extremely large impact on management.

P/L expense items, etc.	Before adjustment	After adjustment	Difference
Education expenses	7,171	8,675	1,504
Research expenses	7,019	8,911	1,892
Education and research support expenses	2,214	2,503	289
Medical expenses	24,670	24,779	109
General administrative costs	2,763	3,059	296
Extraordinary loss	133	344	211
		Affected amount	4,301

(In millions of yen)

#### ● Balance Sheet (B/S)

When the exclusion from the profit and loss statement, the treatment in which the capital surplus is not reduced and is recorded in the cumulative amount of depreciation not included in the profit and loss statement, is cancelled, including amounts from the previous academic years, the capital surplus increases by about 79.3 billion yen. At the same time, however, this causes large amounts of depreciation expenses, including those from the previous academic years, to be recorded, resulting in a decrease of about 73.8 billion yen in retained earnings.

▶ This clarifies capital surplus and retained earnings, making the realities of the university's financial base clearer.

B/S net asset items	Before adjustment	After adjustment	Difference
Capital surplus	67,930	147,269	79,339
Retained earnings	10,393	△ 63,360	△ 73,753
		Affected amount	5,586

#### 4 Review of the exclusion from reserves ▶ See “Exclusion from Reserves” on page 57.

##### ● Profit and Loss Statement (P/L)

When the amounts of retirement benefits and bonuses financed by operational grants that are marked as not being included in reserves in financial statements, for which reserves are not recorded in national university corporation accounting, are recorded as personnel expenses, the expenses decrease by about 600 million yen.

▶ This makes the realities of personnel expenses of the term clearer and can be used as an indicator when exploring personnel strategies.

##### ● Balance Sheet (B/S)

When retirement benefits and bonuses, including those from the previous academic years, are recorded as reserves, without excluding them from reserves, the liabilities increase by about 25.8 billion yen.

▶ This clarifies the existence of large costs which the university needs to recognize as prospective expenditures that are expected to arise unless national budgetary measures are taken to cover them.

(In millions of yen)

P/L expense items	Before adjustment	After adjustment	Difference
Personnel expenses	50,205	49,589	△ 616
		Affected amount	△ 616

(In millions of yen)

B/S liabilities items	Before adjustment	After adjustment	Difference
Reserves	1,782	27,627	25,845
		Affected amount	25,845

#### 5 [Results of Reviews ① ~ ④] Gross income

In the financial statements we created based on standard business accounting practices, the gross income decreased by about 2.7 billion yen, particularly affected by the adjustment made in ③, in which depreciation expenses for facilities were recorded as expenses.

This means that the depreciation expenses exceeded the facility expenses for renewal of facilities.

▶ To further enhance our education and research environment, including facilities, in the future, it is important to diversify our financial resources through proactive acquisition of external funds, in addition to national funds.

(In millions of yen)

P/L items	Before adjustment	After adjustment	Difference
Ordinary Income	106,076	107,889	1,813
Ordinary Expenses	102,335	105,809	3,474
Extraordinary profit	762	0	△ 762
Extraordinary loss	133	344	211
Reversal of appropriated surplus	106	0	△ 106
Gross income	4,476	1,737	△ 2,739
		Affected amount	△ 2,739

### AY2021 Financial Statements (adjusted based on standard corporate accounting practices)

#### Balance Sheet (B/S)

(In millions of yen)

Item	Before adjustment	After adjustment	Difference
<b>Assets</b>	384,084	384,084	0
Land	242,563	242,563	0
Buildings	79,756	79,756	0
Tools, furniture and fixtures	10,668	10,668	0
Cash and deposits	23,041	23,041	0
Other	28,056	28,056	0
<b>Liabilities</b>	76,133	70,547	△ 5,586
Borrowings	25,847	25,847	0
Donation liabilities	6,229	0	△ 6,229 ①
Sponsored research/sponsored operations liabilities	2,480	2,480	0
Subsidies deposits received	188	0	△ 188 ①
Contra-accounts for assets	24,857	0	△ 24,857 ②
Reserves	1,782	27,627	25,845 ④
Advance payments received	163	6	△ 157 ①
Other	14,587	14,587	0
<b>Net Assets</b>	307,951	313,537	5,586
Government investment	229,628	229,628	0
Capital surplus	67,930	147,269	79,339 ③
Retained earnings	10,393	△ 63,360	△ 73,753 ③
Unappropriated retained earnings at the end of the term	4,476	1,737	△ 2,739 ⑤

\* The circled numbers in the right margin of the table correspond to the respective adjustments described on pages 58 and 59.

#### Profit and Loss Statement (P/L)

(In millions of yen)

Item	Before adjustment	After adjustment	Difference
<b>Ordinary Expenses</b>	106,076	107,889	1,813
Operational grants income	35,728	36,205	477 ①
Student fee income	10,056	10,133	77 ①
University hospital income	36,690	36,690	0
Sponsored research income	9,440	9,440	0
Facility expense grants income	481	2,360	1,879 ①
Subsidy income	5,842	6,504	662 ①
Donation income	2,401	3,638	1,237 ①
Reversal of per contra liabilities for property acquisition	2,677	0	△ 2,677 ②
Miscellaneous income	2,744	2,901	157 ①
Financial income	17	17	0
<b>Ordinary Income</b>	102,335	105,809	3,474
Education expenses	7,171	8,675	1,504 ③
Research expenses	7,019	8,911	1,892 ③
Education and research support expenses	2,214	2,503	289 ③
Medical expenses	24,670	24,779	109 ③
Sponsored research expenses	7,949	7,949	0
Personnel expenses	50,205	49,589	△ 616 ④
General administrative expenses	2,763	3,059	296 ③
Other	344	344	0
Extraordinary profit	762	0	△ 762 ① ②
Extraordinary loss	133	344	211 ③
Reversal of appropriated surplus	106	0	△ 106 ②
<b>Gross income</b>	4,476	1,737	△ 2,739 ⑤







**Educational, Research and  
Other Achievements and Results and  
Financial Conditions by Segment**

# Segment Information

The University of Tsukuba discloses segment-specific information in financial statements in accordance with the Accounting Standards for National University Corporations in the following categories: the university segment, joint use and joint research centers, affiliated schools and the University Hospital.

In order to give interested stakeholders a deeper understanding of the results of our education and research activities, as well as the financial foundations supporting them, we have now decided to classify the university segment information which we have collectively disclosed in our financial statements into

Classification	Universities									
	Faculty of Humanities and Social Sciences/Related Departments	Faculty of Business Sciences/Related Departments	Faculty of Pure and Applied Sciences/Related Departments	Faculty of Engineering, Information and Systems/Related Departments	Faculty of Life and Environmental Sciences/Related Departments	Faculty of Human Sciences/Related Departments	Faculty of Health and Sport Sciences/Related Departments	Faculty of Art and Design/Related Departments	Faculty of Medicine/Related Departments	Faculty of Library, Information and Media Science/Related Departments
Operating expenses	2,557,516	856,090	4,543,564	4,420,168	5,283,480	1,777,203	2,146,417	891,023	6,488,791	1,153,283
Operating cost										
Education expenses	338,667	76,807	460,336	548,732	439,070	188,788	171,363	147,049	482,342	154,062
Research expenses	121,847	47,035	692,059	539,728	757,879	397,544	329,356	89,988	1,067,207	71,525
Medical expenses	—	—	—	—	—	—	—	—	—	—
Education and research support expenses	—	—	646	—	91,535	—	991	98	35	—
Sponsored research expenses	9,025	25,545	552,825	370,636	1,149,781	18,401	84,465	6,293	488,981	109,930
Joint research expenses	2,781	7,469	204,545	168,944	210,840	10,518	48,527	6,692	152,403	48,069
Sponsored operations expenses	3,713	—	12,270	7,604	52,843	15,188	78,166	12,420	135,924	2,802
Personnel expenses	2,070,587	680,023	2,591,335	2,746,634	2,564,038	1,128,124	1,410,669	626,948	4,145,046	754,266
General administrative cost	10,871	19,086	27,681	35,983	16,722	18,589	22,266	1,510	15,761	12,464
Financial cost	—	—	—	831	—	4	4	5	137	10
Miscellaneous loss	24	127	1,868	1,076	771	47	611	20	955	156
Operating revenues	3,343,132	966,473	5,197,476	5,442,176	5,822,010	2,111,289	2,634,846	1,127,216	7,011,529	1,519,111
Operational grants income	1,893,532	632,695	2,492,029	2,605,267	2,290,145	1,040,695	1,280,712	536,018	3,656,607	735,251
Student fee income	1,247,785	262,806	1,176,896	1,736,499	1,232,511	680,184	944,319	434,401	1,154,547	493,062
University hospital income	—	—	—	—	—	—	—	—	—	—
Sponsored research income	11,049	33,060	710,798	466,171	1,367,051	21,159	96,406	7,838	619,795	140,407
Joint research income	3,338	9,127	242,393	194,202	251,156	12,395	56,402	8,764	170,508	56,221
Sponsored operations income	3,879	—	13,119	8,287	55,121	17,361	85,807	13,610	151,424	2,862
Facility expense grants income	5,782	—	6,163	113,151	898	247,301	—	—	1,303	34,984
Subsidy income	21,640	3,000	47,091	50,807	70,758	15,183	22,064	8,381	99,160	5,391
Donation income	81,729	2,942	79,048	47,000	137,520	8,145	42,248	70,966	579,003	7,795
Reversal of asset return liability	18,214	8,940	273,258	113,231	216,044	22,416	73,919	27,601	278,196	23,946
Financial income	—	—	—	—	—	—	—	—	—	—
Miscellaneous income	56,185	13,903	156,681	107,562	200,805	46,449	32,968	19,639	300,987	19,191
Operating income (loss)*3	785,615	110,383	653,912	1,022,008	538,530	334,086	488,429	236,193	522,738	365,827

## Imputed assets

Classification	Faculty of Humanities and Social Sciences/Related Departments	Faculty of Business Sciences/Related Departments	Faculty of Pure and Applied Sciences/Related Departments	Faculty of Engineering, Information and Systems/Related Departments	Faculty of Life and Environmental Sciences/Related Departments	Faculty of Human Sciences/Related Departments	Faculty of Health and Sport Sciences/Related Departments	Faculty of Art and Design/Related Departments	Faculty of Medicine/Related Departments	Faculty of Library, Information and Media Science/Related Departments
Land	—	—	—	—	2,153,611	—	—	—	—	—
Buildings	2,671,348	1,272,476	5,078,687	3,144,640	4,565,898	2,385,066	2,579,823	1,229,729	6,210,230	729,121
Structures	80,703	46,823	87,547	28,845	133,681	86,659	34,518	18,465	99,734	1,402
Other fixed assets	25,808	24,349	1,128,519	336,314	760,475	50,477	201,467	653,594	777,981	68,790
Current assets	11,863	29,828	29,459	77,818	63,276	8,559	16,474	7,340	69,280	4,978
Total	2,789,723	1,373,477	6,324,213	3,587,616	7,676,941	2,530,760	2,832,283	1,909,127	7,157,226	804,292

Classification	Faculty of Humanities and Social Sciences/Related Departments	Faculty of Business Sciences/Related Departments	Faculty of Pure and Applied Sciences/Related Departments	Faculty of Engineering, Information and Systems/Related Departments	Faculty of Life and Environmental Sciences/Related Departments	Faculty of Human Sciences/Related Departments	Faculty of Health and Sport Sciences/Related Departments	Faculty of Art and Design/Related Departments	Faculty of Medicine/Related Departments	Faculty of Library, Information and Media Science/Related Departments
Reduction of appropriated surplus	—	—	2,196	3,397	—	—	—	—	—	—
Reduction of reserve funds carried forward from the previous Mid-term Plan Period	—	—	—	—	—	—	—	—	—	—
Depreciation	18,214	11,683	545,842	243,822	310,699	23,206	88,633	28,907	425,292	61,552
Depreciation not included in the statement of income	222,435	78,527	454,747	235,650	421,131	172,262	215,707	116,084	545,175	41,495
Impairment losses not included in the statement of income	—	—	—	—	—	—	—	—	—	—
Interest expenses not included in the statement of income	—	—	43	107	234	59	—	8	—	5
Sale or disposal gains not included in the statement of income	—	—	—	860	7	242	—	—	△ 966	704
Estimated bonus increases not included in reserves	△ 25,989	△ 3,383	△ 16,611	△ 17,108	△ 3,453	△ 11,831	△ 1,850	△ 1,509	△ 34,051	△ 6,421
Estimated retirement benefit increases not included in reserves	△ 165,577	548	56,845	54,892	33,052	△ 56,434	△ 69,484	13,076	△ 134,808	△ 20,856

\*1 A list of all departments that are classified into the respective segments for disclosure is available on page 64.

\*2 In the common to university corporations section, an interest income of 11,054,000 yen, interest on securities of 81,000 yen and exchange gain of 3,666,000 yen are recorded from the financial income (operating revenues), investments in securities worth 2,699,630,000 yen from the other fixed assets (imputed assets), and cash and deposits worth 23,040,758,000 yen, marketable securities worth 1,600,193,000 yen and accrued income worth 9,492,000 yen from the current assets.

smaller segments according to the different faculties (faculty organizations) and related education and research organizations (graduate schools and undergraduate schools) and separately disclose the information in this Integrated Report.

