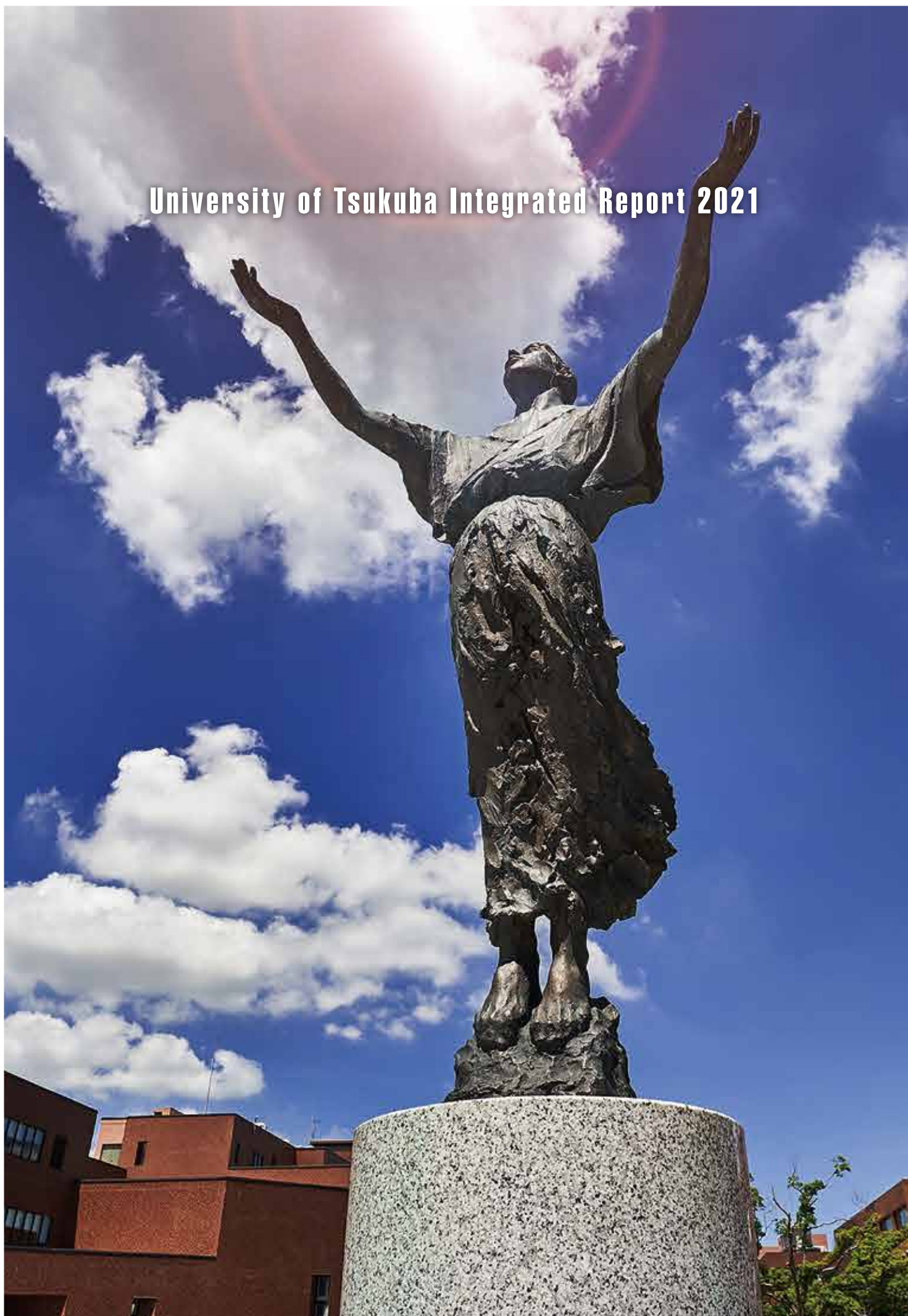


University of Tsukuba Integrated Report 2021



To Our Stakeholders

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 and to make constant improvements for the sustained growth of the university based on your views and dialogue with you.

In the AY2021 report, we have enhanced the content to better communicate to stakeholders our process of creating the value that the University of Tsukuba gives to society and to make visible the costs associated with education and research that cannot be determined from financial information. We hope that this information will provide a more detailed understanding of the university's education and research organization activities.

In preparing this integrated report, we referred to other reports compiled by private enterprises and other large universities as well as frameworks provided by the International Integrated Reporting Council. In the future, we intend to further improve the content of this report to publish and deliver to you a full integrated report.

About the cover statue
Created by Shinya Nakamura
Name: Miserere XVII 1999 Gregorian chant Hymn: Ave maris stella
Created: 1999

Contents

About the University

- 02 Philosophy and History
- 04 Basic Data

Our Vision for the Future

University of Tsukuba Process for Creating Value

Achieving Our Goals

- 12 Promoting International Leading Edge Research
- 14 Training Human Resources Capable of Working Independently in a Global Environment
- 16 Contribution to the Enhancement of Japan's Global Industrial Competitiveness
- 18 Realizing a University that Practices Internationalism Every Day
- 19 Strengthening its True Function as an Affiliated Hospital of a Comprehensive Research University
- 20 Constructing an Education Model for Primary, Secondary and Special Support Schools
- 21 Transformation from Operating to Managing a University by Strengthening the Management Foundation and Information Governance

Results of Main Activities in AY2020

- 24 Strengthening Research Functions
- 26 Improving the Quality of Education
- 28 Strengthening Industry-University Collaboration
- 30 Promoting Globalization
- 31 Contribution to the Olympics and Paralympics, Community Collaboration
- 32 Strengthening Affiliated Hospital Functions
- 33 Improving Education at