These segmented pieces of information about educational

and research results and achievements and financial information (expenses incurred for activities and financial resources for implementation) are also found on page 65 and later pages.

(In thousands of yen)

	Universities				Joint use/joint research centers			Affiliated Schools	University of Tsukuba Hospital	Subtotal	Common to University Corporations*2	Total
	School of Integrative and Global Majors	School of Comprehensive Studies	University of Tsukuba Library, Centers, Etc.	Faculty of Transdisciplinary Research		Tsukuba-Plant Innovation Research Center	Center for Research in Isotopes and Environmental Dynamics					
				Life Science Center for Survival Dynamics	Center for Computational Sciences							
	628,598	177,386	16,981,514	1,438,871	1,734,275	441,642	401,597	7,081,068	43,332,188	102,334,675	—	102,334,675
	460,030	32,582	2,328,427	922	115	—	—	1,025,573	316,004	7,170,868	—	7,170,868
	904	—	906,358	228,330	967,715	48,604	105,903	5,562	641,897	7,019,441	—	7,019,441
	—	—	—	—	—	—	—	—	24,669,860	24,669,860	—	24,669,860
	—	—	2,073,594	327	—	46,411	—	—	—	2,213,637	—	2,213,637
	—	—	395,245	997,452	167,834	39,688	13,541	385	1,142,061	5,572,087	—	5,572,087
	—	—	368,703	2,419	35,209	2,024	8,453	—	235,904	1,513,501	—	1,513,501
	396	—	222,379	—	3,159	—	—	28,779	287,804	863,446	—	863,446
	166,887	142,349	8,266,992	209,421	555,734	304,916	273,425	5,999,875	15,567,954	50,205,221	—	50,205,221
	381	2,455	2,344,612	—	—	—	—	19,892	215,107	2,763,379	—	2,763,379
	—	—	55,260	—	4,506	—	268	419	246,283	307,729	—	307,729
	—	—	19,946	1	4	—	5	583	9,314	35,507	—	35,507
	656,820	503,197	12,583,824	1,337,842	1,765,592	454,908	405,263	7,033,469	46,145,133	106,061,307	14,800	106,076,107
	172,157	138,334	7,072,165	210,891	1,339,174	361,026	359,084	6,374,064	2,537,713	35,727,560	—	35,727,560
	65,214	364,316	3,492	—	—	—	—	260,040	—	10,056,071	—	10,056,071
	—	—	—	—	—	—	—	—	36,690,293	36,690,293	—	36,690,293
	—	—	539,451	1,018,161	202,820	54,242	17,003	1,326	1,401,898	6,708,635	—	6,708,635
	—	—	443,504	9,249	39,270	2,421	8,683	—	278,871	1,786,504	—	1,786,504
	396	—	240,830	—	3,500	—	—	28,779	319,462	944,438	—	944,438
	—	—	7,767	—	6,902	—	9,631	36,612	10,943	481,436	—	481,436
	222,581	—	1,723,485	1,213	23,027	—	3,000	64,187	3,461,044	5,842,013	—	5,842,013
	—	—	179,256	15,059	299	—	—	137,271	1,012,428	2,400,708	—	2,400,708
	196,461	548	870,774	66,618	93,701	36,771	7,730	107,146	241,435	2,676,949	—	2,676,949
	—	—	—	—	—	—	—	—	2,366	2,366	14,800	17,166
	11	—	1,503,098	16,651	56,900	448	132	24,044	188,681	2,744,335	—	2,744,335
	28,222	325,811	△ 4,397,690	△ 101,029	31,317	13,266	3,667	△ 47,598	2,812,946	3,726,633	14,800	3,741,433

	School of Integrative and Global Majors	School of Comprehensive Studies	University of Tsukuba Library, Centers, Etc.	Life Science Center for Survival Dynamics	Center for Computational Sciences	Tsukuba-Plant Innovation Research Center	Center for Research in Isotopes and Environmental Dynamics	Affiliated Schools	University of Tsukuba Hospital		Common to University Corporations*2	Total
	—	—	161,653,672	—	203,631	268,253	2,186,745	68,916,380	7,180,341		—	242,562,633
	1,255	—	21,586,902	656,860	462,651	362,018	162,921	5,489,700	16,490,219		—	75,079,545
	—	—	2,810,053	5,456	1,937	56,671	2,005	424,690	757,476		—	4,676,664
	587,203	4,286	12,579,609	181,496	556,209	63,804	23,881	280,675	7,767,313		2,699,630	28,771,882
	2,616	8,742	382,724	54	25,132	6,474	15,774	75,286	7,507,435		24,650,443	32,993,555
	591,074	13,028	199,012,961	843,865	1,249,560	757,220	2,391,326	75,186,730	39,702,783		27,350,072	384,084,278

	School of Integrative and Global Majors	School of Comprehensive Studies	University of Tsukuba Library, Centers, Etc.	Life Science Center for Survival Dynamics	Center for Computational Sciences	Tsukuba-Plant Innovation Research Center	Center for Research in Isotopes and Environmental Dynamics	Affiliated Schools	University of Tsukuba Hospital		Common to University Corporations	Total
	—	—	51,526	154	—	1,682	—	47,166	—		—	106,121
	—	—	—	—	—	—	—	—	—		—	—
	196,461	548	1,582,169	988,130	545,455	38,589	11,491	115,235	3,460,738		—	8,696,666
	—	—	1,489,573	24,894	13,148	14,231	11,794	256,739	124,774		—	4,438,366
	—	—	210,669	—	—	—	—	—	—		—	210,669
	—	—	1,068	—	—	—	—	—	—		—	1,524
	—	—	△ 350,386	—	—	0	—	110	—		—	△ 349,430
	—	3,185	△ 12,659	939	△ 563	△ 3,719	△ 3,651	△ 21,169	17,144		—	△ 142,699
	—	1,569	△ 335,422	△ 10,485	23,465	40,771	△ 58,102	23,170	129,969		—	△ 473,810

\*3 Factors contributing to negative operating income (loss): While student fee income (tuition, enrollment and examination fees) is recorded in the respective segments that have acquired it, expenses based on student fees are recorded in the respective segments that have spent them, sometimes resulting in negative operating income in some segments.

The operating income of the affiliated school segment became negative due to the amount of reduction of appropriated surplus (47,166,000 yen) and other factors.

## Segment Classification

		Universities					
Segments for disclosure		Faculty of Humanities and Social Sciences/ Related Departments	Faculty of Business Sciences/ Related Departments	Faculty of Pure and Applied Sciences/ Related Departments	Faculty of Engineering, Information and Systems/ Related Departments		Faculty of Life and Environmental Sciences/ Related Departments
Classified Departments, Etc.	Faculties	Faculty of Humanities and Social Sciences	Faculty of Business Sciences	Faculty of Pure and Applied Sciences	Faculty of Engineering, Information and Systems		Faculty of Life and Environmental Sciences
	Graduate Schools (Graduate Courses)	Graduate School of Business Sciences, Humanities and Social Sciences (Degree Programs in Humanities and Social Sciences)	Graduate School of Business Sciences, Humanities and Social Sciences (Degree Programs in Business Sciences, Law School Program, MBA Program in International Business)	Graduate School of Science and Technology (Degree Programs in Pure and Applied Sciences)	Graduate School of Science and Technology (Degree Programs in Systems and Information Engineering (excl. Life Science Innovation P))		Graduate School of Science and Technology (Degree Programs in Life and Earth Sciences (excl. Life Science Innovation P), Joint Master's Degree Program in Sustainability and Environmental Sciences)
	Graduate Schools (Graduate Programs) * Former program	Graduate School of Humanities and Social Sciences	Graduate School of Business Sciences	Graduate School of Pure and Applied Sciences	Graduate School of Systems and Information Engineering		Graduate School of Life and Environmental Sciences
	Undergraduate Schools (Colleges)	School of Humanities and Culture	School of Social and International Studies	School of Science and Engineering (College of Mathematics, College of Physics, College of Chemistry and College of Engineering Sciences)	School of Science and Engineering (College of Engineering Systems, College of Policy and Planning Sciences and Bachelor's Program of Interdisciplinary Engineering)	School of Informatics (College of Information Science)	School of Life and Environmental Sciences

		Universities						
Segments for disclosure		Faculty of Human Sciences/ Related Departments	Faculty of Health and Sport Sciences/ Related Departments	Faculty of Art and Design/Related Departments	Faculty of Medicine/ Related Departments	Faculty of Library, Information and Media Science/Related Departments		
Classified Departments, Etc.	Faculties	Faculty of Human Sciences	Faculty of Health and Sport Sciences	Faculty of Art and Design	Faculty of Medicine	Faculty of Library, Information and Media Science		
	Graduate Schools (Graduate Courses)	Graduate School of Comprehensive Human Sciences (Degree Programs in Comprehensive Human Sciences (Education P, Psychology P, Disability Sciences P, Counseling P, Counseling Science P, Rehabilitation Science P))	Graduate School of Comprehensive Human Sciences (Degree Programs in Comprehensive Human Sciences (Sports Medicine P, Physical Education, Health and Sport Sciences (Master's) P, Sport and Olympic Studies P, Physical Education, Health and Sport Sciences (Doctoral) P, Sport and Wellness Promotion P, Coaching Science P), Joint Master's Program in International Development and Peace through Sport, Joint Doctoral Program in Advanced Physical Education and Sports for Higher Education)	Graduate School of Comprehensive Human Sciences (Degree Programs in Comprehensive Human Sciences (Art P, Heritage Studies P, Design P))	Graduate School of Comprehensive Human Sciences (Master's) P, Public Health (Master's) P, Human Care Science P, Public Health (Doctoral) P, Neuroscience P, Nursing Science P, Medical Sciences (Doctoral) P), International Joint Degree Master's Program in Agro-Biomedical Science in Food and Health)	Graduate School of Comprehensive Human Sciences (Degree Programs in Comprehensive Human Sciences (Informatics P))		
	Graduate Schools (Graduate Programs) * Former program	Graduate School of Comprehensive Human Sciences (Education Sciences, Education, School Education, Psychology (Master's), Psychology (Doctoral), Disability Sciences, Lifespan Development and Lifespan Developmental Sciences)	Master's Program in Education	Graduate School of Comprehensive Human Sciences (Sports and Health Promotion, Sports Medicine, Physical Education, Health and Sport Sciences (Master's), Physical Education, Health and Sports Sciences (Doctoral), Coaching Science, International Development and Peace through Sports and Advanced Physical Education and Sports for Higher Education)	Graduate School of Comprehensive Human Sciences (Art and Design, World Heritage Studies and World Cultural Heritage Studies)	Graduate School of Comprehensive Human Sciences (Medical Sciences, Human-Care-Sciences, Kansei, Behavioral and Brain Sciences, Biomedical Sciences, Clinical Sciences, Nursing Sciences and Agro-Biomedical Science in Food and Health (international joint degree program))	Graduate School of Library, Information and Media Studies	
	Undergraduate Schools (Colleges)	School of Human Sciences	School of Physical Education, Health and Sport Sciences	School of Art and Design	School of Medicine and Health Sciences	School of Informatics (College of Media Arts, Science and Technology and College of Knowledge and Library Sciences)		

		Universities				Joint use/joint research centers				
Segments for disclosure		School of Integrative and Global Majors	School of Comprehensive Studies	University of Tsukuba Library, Centers, Etc.	Faculty of Transdisciplinary Research Life Science Center for Survival Dynamics	Center for Computational Sciences	Tsukuba-Plant Innovation Research Center	Center for Research in Isotopes and Environmental Dynamics	Affiliated Schools	University of Tsukuba Hospital
Classified Departments, Etc.		Life Science Innovation P (Degree Programs in Systems and Information Engineering, Degree Programs in Life and Earth Sciences, Degree Programs in Comprehensive Human Sciences), Human Biology P, Humanics P, Global Issues P							Elementary School Junior High School at Otsuka Junior High School at Komaba Senior High School at Otsuka Senior High School at Komaba Senior High School at Sakado Special Needs Education School for the Visually Impaired Special Needs Education School for the Deaf Special Needs Education School for the Mentally Challenged Special Needs Education School for the Physically Challenged Special Needs Education School for Children with Autism	

\* P = Master's and Doctoral Program

# Achievements and Results and Financial Conditions by Segment

< Main stakeholders >

- Companies** Companies, independent administrative institutions, private research institutions
- Students** Current and prospective students, parents and guardians
- Alumni** Alumni
- Community** Local governments, local residents

## Faculty of Humanities and Social Sciences/Related Departments

### Faculty of Humanities and Social Sciences

- Increase of peer-reviewed academic papers **Companies**

The number of peer-reviewed original articles published by members of the faculty was 163 (90 in English, 68 in Japanese, and 5 in other languages), up 12 from 151 (70 in English, 71 in Japanese, and 10 in other languages) in the previous academic year. In particular, the increase of 20 articles in English indicates improved global communication of the faculty. In this regard, in AY2021, 8 original articles by members of the faculty were published on F1000Research, a British Open Research publishing platform which the University of Tsukuba joined two years ago.

- Promotion of cooperation among government, industry and academia **Companies Students Alumni Community**

The faculty launched an industry-academic-government collaborative project in partnership with Ibaraki Prefecture, Toppan Inc., NTT DOCOMO, INC. and POLYGLOTS, Inc. to provide Japanese language and other learning support to students with foreign roots. Recent years have seen an increase in children of foreign origin in Japan, drawing greater attention to the social challenge of coexistence with different cultures. Under such circumstances, this project is expected to help address this challenge from the aspect of language education.



Japanese language learning support

- Support for presentations at overseas academic conferences **Companies Students**

As overseas international academic conferences went online due to the spread of COVID-19, the graduate schools offered support to subsidize expenses for participation in such conferences, in place of the financial support they used to provide to cover travel expenses.

### School of Humanities and Culture

- Increased participation in TOEIC **Companies Students Alumni**

The school enhanced career education and employment support courses provided through colleges and student support services, resulting in the number of internship participants increasing and the rate of employment improving despite the COVID-19 pandemic. At the same time, the employment/higher education advancement rate remained high. In this academic year, the TOEIC participation rate among juniors also significantly improved as a result of cooperation between colleges and CEGLOC.

- Continuing to offer liberal arts education and holding a college information session for overseas schools even during the COVID-19 pandemic **Students Alumni**

Many faculty members of the school play central roles in common, university-wide subjects such as foreign languages, Japanese, philosophy, and museology. As these common subject courses switched to online due to COVID-19, they accepted larger numbers of students than before, supporting the liberal arts education of the university. In addition, the school resumed its introductory Arabic course. The College of Comparative Culture held its own online information session for prospective students from overseas schools in Germany, Central Europe and North America on March 6, 2022.



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

- Increasing the proportion of international students **Companies Students Alumni**

Despite the COVID-19 pandemic, the graduate schools offered truly international education; the ratio of international students rose from 25.7% in AY2020 to 26.6% in AY2021 while the number of non-regular international students per faculty member increased from 0.1 to 0.15 persons.

- Contributing to society and attracting more applicants through open courses **Students Alumni Community**

The graduate schools put a lot of effort into attracting more prospective students to apply and to contribute to society through community-based activities, for example, by providing a new open course named "Literature in Tsukuba Science City," as well as "Graphic Novels Standing against an Age of Crisis," a successor to "Literature Course on Masterpieces to Revisit Graphic Novels from around the World," in addition to the existing open courses, Philosophy Café and Rekijin Atelier.

- Increase in article productivity **Companies Students Alumni**

The article productivity (number of articles per student) among graduate students improved from 0.43 in AY2020 to 0.58 in AY2021 in terms of the number of academic articles and books, and from 0.44 to 0.68 in terms of the number of academic conference presentations.

### School of Social and International Studies

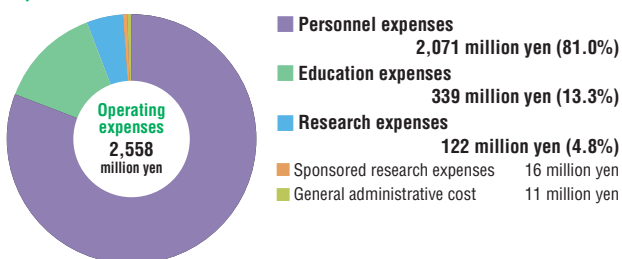
- Increase in applicant rate and acceptance of a diversity of students **Students Alumni**

The application-to-enrollment ratio for the College of Social Sciences remained higher than the average of the university (3.1) at 4.8, and the Undergraduate Program of International Social Studies, held in English, continued to accept diverse students from countries around the world, resulting in the application-to-enrollment ratio for the program rising as well.

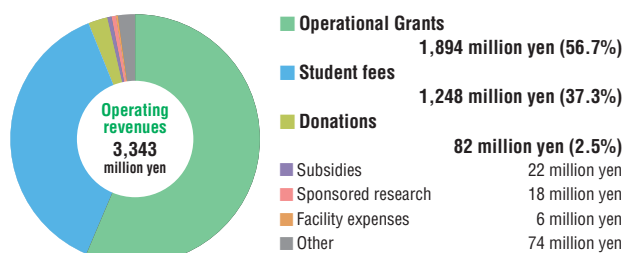
- Launch of a first-year tutorial program **Companies Students**

A tutorial program for freshmen of the school was launched in AY2021. The purpose of the program is to construct new tutorial education that organically combines large-scale lectures and small-group seminars. Students participating in this program can discover their own issues and interests that can not only help them find themes for specialized education in later years but also lead to their life's work and they can delve into them by repeating the cycle of attending lectures and having seminar discussions based on the lectures.

### Expenses incurred for activities



### Financial resources



## Faculty of Business Sciences/Related Departments

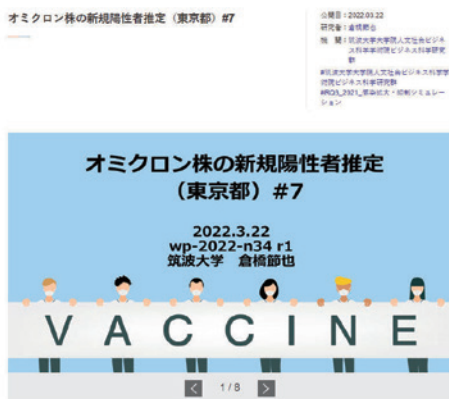
### Faculty of Business Sciences

#### ● Increase in acquisition of external funds Companies Students Alumni

The faculty has long been working to attract external funds and promote industry-academia collaborative research. AY2021 saw year-on-year increases in both the number of acquisitions of external funds (from 52 acquisitions in AY2020 to 56 acquisitions in AY2021) and the amount of acquired external funds per faculty member (from 1.83 million yen in AY2020 to 2.61 million yen in AY2021). Furthermore, its sponsored and joint research income increased markedly (from 19.39 million yen in AY2020 to 42.19 million yen in AY2021) as a result of acquiring research funds from governmental agencies, as well as private financing for joint research expenses.

#### ● Interdisciplinary implementation of research Companies Students Alumni

Given the situation with COVID-19, the faculty has decided to promote research related to COVID-19 and return the results to society. The specific outcomes of its research on this topic include an infection simulation report created in the COVID-19 AI and Simulation Project, commissioned by the Cabinet Secretariat Office for COVID-19 and Other Emerging Infectious Disease Control, and an academic article co-authored by a member of the faculty and NTT DATA Mathematical Systems Inc., entitled "Assessment of the Impact of COVID-19 Infections Considering Risk of Infected People Inflow to the Region and the Vaccination Effect" (The Japanese Society for Artificial Intelligence). The faculty also began an interdisciplinary research project named "Practical Application of a Fraudulent Accounting Detection AI Model for Sound Capital Market Formation: Fusion research that adds the perspective of a practitioner to the three areas of accounting, law, and statistics," financed by a research grant from the Toyota Foundation.



Source: Website of the Cabinet Office  
[https://www.covid19-ai.jp/ja-jp/presentation/2021\\_rq3\\_countermeasures\\_simulation/](https://www.covid19-ai.jp/ja-jp/presentation/2021_rq3_countermeasures_simulation/)

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

#### ● Improving the application-to-enrollment ratios by providing quality lifelong learning opportunities to students from the workforce Companies Students Alumni

These are the only graduate schools of the university that confer all three classifications of degrees (research degrees, specialist degrees and professional degrees) to develop human resources who can address a wide range of issues that need to be resolved in society. As such, they offer distinctive educational programs tailored to those degree classifications. Despite the lingering COVID-19 pandemic, the application-to-enrollment ratios generally remained as high as in the previous academic year in AY2021, in which the application-to-enrollment ratios for professional degrees had particularly risen. The application-to-enrollment ratio was 2.4 for master's programs (research degree, specialist degree) and 2.1 for doctoral programs (research degree) in the degree programs in Business Sciences, 3.3 for the Law School Program (professional degree), and 3.1 for the MBA Program in International Business (professional degree).

#### ● Providing an extension program on the basics of business information and AI Companies Students Alumni

It is becoming clear that machine learning, text, and network analysis of business information can be effective in resolving a broad range of business challenges. To communicate outcomes in this field more widely to society in an easy-to-understand manner, the degree programs in business administration provided an extension program on the basics of business information and AI in response to the recent marked social needs concerning AI.



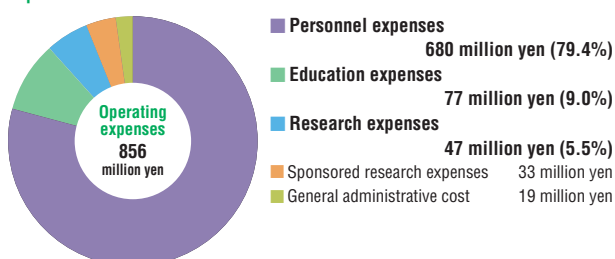
#### ● Improving the number of students passing the bar exam and pass rate Companies Students Alumni

Provision of tutor seminars by part-time lecturers and a follow-up course for graduates, given by full-time faculty mainly for graduates, in the Law School Program led to a higher bar exam pass rate (31.67%) and higher number of students passing the bar exam (19 students) (17th in pass rate and 14th in number of students who passed the exam in Japan) compared to the previous academic year.

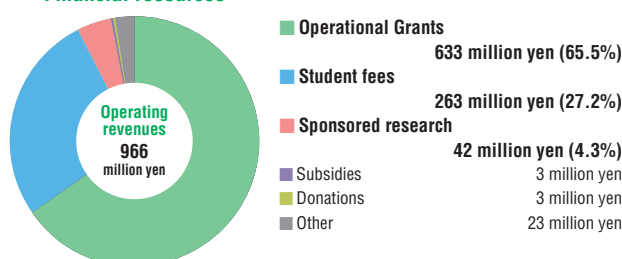
#### ● Providing CFA preparatory course extension programs Companies Students Alumni

The MBA Program in International Business provided two extension programs, a CFA (US certification for financial analysts) Level 1 exam preparatory course and a CFA Level 2 exam preparatory course, in which 53 participants attended lectures to prepare themselves for the competitive examination.

### Expenses incurred for activities



### Financial resources



## Faculty of Pure and Applied Sciences/Related Departments

### Faculty of Pure and Applied Sciences

- Evolution of scientific and engineering research and exploration of cross-cutting research

Companies Students

The faculty covers varied fields of science (mathematics, physics and chemistry) and materials-related engineering (physical engineering and material engineering) and works to deepen fundamental sciences and promote engineering advancement while conducting interdisciplinary research between these fields. It produced over 600 original academic papers, its field-weighted citation impact (FWCI), an indicator that measures the “quality of academic papers,” was higher than the global average (1.00), the number of papers ranking among the top 10% most cited rose to over 100, and the number of industry-academia collaborative joint and sponsored research projects it accepted also exceeded 100 (up 25%).

- Enhancement of joint research centers for further globalization

Companies Students Alumni

The faculty strives to enhance joint research centers that cover a broad spectrum of knowledge in pure and applied sciences on a global scale. For example, it decided to open an international research laboratory named the Japanese-French Laboratory for Semiconductor Physics and Technology (IRL J-FAST), contributed to the establishment of the Advanced Research Infrastructure for Materials and Nanotechnology (ARIM), and carried out preparations for the launch of the R&D Center for Zero CO<sub>2</sub> Emission with Functional Materials (Director: Takehiro Kondo). At the same time, the faculty has a high academic reputation, as attested to by many academic awards granted to its faculty members, including the Commendation for Science and Technology by the Minister of Education, Culture, Sports, Science and Technology (Kazuhiko Hara, Associate Professor) and the Young Scientists' Award from the Minister of Education, Culture, Sports, Science and Technology (Takuya Hashimoto, Assistant Professor).



Prof. Kazuhiko Hara (second from right)

### Graduate School of Science and Technology Graduate School of Pure and Applied Sciences

- Career path support for graduate students

Companies Students Alumni

Although the service moved online in the COVID-19 pandemic, it has been expanded to all students in the graduate schools, and the

networking event was held for graduate students and companies. The event was a great success, attended by 23 students and 49 people from 23 companies. This shows that such events can be very useful even online.

- Degree programs offered through the Collaborative Graduate School System

Students

With the university-wide transition to a new degree program system, new degree programs in International Materials Innovation were created through the Collaborative Graduate School System to strengthen collaboration.

- Promoting internationalization of graduate school

Companies Students

Despite the COVID-19 pandemic, the Double Degree Program with Université Grenoble Alpes (UGA) is continuing. In addition, a project for UGA and the University of Tsukuba to open an International Research Laboratory (IRL) for the French National Centre for Scientific Research (CNRS) was selected, resulting in more active exchanges between the two universities.

- Strengthening connections with corporations and society

Companies Students

Through the endowed courses provided by Toyota Motor-Denso and Fuji Electric, unique integrated education and research programs for everything from materials to devices and systems are being utilized effectively. Many students have completed the endowed courses.

### School of Science and Engineering

- Recruiting high quality students through diverse admission processes

Students

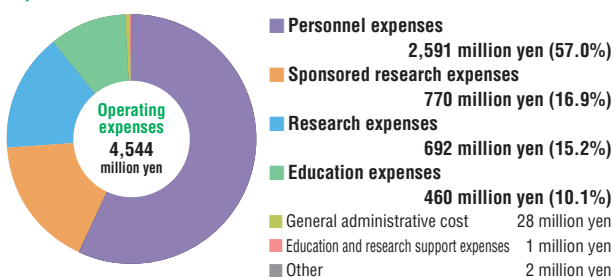
The school aims to recruit excellent students by selecting applicants through a wide variety of admission systems, including general entrance examinations, recommendation-based entrance examinations, examinations for privately funded international students, special entrance examinations for International Baccalaureate students, International Science Olympiad special entrance examinations, and transfer admission. The application-to-enrollment ratio, which had reached the highest level in a decade in the previous academic year, remained high for AY2022 at 3.7.

- Contributing to university-wide liberal arts education

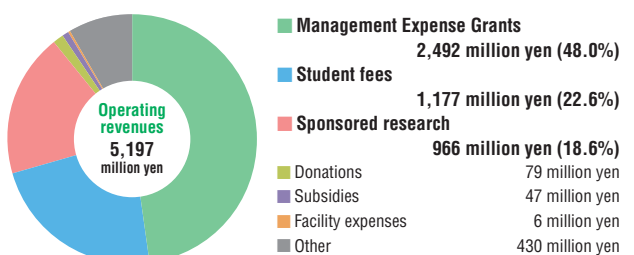
Students Alumni

Being an educational organization handling basic science and engineering disciplines, the school provides many subjects targeting all undergraduate students of the university. It provides subjects for transferrable skills education, such as Introduction to Mathematics, Introduction to Physics, Introduction to Chemistry and Introduction to Applied Science and Engineering, as well as subjects that aim to lay the foundations for specialized studies like Mathematical Literacy I/II, Calculus I-III, Linear Algebra I-III, Introduction to Mathematics, Mechanics I-III, Electromagnetics I-III and Chemistry I-III, to students enrolled from the entire university, including the School of Comprehensive Studies to prepare them for specialized studies.

### Expenses incurred for activities



### Financial resources



## Faculty of Engineering, Information and Systems/Related Departments

### Faculty of Engineering, Information and System

- Enhancing communication of information on research results Companies Students Alumni

The majority of research results of the faculty are published in overseas academic journals. To make them more widely known in Japan, it proactively publishes press releases about its research results. Consequently, it published 1.8 times more press releases in AY2021 than in AY2020, suggesting enhanced domestic communication of research results by the faculty.

- Establishment of research guidelines for the Fourth Mid-term Plan Students Alumni

As AY2022 marks the beginning of the Fourth Mid-term Plan, the faculty has discussed its research guidelines based on Chapter 2 "Looking Toward the Future in 2040: A Future Society Expanded by Science and Technology (Society 5.0)" of the "White Paper on Science, Technology, and Innovation 2020." It has identified its close-up areas of science and technology for the Fourth Mid-term Plan, such as next-generation bioengineering for precision medicine and development of electronic and quantum devices for ICT innovations.

### Graduate School of Science and Technology Graduate School of Systems and Information Engineering

- Filling intake quota and improving lifelong learning Students Alumni Community

The graduate schools reached 100% of their intake quota for all degree programs. In particular, their doctoral programs achieved an enrollment-to-quota ratio of over 100% for three consecutive years (AY2020, AY2021 and AY2022). Many students enrolled from the workforce as well, leading to greater lifelong learning.

- System for assessing level of achievement and diverse graduate school education Students Alumni

A system for assessing level of achievement implemented for all degree programs enables regular assessment of students' learning achievements and fine-tuned study guidance. In addition, diverse educational programs are provided through collaborations with research institutes and corporations, such as the Nuclear Regulation Human Resource Development Program and programs offered with the Collaborative Graduate School System.

- Diverse and international graduate school education Students Alumni

The graduate schools have many international students; the ratio of international students in all the degree programs combined was as high as 27.4% in AY2021. With the addition of educational programs such as the Cooperative Graduate School System and the Collaborative Graduate School System, the graduate schools have achieved diverse and international education.

- Unique student support system Students

The graduate schools have a unique support system to cover participation fees and travel costs for students to join international conferences. In addition, they have a unique young researcher development program for doctoral students aimed at boosting the careers of researchers who will lead the future.

### School of Science and Engineering

- Enhancement of education in data science Companies Students

The College of Policy and Planning Sciences spearheads a project named "Tsukuba DX Acceleration: Development of an Ambidextrous Ability to Envision New Enterprises through Interdisciplinary Co-creation," contributing to building a system for interdisciplinary industry-academia collaborative education and research in mathematics, data science and AI.

- Engineering education through project-based practical training Students Alumni

The College of Engineering Systems provides engineering education through practical training by providing three special subjects, namely "Tsukuba Robot Contest," "Contents Expression Engineering" and "Introduction to Megaproject Engineering."

### School of Informatics

- Development of advanced and global human resources Students Alumni

In addition to seamless English education over the four years of undergraduate studies, a 15-hour TOEIC prep course was offered to students by application. The percentage of students from other countries remained relatively high at 3.5% while the school maintained a high graduate school advancement rate of 75%.

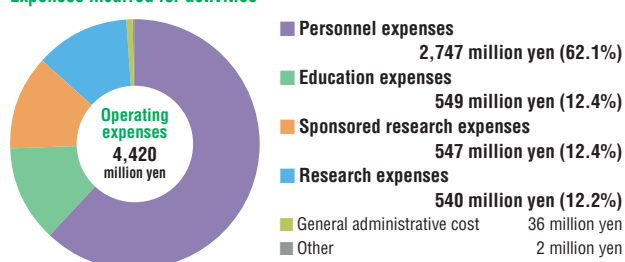
- Providing communal spaces for students through student lounge improvement Students Alumni

The school has improved its student lounge and other facilities, to give students space to use outside classrooms, especially during the COVID-19 pandemic, as lectures are delivered in different formats, such as face-to-face and remote lectures. Many students visit these lounges, which function well as places to interact with others. There is also a plan to use them for human resource development purposes involving graduates as well.

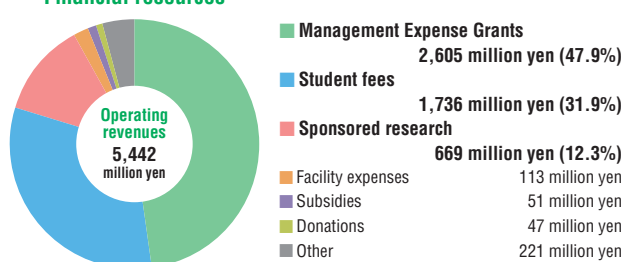


Student lounge

### Expenses incurred for activities



### Financial resources





## Faculty of Life and Environmental Sciences/Related Departments

### Faculty of Life and Environmental Sciences

#### ● Efforts to attract more external funding

Companies Alumni

The faculty took a wide variety of measures such as collecting information about various research support programs, subsidies, etc. and supporting activities that can lead to financing for faculty members and joint research through department URAs. Both the number and amount of sponsored research projects have remained high in AY2021 (AY2021: 63 projects, about 1,300 million yen). Collaboration with the companies and other entities working on these projects with the faculty has increased, and the number and amount of joint research projects has been steadily increasing since AY2018 (AY2021: 93 projects, about 350 million yen).

#### ● Enhancement of research centers

Companies Students Alumni

The faculty has multiple centers engaged in specialized research and education, each of which has achieved many results. Of these centers, the Shimoda Marine Research Center (R2\*: National-class Research Center) and Mountain Science Center (R3\*: Priority Training Research Center) were adopted for the Core-to-Core Program by the Japan Society for the Promotion of Science (JSPS) (the former in the Advanced Research Networks component and the latter in the Asia-Africa Science Platforms component). In addition, the Microbiology Research Center for Sustainability, which had been classified as a Priority Training Research Center at university level, was promoted\* to a National-class Research Center and is expected to grow further in the future.

### Graduate School of Science and Technology Graduate School of Life and Environmental Sciences

#### ● Efforts toward globalization of human resource development

Students Alumni

The degree programs in Life and Earth Sciences place particular emphasis on public relations activities for recruitment of excellent international students and provision of an environment that allows students to take courses in English, and have made proactive efforts to attract excellent international students through implementation of a double degree program (DDP) with overseas partner universities and involvement in human resource development projects organized by the Ministry of Education, Culture, Sports, Science and Technology and JICA. Consequently, they retained a high ratio of international students (29%, 241 students, in AY2021).

#### ● Utilization of monitoring results provided by the Office of Management for Teaching and Learning

Students Alumni

The degree programs in Life and Earth Sciences make use of the results of monitoring by the Office of Management for Teaching and Learning to inspect their educational activities and results themselves and accordingly promote continued improvement of their learning environment. Each degree program gets their steering committee and educational council to summarize opinions from students and faculty members under the leadership of a Degree Program Leader and accordingly works to optimize their learning environment in line with the policy of each degree program. In AY2021, special emphasis was placed on inspecting syllabuses and creating English syllabuses.

#### ● Expansion of international joint degree programs

Companies Students Alumni

The Joint Master's Degree Program in Sustainability and Environmental Sciences has been promoting a Joint Degree Program (JDP) with the Universiti Teknologi Malaysia (UTM) and Malaysia-Japan International Institute of Technology (MJIT) and has many international students from UTM. In AY2021, 15 applicants from UTM applied for admission to the program and seven of them were admitted, resulting in a significant increase in the number of students from UTM from the previous academic year. Furthermore, the program also acquired excellent graduate students from Asia, mainly Southeast Asia, through MJIT's human resource development project adopted by JICA and other channels, in addition to working to build an umbrella system for education and research in Southeast Asia in which the University of Tsukuba will play central roles.

#### ● Joint seminar of the Joint Master's Degree Program in Sustainability and Environmental Sciences

Students Alumni

A joint seminar included in the curriculum of the Joint Master's Degree Program in Sustainability and Environmental Sciences was held at an academic conference co-hosted with MJIT. This online seminar was attended by a total of 65 participants (faculty members and students) from five different countries, and three students of the program won the best presentation prize.

### School of Life and Environmental Sciences

#### ● Promotion of globalization, including enhancement of English programs

Companies Students Alumni

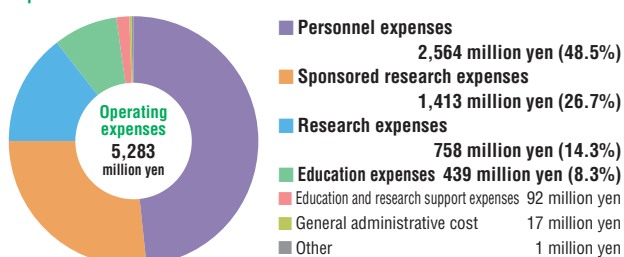
The school provides English programs in all of its colleges as the Interdisciplinary Course in Life and Environmental Sciences and accepts international students from many different countries, who account for more than 5% of its intake quota. In AY2021, 75 international students (6.9% of all students of the school), including those who were not able to travel to Japan, were learning in the school. The number of special auditors accepted by the school as non-regular international students increased compared to the previous academic year. In addition, the number of students going to study abroad also increased compared to the previous academic year despite travel restrictions caused by the COVID-19 pandemic as a result of special measures taken for students going to study abroad.

#### ● Promotion of tutorial education—Example of college activities

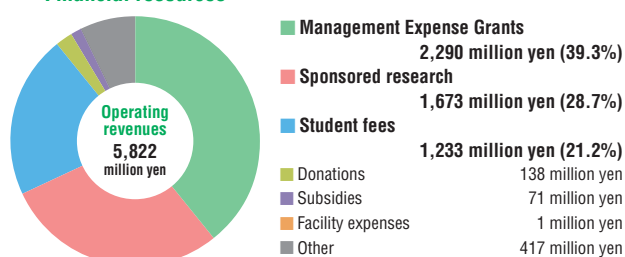
Companies Students Alumni

The College of Biological Sciences provides tutorial courses, such as "Technical English," in which a small group of students read and discuss English scientific articles under the instruction of a tutor, "Terakoya on Biological Topics," in which a small group of students learn through discussions, exercises, etc., and "Research Mind Support Program," which is a special practical laboratory training program. As some of these courses and classes are delivered in English, interaction between Japanese and international students is also expected.

### Expenses incurred for activities



### Financial resources



\* For more information about the functional categories (classifications) of Advanced Research Centers of the University of Tsukuba, please see "Construction of a Research Cycle System" on page 19.

## Faculty of Human Sciences/Related Departments

### Faculty of Human Sciences

- Increase in external funds and the total number of academic articles Companies Students

The number of projects selected for Grants-in-Aid for Scientific Research (as representatives or collaborators) rose from 140 to 150, while the amount of Grants-in-Aid acquired by the faculty remained about the same as in AY2020. At the same time, its sponsored and joint research income increased to 33.55 million yen, up 21.2% from AY2020. Furthermore, the number of academic articles, either in English or Japanese, also increased from 295 to 304. While the total number of authored books was about the same as in AY2020, the number of books written in English increased by 50%, from 4 to 6.

- Expansion of international exchanges Students

The faculty was selected to receive support in the Educational Strategy Promotion Project to jointly develop the global competence of graduate students with Ohio State University, a CiC partner, and carried out related activities, including workshops. Furthermore, it has been selected for the Inter-University Exchange Project of the Ministry of Education, Culture, Sports, Science and Technology, CAMPUS Asia Plus, for AY2021.

### Graduate School of Comprehensive Human Sciences Graduate School of Comprehensive Human Sciences (former program)

- Accelerated efforts to internationalize graduate education and improve article productivity Students

The degree programs in Education launched the Development Program for Professionals in Education Policy Management Contributing to Solving Global Issues (adopted for the Inter-University Exchange Project by Ministry of Education, Culture, Sports, Science and Technology) as part of the CAMPUS-Asia6 Program, and held an online international student conference entitled "Developing Collaborative Research in Education: From Global and Interdisciplinary Perspectives" with seven overseas partner universities (attended by 120 participants, including 107 international participants).

The degree programs in Disability Sciences co-hosted an English education program with Ohio State University to improve English communication skills (attended by over 100 participants). The degree programs in Psychology implemented the "Advanced Education Program for Development of Internationally Competitive Psychological Researchers."

The degree programs in Rehabilitation Science and in Counseling Science jointly held the "FD Program for Improvement of Article Productivity" online again for the second consecutive year (attended by 88 participants).

- Strengthening English communication skills and promoting career path development Students

The Master's and Doctoral Programs in Disability Sciences implemented "Creation and Submission of English Articles (2)" (attended by 104 participants, including not only students and faculty members of the programs but also students from other programs). They also held an international exchange seminar with Kongju National University in Korea, in which research presentations and discussions took place on the realities and challenges in special needs education, together with graduate students from both sides.

The Master's and Doctoral Programs in Psychology hosted an

English presentation competition for graduate students (attended by 30 participants, including both faculty members and students). The Doctoral Program in Lifespan Developmental Sciences co-hosted a FD program on doctoral career support with the degree programs in Rehabilitation Science and in Counseling Science, in which those who had completed these programs shared their experiences finding employment in research institutions after earning their PhD (attended by 44 participants, including both students and faculty members).

### Master's Program in Education

- An international symposium Students Alumni

The graduate school holds an international symposium each year by establishing a network of 45 different countries in the world based on a database of those who have been accepted by the Master's Program in Education to complete its internship training program for teachers from abroad. In February 2022, teachers from Mexico, Cambodia, Singapore and Japan gave presentations on their educational practices in the face of the COVID-19 pandemic under the theme of "Rethinking School Education in the Wake of the Coronavirus Pandemic" and challenges and prospects for school education in the era of the new normal with COVID-19 were discussed. This symposium was attended by 95 participants (including 20 from abroad).



An international teaching trainee introducing his home country to elementary school students

### School of Human Sciences

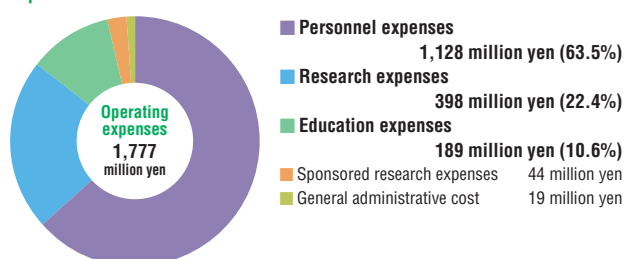
- A survey on learning and career development and an improved employment rate Companies Students

A survey on learning and career development was conducted on the students of the School of Human Sciences from December 1, 2021 through January 24, 2022, and 199 out of the 526 students (37.8%) responded. Their responses on the status of admission, status of learning, status of student life and status of career development indicated that they had high expectations and interests in course studies and their satisfaction rate with course studies also reached 77.9%. While 61.8% of the students had some concern about employment, their employment/higher education advancement rate was 87.2%, up from 85.6% in the previous academic year.

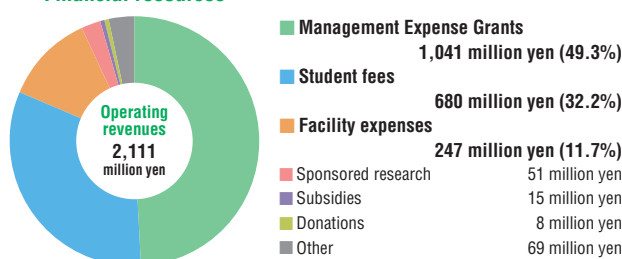
- Providing tutorial education utilizing graduate students Companies Students

The school's tutorial education has been selected to receive support in the University of Tsukuba Educational Strategy Promotion Project. A total of 45 participants, consisting of freshmen and sophomores of the school, graduate students and faculty members, were divided into three groups, and carried out activities online. This has given the undergraduate students invaluable opportunities to improve their creative learning and design thinking skills through having mutual exchanges concerning learning, student life, career paths and other topics by going beyond the boundaries of different years and colleges and listening to graduate students about their research topics and methods.

### Expenses incurred for activities



### Financial resources



# Faculty of Health and Sport Sciences/Related Departments

## Faculty of Health and Sport Sciences

- The Advanced Research Initiative for Human High Performance (ARIHHP) recognized as a nationwide hub for collaboration and joint research Companies Students Alumni

Having accumulated achievements, such as undertaking open-invitation research projects (13 internal and 30 external projects) using operational grants (functional enhancement expenses), expenses for the formation and enhancement of a nationwide hub for collaboration and joint research, etc., the Advanced Research Initiative for Human High Performance (ARIHHP) was approved by the Ministry of Education, Culture, Sports, Science and Technology as the first nationwide hub for collaboration and joint research in the field of health and sport sciences. In March 2022, an on-site and online hybrid symposium was held to commemorate the accreditation with the attendance of 146 people. Many guests, including Commissioner Koji Murofushi of the Japan Sports Agency and Director-General Takakuni Ikeda of the MEXT Research Promotion Bureau, delivered congratulatory speeches and offered recommendations.

- Hosting the Swiss National Team's pre-camp for athletes' final training before the Olympics Students Community

The faculty played host to 52 members of the Swiss National Team for their final training before the 2020 Tokyo Olympic Games, which was postponed one year and was held in 2021, in cooperation with Tsukuba City and Ibaraki Prefecture. Faculty members and students of the Joint Master's Program in International Development and Peace through Sport (IDS) of the Graduate School of Comprehensive Human Sciences and other programs joined forces to realize a safe and sound pre-camp with no cases of infection in the face of the need to take special measures against COVID-19. The Swiss athletes' achievements in the Olympics include winning a silver medal.

## Graduate School of Comprehensive Human Sciences Graduate School of Comprehensive Human Sciences (former program)

- Maintaining a high intake quota fulfillment rate and ratio of international students Students

Intake quotas were filled for all degree programs, including 166.7% for the degree programs in Coaching Science, 133.3% for the Joint Doctoral Program in Advanced Physical Education and Sports for Higher Education, 108.3% for the degree programs in Sport and Wellness Promotion, 106.7% for the Master's Program in Physical Education, Health and Sport Sciences, and 100.0% for the Doctoral Program in Physical Education, Health and Sport Science. In addition, the ratio of international students has been maintained at a consistent level for all degree programs; it was particularly high in the English-based Sport and Olympic Studies degree program, at 87.5%, followed by 40.0% for the Joint Master's Program in International Development and Peace through Sport, 33.3% for the Doctoral Program in Sports Medicine, and 26.7% for the degree programs in Physical Education, Health and Sport Sciences.

- Online career development forum Companies Students

For the Master's Program in Physical Education, Health and Sport Sciences, the graduate school invited four lecturers to give a talk entitled "Career Development Forum: Perspectives for the Future" as a part of career building support. This online forum on Zoom revolved around four topics: Careers with Companies, Careers in Education,

Coaching Careers and Careers in Research.

- Maintaining a high degree conferral rate Students

The degree conferral rates were extremely high, starting with 133% for the Doctoral Program in Coaching Science, followed by 100% for the Joint Doctoral Program in Advanced Physical Education and Sports for Higher Education. Student advising was carried out smoothly for all students, including those who required extra years.

- Promoting internationalization of the education curriculum Companies Students Alumni

The Master's Program in Physical Education, Health and Sport Sciences provides a basic Tsukuba Summer Institute (TSI) course as an opportunity for Japanese students to learn alongside international students, and the Tsukuba International Academy for Sport Studies (TIAS) teaches all classes in English. The Doctoral Program in Coaching Science has created a system for its international exchange program and offers financial support. In this way, each program has been working to make education more international.

## School of Physical Education, Health and Sport Sciences

- Activities during the COVID-19 pandemic Companies Students Alumni

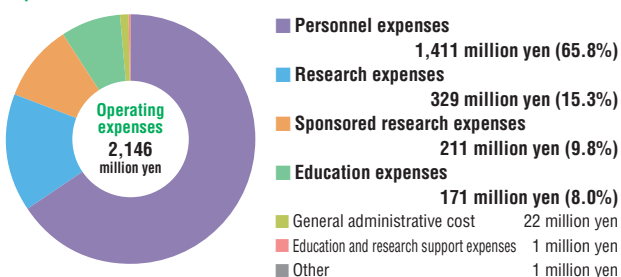
While various activities were limited by the COVID-19 pandemic, the employment rate remained high. Graduates have found employment in teaching, government, and a wide range of companies. Furthermore, there have been steady increases in graduates working for health-related companies, sports companies, and media/publishing companies.

In addition, students of the school have consistently made achievements; the number of times they won commendation from the school president in the competition category (recognizing individuals and teams who have achieved excellent results in competitions inside or outside Japan), which declined to 15 in AY2020 from 29 in AY2019 due to COVID-19, rose back to 35 in AY2021.

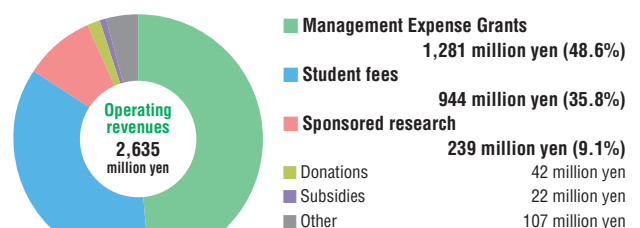
- Achievements in international events Companies Students Alumni

In AY2021, in which some international events were resumed, eleven students made outstanding achievements for Japan (including for the age group) as a result of enhancing the school's support programs (e.g., medical science support, development of training environment, and academic support) aimed at increasing the number of students who can compete in international events. As part of the support for students with disabilities, the school developed its systems to enable use of training equipment and improved universal access, for example, by adding ramps and making restrooms accessible. Thanks to these efforts, four students were able to rank high at international events (in canoeing, tennis, track and field, and swimming). Their achievements were particularly outstanding in canoeing and tennis.

### Expenses incurred for activities



### Financial resources



## Faculty of Art and Design/Related Departments

### Faculty of Art and Design

#### ● Efforts to attract competitive research funds

Companies Students

The faculty held Grant-in-Aid FD workshops and collaborated with department URAs and the Research Promotion Office to provide support for writing Grant-in-Aid applications. In addition, applications were requested for research projects and some were selected, with preference given to younger students. The selected ones were used to apply for Grants-in-Aid. There was a case in which one such research project was adopted as fundamental research, resulting in the first acquisition. Furthermore, a subsidy system was established to promote the globalization of research by providing support for submission of articles to overseas academic journals and other publications.

#### ● Reborn Art Ball Project activities

Companies Community

The Reborn Art Ball Project 2021 (a cultural program promotion project by Ibaraki Prefecture) run by the Faculty of Art and Design was held inside and outside Ibaraki Prefecture. It received high praise as a unique research and education initiative that combines art and sports and was selected as a cultural program for the 2020 Tokyo Olympic and Paralympic Games.



Reborn Art Ball Project activities

### Graduate School of Comprehensive Human Sciences Graduate School of Comprehensive Human Sciences (former program)

#### ● Maintaining high application-to-enrollment ratios

Students

In the art and design degree programs, the application-to-enrollment ratio in AY2022 for the master's program was 1.57 for Art, 2.55 for Design and 1.53 for Heritage Studies, while the ratio for the doctoral program was 0.85 for Art (the average of the past three years is 1.66), 1.66 for Design and 2.6 for Heritage Studies.

#### ● Providing distinctive educational programs

Companies Students

The "construction of SDGs-oriented art education programs through collaborative art projects between the university and affiliated schools" (the degree programs in Art), "strengthening of international collaboration for digital creativity education and enhancement of internal quality assurance that guarantees international competitiveness" (the degree programs in Design), and "creation of online education and research content in English based on international cooperation between universities and construction of operational models" (the degree programs in Heritage Studies) have been selected to receive support in the University of Tsukuba Educational Strategy Promotion Project for AY2021, and have been implemented to promote the globalization of education according to the unique themes of the respective degree programs.



Art Medal Workshop

#### ● Providing a social contribution project and international education program in cooperation with other organizations

Companies Students Community

Selected as the AY2021 program to receive support in the Graduate School of Comprehensive Human Sciences Strategy Project, the Art and Design programs implemented their concept entitled "Cooperation with the Local Community and Companies for Art Management Foundation Building" in collaboration with the university, private companies, and local governments. Activities to support art were carried out through regional collaboration (in cooperation with the Degree Program in Art). In the World Heritage Studies program, a certification program using the endowed course in nature conservation was carried out jointly with the Faculty of Life and Environmental Sciences and classes were held in English and awarded a completion certificate to 12 students.



Fieldwork

### School of Art and Design

#### ● A transition to a more flexible curriculum that allows for interdisciplinary learning

Companies Students

In AY2021, the school made a shift to a new educational system to enable more flexible, interdisciplinary learning. This allows students to take basic specialized subjects in many different disciplines, as well as interdisciplinary subjects, to broaden their horizons around the broad world of art and design and accordingly select their areas of specialty. Although some classes were held online in AY2021 to prevent COVID-19 infection, about 80% of all classes were carried out face-to-face with adequate safeguards.



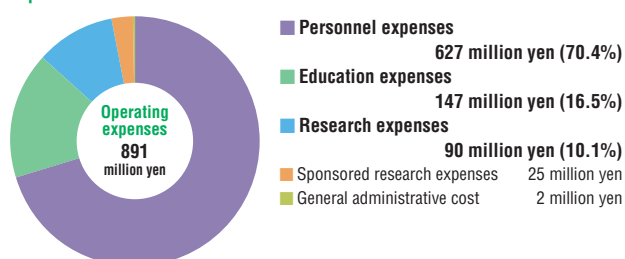
Classes

#### ● The 9th Art Writer Award for High School Students/CAIR 2022

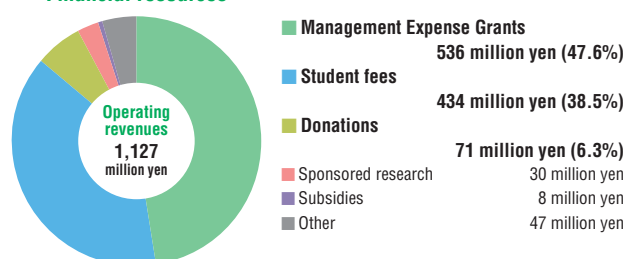
Companies Students

As part of its high school-university collaborative efforts in AY2021, the school hosted the 9th Art Writer Award for High School Students, inviting high school students from around the world to submit essays about art either in English or in Japanese. What makes this contest unique is that students of the school participate in the planning and implementation of the event, as well as the selection and evaluation of applicants, which gives them the opportunity to learn while being involved in the actual processes of global human resource development. Besides this, another event, the Campus Artist in Residence 2022 (CAIR 2022), was held, in which students of the school and overseas university students specializing in art jointly created works through online communication and their works were exhibited.

### Expenses incurred for activities



### Financial resources



## Faculty of Medicine/Related Departments

### Faculty of Medicine

- Greater emphasis on the ability to disseminate research results

Companies Students Alumni

With the aim of establishing a center of excellence through the exploration of new areas of research and promotion of internationalization, the faculty has been promoting quality academic research, as well as research projects of great clinical significance. Consequently, in AY2021, the number of international joint papers increased by 30% from AY2020, while the total number of citations was 2,966, up nearly 900 from AY2020. In addition, the number of patent applications increased by 30 in AY2021, compared to AY2020.

- Activities to implement research findings in society

Companies Students Alumni Community

The research project “Development of a Hydrogen Fuel Cell Bus-based Disaster Prevention and Infection Control System,” adopted for the Cross-ministerial Strategic Innovation Promotion Program (Cabinet Office), was implemented to realize Society 5.0 against large-scale disasters.

In addition, Professor Satoshi Yamazaki was awarded the 18th Japan Society for the Promotion of Science Award for his research work in “Development of Hematopoietic Stem Cell Ex Vivo Expansion.”



Hydrogen fuel cell bus



Professor Satoshi Yamazaki (second from right)

### Graduate School of Comprehensive Human Sciences Graduate School of Comprehensive Human Sciences (former program)

- Promoting internationalization and increasing research capacity

Companies Students Alumni

The intake quota fulfillment rate was over 100% for five out of the eight programs, and was 95% for the entire graduate school. The ratio of international students—an indicator of how global the program was—was high at 83% for Master’s Program in Public Health, 73%

for International Joint Degree Master’s Program in Agro-Biomedical Science in Food and Health (GIP-TRIAD), and 30% for Master’s Program in Neuroscience, and was 18% for the entire graduate school.

- Promotion of international and interdisciplinary exchanges and reform of medical education

Companies Students Alumni Community

The Master’s Program in Medical Sciences and Doctoral Program in Medical Sciences jointly hosted a summer research program online, participated in by 187 graduate students from around the world. This program received a president award (education) as it was highly evaluated as an initiative contributing substantially to attracting excellent overseas students to graduate programs of the University of Tsukuba while at the same time widely disseminating medical science research of the university.

Interdisciplinary education was also implemented through dual degree programs between different areas of research in engineering, design, and kansei, behavioral and brain sciences. The school carried out reform of medical education through special programs, such as the Training Program for Basic Medical Researchers with a Guarantee of Pathology Board Certification, Development of Human Resources Who Can Deal with All Phases of Radiation Disasters, and Development of Medical Human Resources Who Can Realize Optimized Cancer Treatment.

### School of Medicine and Health Sciences

- Recruiting international and research-oriented human resources through diverse admission processes

Companies Students Alumni

The school holds diverse international entrance examinations in an effort to bring in students who will play a role in the global sphere. The College of Medicine recruited a student through a special admission system for students with an International Baccalaureate qualification, a student through a special admission system for students from overseas education programs, and a research-oriented student through a special admission system for research-oriented students.

- CoMed Tsukuba honored by the Minister of State for Special Missions

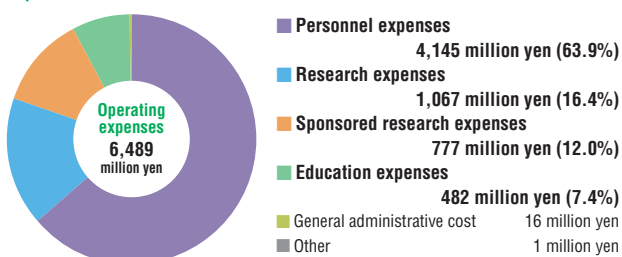
Companies Students Alumni Community

CoMed Tsukuba, a club primarily for students of the School of Medicine and Health Sciences, held health education activities, mostly in Ibaraki Prefecture, such as CPR and heatstroke workshops, earning it a commendation from the Nihon Zenkokuai, and was selected for the Youth of the Year Who Are Creating the Future by the Cabinet Office. On November 25, 2021, it received a certificate of merit from the Minister of State for Special Missions.

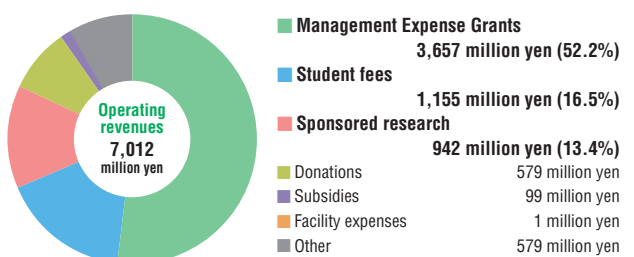


Youth of the Year Who Are Creating the Future awarding ceremony

### Expenses incurred for activities



### Financial resources



## Faculty of Library, Information and Media Science/Related Departments

### Faculty of Library, Information and Media Science

#### ● Efforts to acquire external funds and QS rankings 2021

Companies Students Alumni

For acquisition of Grants-in-Aid for Scientific Research, application improvement support by researchers within the faculty and external service providers has been launched in addition to the priority support by the URA. Consequently, the amount of newly acquired Grants-in-Aid increased 1.6-fold compared to the previous academic year, and the adoption rate also rose to 42%, a year-on-year increase of 7%, both of which were the highest in the Third Mid-term Plan period.

The faculty also ranked 40th in the world and 1st in Japan in the library information management category in the QS rankings 2021.

#### ● Collaboration with local communities and society

Companies Students Community

Earthquake disaster materials preserved by the University of Tsukuba for continued investigation and research were provided for a special exhibition on Futaba Town that was held at the Great East Japan Earthquake and Nuclear Disaster Memorial Museum in July and August 2021.

The faculty has also developed remote-controlled energy-saving robots, for which demonstrations have been implemented in collaboration with companies and local communities. A robot that can create a virtual experience of walking through the city of Wakkanai using a camera received media coverage by NHK and two other companies.

In addition, two commissioned projects from the Ministry of Education, Culture, Sports, Science and Technology, "school librarian training" and "training for newly appointed chief librarians," were carried out with adequate safeguards against COVID-19, face-to-face and online, respectively.



Robot demonstration

### Graduate School of Comprehensive Human Sciences Graduate School of Library, Information and Media Studies

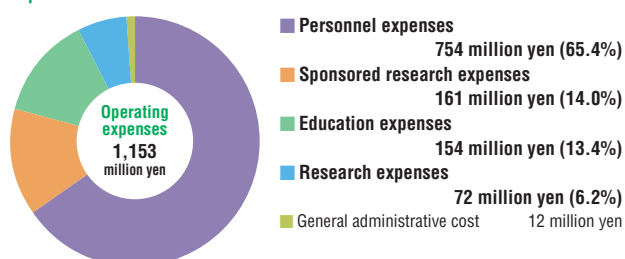
#### ● Improved application-to-enrollment ratio, recruitment fulfillment rate, and degree conferral rate

Students

The application-to-enrollment ratio, recruitment fulfillment rate, and degree conferral rate all improved from AY2020 to AY2021.

The application-to-enrollment ratio rose from 2.35 to 3.07 for the Master's Program, and from 1.16 to 1.58 for the Doctoral Program. The

#### Expenses incurred for activities



recruitment fulfillment rate also increased from 124.1% to 137.0% for the Master's Program, and remained about the same for the Doctoral Program, at 116.7%. The degree conferral rate for the Doctoral Program improved from 7.5% to 13.6%.

#### ● Many awards granted to students

Students

A second-year student in the Master's Program won the Excellent Presentation Award at the Art and Science Forum 2021, and the top award at the 48th Visual/Media Computing Conference, and a first-year student in the Master's Program received the Best Paper Award at IEVC 2021. Besides them, a proposal made by a second-year student in the Master's Program was adopted for the Exploratory IT Human Resources Project (The MITOU Program) run by the Information-technology Promotion Agency (IPA).

### School of Informatics

#### ● Winner of many awards including selection for the Exploratory IT Human Resources Project

Companies Students Alumni

Four students from the College of Media Arts, Science and Technology (including two certified as Super Creators) and one from the College of Knowledge and Library Sciences were selected for IPA's Exploratory IT Human Resources Project (The MITOU Program). The other awards granted to students of the school include the highest award in Japan in the James Dyson Award 2021 (two students from the College of Media Arts, Science and Technology) and an award in SONY U24 CO-CHALLENGE 2021 (a student from the College of Knowledge and Library Sciences). In this way, many students in the school have won awards from academic societies and contests in Japan and around the world.



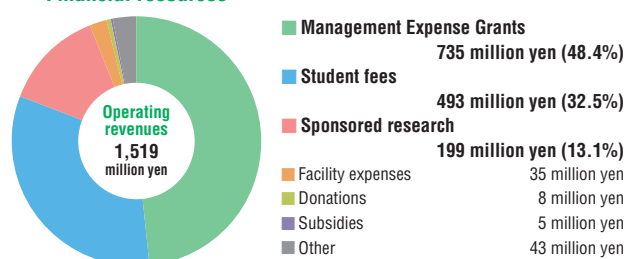
Winner of the highest award in Japan (See-Through Captions)

#### ● PBL-based practical education through industry-academia partnerships

Companies Students Alumni

Group PBL-based classes are held through industry-academia partnerships, for example, the Education Network for Practical Information Technologies (enPiT) (implemented as an education program funded by the Ministry of Education, Culture, Sports, Science and Technology from AY2016 through AY2020, and as an independent program in AY2021) and the Embedded Technology Campus OJT program (launched in AY2009), run in collaboration with the Campus OJT Industry-University Education Foundation, in an attempt to develop innovative people who can take the initiative to resolve issues, making effective use of ICT.

#### Financial resources



## School of Integrative and Global Majors

### ● Development of global human resources

Companies Students Alumni

The School of Integrative and Global Majors runs and manages cross-cutting degree programs straddling undergraduate and graduate education. All programs in the School of Integrative and Global Majors are taught in English and the ratio of international students is 60.3% on average. Tackling daily challenges in this environment develops students' expertise as well as their global perspective, and graduates find employment at places like universities, government agencies, and research institutes in Japan and abroad, becoming active in various fields.

### ● The achievement assessment system CPx put into operation

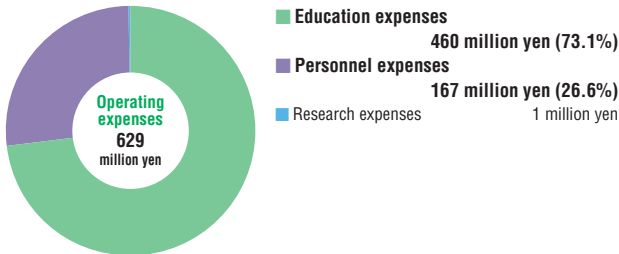
Students

The Ph.D. Program in Humanics developed the Career Platform for Humanics (CPx), an original system aimed at assuring quality for the program and visualizing the competency achievement of each student, and put it into operation in AY2021. CPx is a system on which self-assessment results of individual students are checked by the faculty

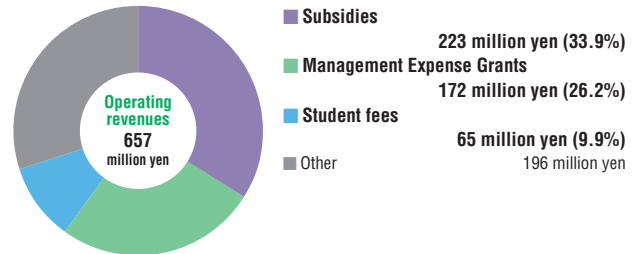
members in charge of them, who then provide them with feedback. One key element of studies in this program is to merge different disciplines to create new areas of research. The introduction of CPx enables the program to provide research and learning support to students at a higher level, for example, by giving them specific advice concerning their own weaknesses.



### Expenses incurred for activities



### Financial resources



## School of Comprehensive Studies

### ● Establishment of a new educational organization based on "transferrable skills education"

Students

In AY2021, a new school named the "School of Comprehensive Studies" was launched with the educational goal of helping students develop abilities in academic thinking that transcend the barriers between the humanities and sciences and independent career building for the future, by taking advantage of the broad spectrum of academic disciplines covered by the University of Tsukuba. In its first year (AY2021), 420 students were admitted to the school (an application-to-enrollment ratio of 2.7). Students of the school learn in this school in the first year, and move on to the second year of study in one of the 24 colleges and specialized schools excluding the School of Physical Education, Health and Sport Sciences based on their aspirations, grades in the first year, and aptitudes. As a result of a range of transition support, an advanced transition algorithm, etc., about 90% of the students were able to move on to the college/specialized school of their first, second or third choice.

### ● Generous support helping students move on to the college/specialized school of their choice

Students

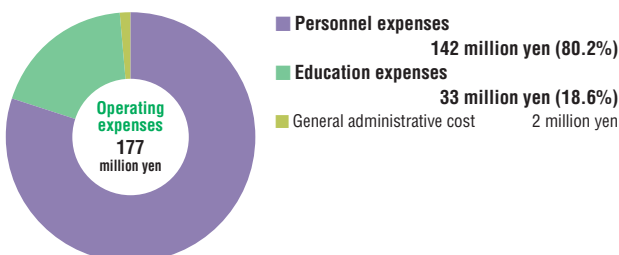
The Academic Support Center has been established to provide

students with counseling and other support they need. In particular, it has provided consultation to help students in designing course registration plans, selecting subjects, and so on, through specialist staff members. A total of 780 students have utilized this consultation service. Besides this, other transition support includes implementing various kinds of guidance sessions to give students a deeper understanding of individual colleges and specialized schools, and providing information through the website, public relations materials, and other channels.

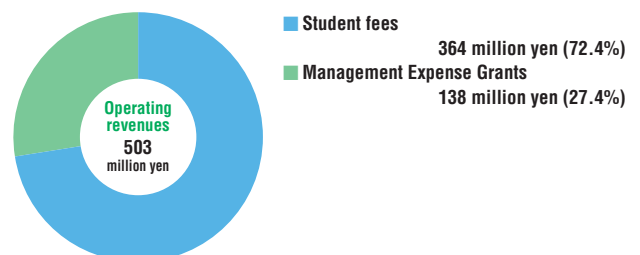


Left: Academic Support Center Right: Consultation on course registration planning

### Expenses incurred for activities



### Financial resources



## University of Tsukuba Library, Centers, Etc.

### University of Tsukuba Library

- Enhancement of library services under the COVID-19 pandemic Students Alumni Community

Continuing from the previous academic year, the library has been in operation with adequate safeguards against COVID-19.

In June 2021, the library began to allow visitors to use library materials by visiting it in person after a referral. On-site use of the library by graduates and former faculty members with their own library user cards for visitors also became permitted again in December 2021.

At the same time, the library has also been striving to enhance its non-on-site services. It became possible to pay with a credit card when mailing copies to designated addresses in September 2021 for greater convenience.

In addition, a pilot chat reference service was launched in March 2021 as a tool for casual inquiries such as how to use the library. It also implemented an e-book trial reading service for four months, from June 7 through October 6, 2021, to enhance electronic content that can be accessed remotely.

### International Institute for Integrative Sleep Medicine (IIIS)

- Worldclass research in sleep medicine Companies

The institute carried out research activities (59 peer-reviewed papers published in AY2021) using a total amount of 1.26 billion yen of external research funds, such as those for the WPI project and the Moonshot Research and Development Program, run by the Japan Agency for Medical Research and Development. The institute was highly evaluated in the final-year evaluation of the WPI project as follows: "It is regarded as a world leader in the field of sleep research."

- Producing excellent research results Companies

Having their past research results recognized, Vice Director Takeshi Sakurai won the 32nd Tsukuba Prize for identification of a discrete neuronal circuit that induces a hibernation-like state with low body temperature and metabolism, and Assistant Professor Arisa Hirano was awarded the Young Scientists' Award in the Commendation for Science and Technology by the Minister of Education, Culture, Sports, Science and Technology for her research on the control mechanism of CRY, a protein critical for the circadian clock.



Vice Director Takeshi Sakurai (center)



Assistant Professor Arisa Hirano (third from right)

### Center for Education of Global Communication (CEGLOC)

- Measures for improvement of foreign language learning Students

As part of its distinctive educational programs, CEGLOC administered TOEIC® IP tests (Speaking & Writing) for juniors of four colleges. It also started a recognition system for best-practice foreign language activities, which recognized three students in AY2021. In German language education, Goethe-Zertifikat tests (Start Deutsch A1/A2) were introduced to increase motivation for foreign language learning.

- International conferences, symposiums, etc. Companies Students Alumni

CEGLOC co-hosted the "Future-oriented Japanese Language Education" symposium with Osaka University, and the FD workshop on "Online Teaching: Tips and Sharing Experience" with the Ibaraki Branch of AJALT. It also provided a one-day workshop for faculty members (four times a year), entitled "How to Deliver Effective Classes in English."

- Development and publication of online learning materials Companies Students Alumni

The Center for Distance Learning of Japanese and Japanese Issues multi-lingualized learning materials of various kinds, put the online dictionary "Reading Tutor" into operation, resumed the operation of the Learning Item Analysis System, and developed "Japanese Language Magnet," a Japanese language course on JV-Campus.

### Center for Diversity, Accessibility and Career Development

- Awarded GOLD for the fourth time in the PRIDE Index 2021 Companies Students Alumni

The center carried out several FD training sessions to promote the basic principles and guidelines for responses which the university has established, ahead of other Japanese universities, to form the core of its support for LGBTQ students, as well as to increase people's awareness. These initiatives have earned the center its fourth GOLD in the PRIDE Index 2021.

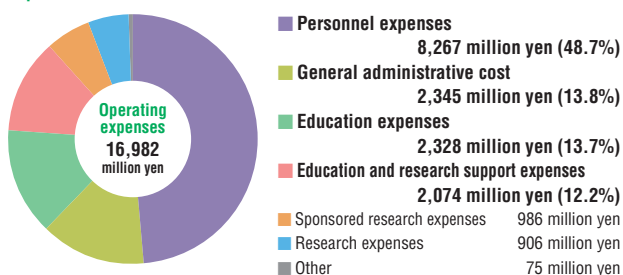
- Multilayered learning support Companies Students Alumni

The center provides multilayered learning support to students with disabilities based on assessment results. It was authorized as a Joint Usage Education Center (Diversity & Inclusion Education Center) again, and was used as a joint center for FD/SD training sessions and the support information delivery service, while communicating information nationwide, including publishing e-learning content.

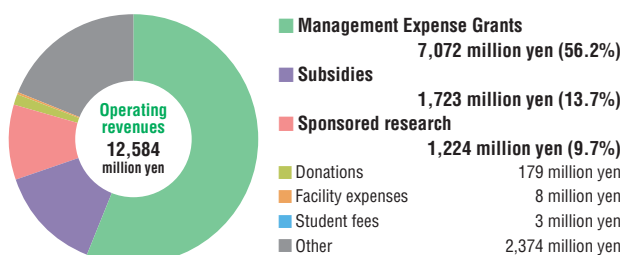
- A wide range of career support Companies Students Alumni

The center created the "Career Support Guidebook" and other materials in cooperation with private companies and other partners to help students envisage their careers and lives after moving on to graduate school. It also started pilot operation of the Web salon system PhxDxFUTURE as a platform for PhD human resources.

### Expenses incurred for activities



### Financial resources





## Life Science Center for Survival Dynamics, Tsukuba Advanced Research Alliance (TARA)

### ● Focus on research related to ontogenetic survival

Companies

The center has undertaken research on many different mechanisms supporting ontogenetic survival and has published academic articles, including those on detection of aortic aneurysms (Cell Reports Medicine) and discovery of a mechanism by which an intestinal hormone regulates metabolism (Nature Communications), attracting a lot of attention.

In addition, Assistant Professor Naoki Okamoto won the Young Scientists' Award in the Commendation for Science and Technology by the Minister of Education, Culture, Sports, Science and Technology in AY2021 for his research on the endocrine mechanism of insects.

The amount of sponsored research income increased significantly from about 64 million yen to about 1,018 million yen as a result of implementation of drug discovery and other basic research support programs in life science, Advanced Research & Development Programs for Medical Innovation (AMED-CREST), etc.

### ● Strengthening industry-academic collaboration through installation of cryogenic electron microscopes

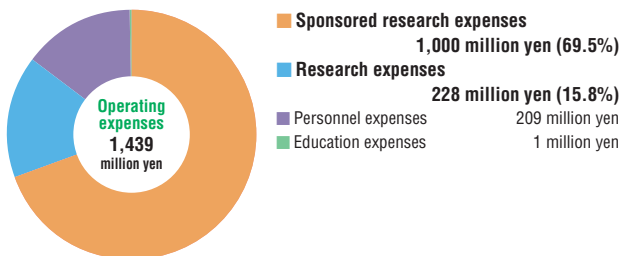
Companies

The laboratories of the center underwent a major upgrade to further strengthen its system for structural biology research, which the center has been promoting for years now, with the aim of creating an environment that facilitates expansion of its framework for industry-academia collaboration that reflects corporate needs; several leading-edge cryogenic electron microscopes were installed and a platform was constructed to effectively promote research aimed at resolving social issues.

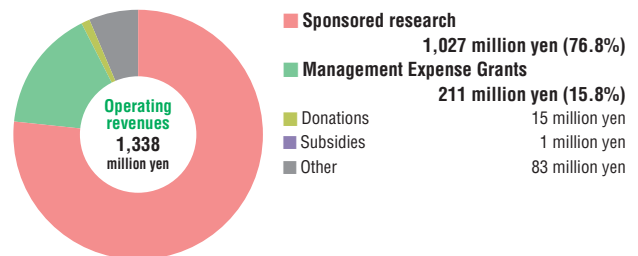


Cryogenic electron microscope

### Expenses incurred for activities



### Financial resources



## Center for Computational Sciences

### ● Research results of the Advanced Interdisciplinary Computational Science Collaboration Initiative

Companies

As a result of adopting 74 research project topics and implementing joint research on them in an interdisciplinary joint research program using the computational resources of the center, 251 academic articles were published. Furthermore, 72 research projects (including collaborative research) were selected for Grants-in-Aid for Scientific Research, up 12 from the previous academic year.

### ● Rated S as a joint use/joint research center

Companies

The center was rated S in the end-of-term evaluation during the Third Mid-term Goals Period as a joint use/joint research center approved by the Ministry of Education, Culture, Sports, Science and Technology in the Advanced Interdisciplinary Computational Science



Supercomputer Cygnus

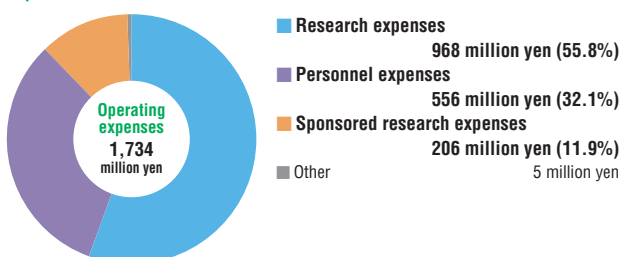
Collaboration Initiative. Only two other centers have received an S evaluation. The center was highly evaluated for its unique system, software and library development and remarkable research results in medical science and other fields, which was considered to indicate its active joint use/joint research activities.

### ● A numerical cosmological neutrino simulation using Fugaku succeeded

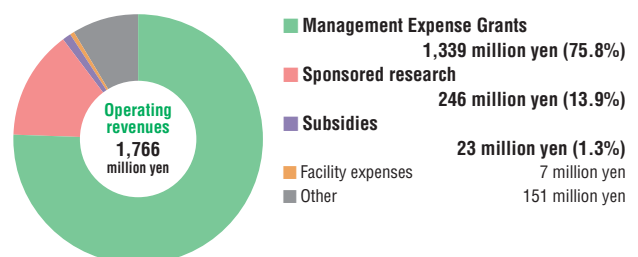
Companies

The center became the first in the world to adopt a completely new method called "Vlasov simulation" and succeeded in implementing a large-scale numerical simulation of the motion of neutrinos in cosmological structure formation using the entire system of the supercomputer Fugaku. This research paper was selected as a Gordon Bell Prize finalist. Although it did not win the prize, the center became a finalist for the first time in nine years and it became the only research project using Fugaku to be selected. In this sense, it was a great achievement for us.

### Expenses incurred for activities



### Financial resources



## Tsukuba-Plant Innovation Research Center

- **Creating research achievements linked to the development of world-leading genetic transformation technology and development of new industries** Companies

The center carries out translational research linked from basic, through applied, to practical research. In AY2021, it conducted research on the coexistence of legume plants and microorganisms, developed a genetic modification vector enabling gene transfer to various plants, and published 65 original articles, including those about many excellent research results leading to the development of new industries. Also, as a joint-use research center accredited by the Ministry of Education, Culture, Sports, Science and Technology, T-PIRC planned and carried out 45 joint-use/joint research projects to boost Japan's research capabilities in the field of transformed plant design.

- **Promotion of industry-academia collaborative projects, involvement in a space development project, and internationalization efforts as a research center** Companies

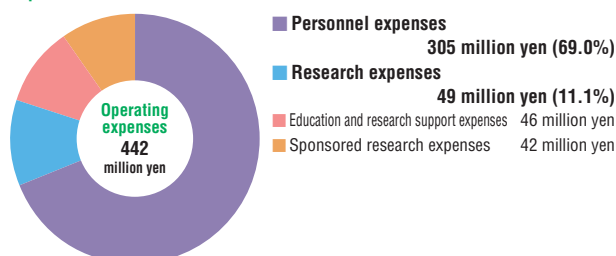
As the core center for the National BioResource Project, the center aided in obtaining germplasm from overseas and worked on the

development of new products using germplasm, advancement of new breeding technologies, and social implementation, which has earned it excellent ex-post evaluation results (comprehensive evaluation score: 7.9 out of 10). In the area of industry-academia collaboration, it carried out JST/OPERA's Creation of Innovative Advanced Technology for the Future of Food program, as well as various kinds of special collaborative research projects (mega-scale joint research projects with private-sector partners) and strategic zone projects. In this academic year, the center was also adopted for the Strategic Program for Accelerating Research, Development and Utilization of Space Technology (Stardust Program) to support Japan's space development in the field of food production. In addition, it has been striving for further internationalization as a research center through strengthening cooperation with Michigan State University and many other overseas organizations.

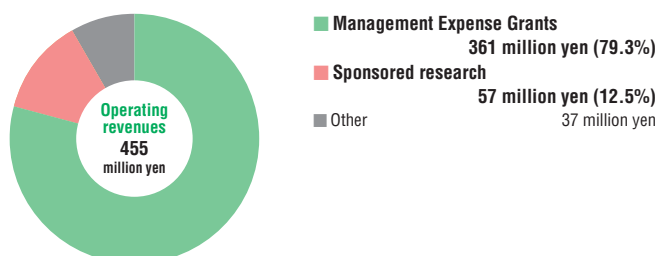


Genome-edited high GABA tomato

### Expenses incurred for activities



### Financial resources

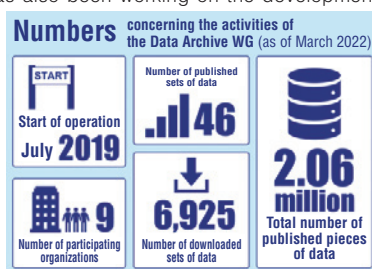


\* Besides the above, some expenses incurred by faculty members operating at the center and financial resources for implementation of their activities are reported in the faculties to which they belong.

## Center for Research in Isotopes and Environmental Dynamics (CRiED)

- **Research results of joint use/joint research center projects** Companies

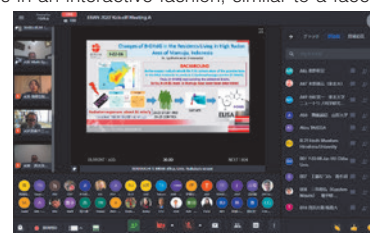
CRiED published 33 academic articles, of which three ranked among the world's top 10% in terms of the field-weighted citation impact (FWCI), an indicator that measures the quality of academic papers. The FWCI value was higher than the global average (1.00) for six articles and the highest one was 15.55, followed by 7.68 and 4.89; the results were excellent. CRiED has also been working on the development of an environmental radioactivity database. As of March 2022, it has assigned Digital Object Identifiers to over 2.06 million pieces of data and has disclosed the data to researchers and other people around the world. It is the only database of its kind in



the world that can publish data from IAEA, the Forestry Agency and TEPCO as well.

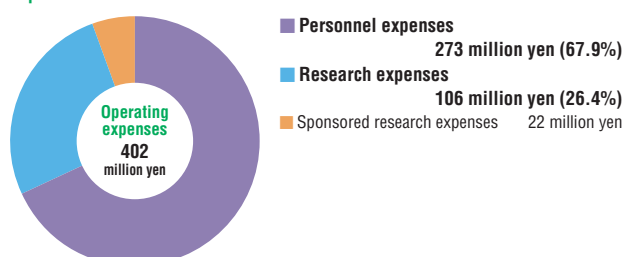
- **Hosting ERAN meetings (international conferences)** Companies

CRiED held a kickoff meeting and briefing meeting using the online conference tool Remo in cooperation with network members. The former was attended by 180 participants from around the world, and the latter by 169 participants. As Remo, which can create virtual booths, allowed poster presentation participants to have active discussions and exchanges in an interactive fashion, similar to a face-to-face environment, these creatively designed meetings effectively promoted collaborative research with researchers in different parts of the world even during the COVID-19 pandemic.

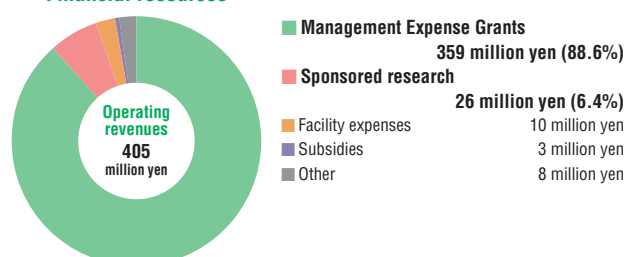


ERAN2022 Kickoff Meeting

### Expenses incurred for activities



### Financial resources



\* Besides the above, some expenses incurred by faculty members operating at the center and financial resources for implementation of their activities are reported in the faculties to which they belong.

## Affiliated Schools

### Development of a program to create an inclusive education system

Students

The Special Needs Education School for the Physically Challenged, University of Tsukuba, opened a matching website for joint remote classes to help improve the quality of learning of students of special needs schools for the physically challenged across Japan. As a result, the school bolstered its presence outside the university, and was appreciated for its great contribution to improvement of the quality of education, which has earned it a president award (education) in AY2021.

### Cooperation between affiliated schools

Students

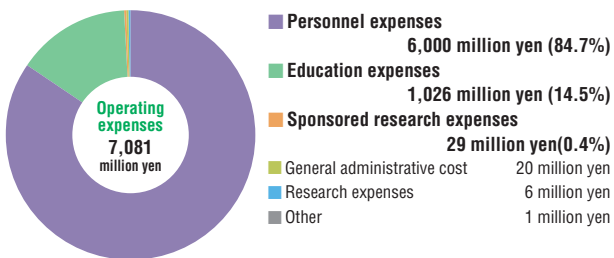
The Career Forum, which had been implemented face to face, was streamed online through collaboration with Ochanomizu University

Senior High School, which has signed a partnership agreement with us. The results of this forum were also reported by video streaming at educational research conferences and have been repeatedly verified through questionnaire surveys.



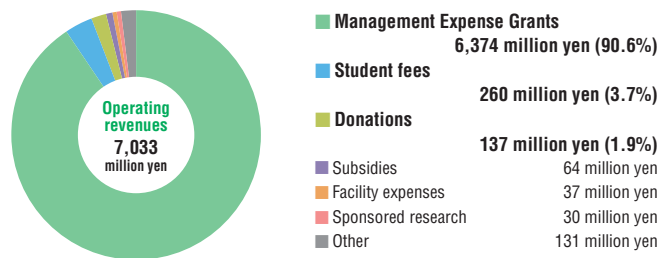
A class utilizing the matching website for joint remote classes

### Expenses incurred for activities



\* Besides the above, details of activities at affiliated schools in AY2021 are provided on page 36.

### Financial resources



## University of Tsukuba Hospital

### Introducing next-generation particle radiation therapy, resulting in even higher precision of radiation treatment becoming available

Community

The Proton Beam Therapy Center, University of Tsukuba Hospital, has the longest history as an institution of its kind that has been leading proton beam therapy in Japan for about 40 years. A major advantage of proton beam therapy, which can treat cancer with pin-point precision, is that it can be administered to elderly people and patients with complications, in addition to keeping the functionality and morphology of organs as intact as possible. As the center has treated the largest number of liver cancer cases in the world, and childhood cancer cases in Japan, and has been educating medical staff engaged in proton beam therapy for many years, many related individuals are working in Japan's leading particle radiation therapy facilities in different parts of the country. Construction of a new center started in the previous academic year due to the aging of the old facilities and the new facilities are planned to be put into operation by AY2025, with new treatment equipment that will enable even higher-precision treatment with higher efficiency.

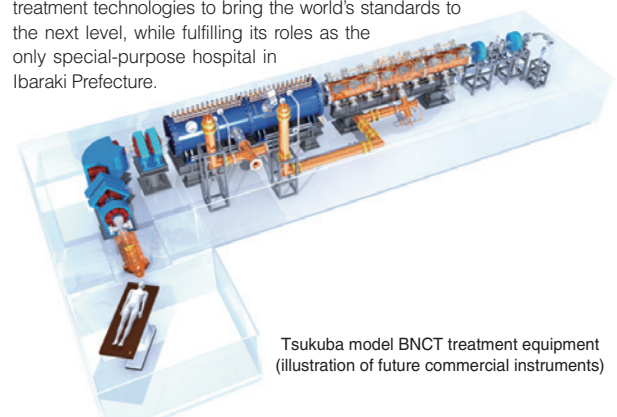
In addition, nearly all necessary non-clinical tests on treatment equipment have been completed for boron



Illustration of the new Proton Beam Therapy Center

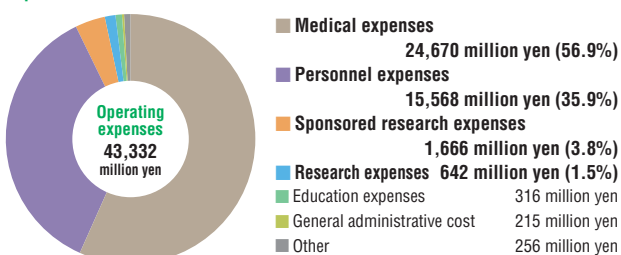
neutron capture therapy (BNCT), and preparations are now underway in cooperation with related companies towards physician-led clinical trials on malignant brain tumors and pharmaceutical approval of the treatment equipment, with a view to starting insured treatment in several years.

By putting to use its rich experience and the latest treatment equipment, in addition to expanding the coverage of insurance to proton beam therapy on a wider range of diseases, the center will become able to provide its high-precision radiation therapy to growing numbers of patients. The University of Tsukuba Hospital will continue to strive to develop new treatment technologies to bring the world's standards to the next level, while fulfilling its roles as the only special-purpose hospital in Ibaraki Prefecture.



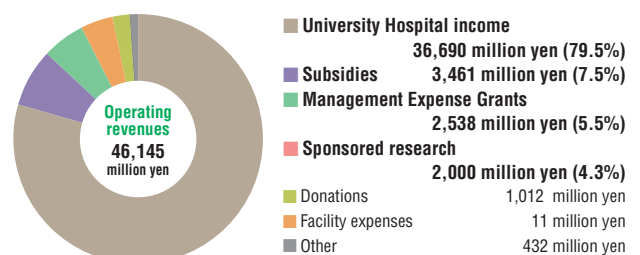
Tsukuba model BNCT treatment equipment (illustration of future commercial instruments)

### Expenses incurred for activities



\* Besides the above, details of activities at the university hospital in AY2021 are provided on page 34.

### Financial resources



## University of Tsukuba Integrated Report

The integrated report can also be viewed at the following website:

University of Tsukuba Integrated Report

<https://www.tsukuba.ac.jp/public/report/>



## Relevant Detailed Information

### →Financial Information:

#### AY2021 (18th Term) Financial Statements, etc.

[https://www.tsukuba.ac.jp/public/misc/teikyo\\_22.html#zaimu](https://www.tsukuba.ac.jp/public/misc/teikyo_22.html#zaimu)

The financial statements have been audited by accounting auditor KPMG AZSA LLC, the university's accounting auditor.



### →Mid-Term Goals and Mid-Term Plan

[https://www.tsukuba.ac.jp/public/publicity\\_term.html](https://www.tsukuba.ac.jp/public/publicity_term.html)



### →Tsukuba Futureship

<https://futureship.sec.tsukuba.ac.jp/>



### →Crowdfunding Business

[https://readyfor.jp/lp/university\\_of\\_tsukuba/](https://readyfor.jp/lp/university_of_tsukuba/)



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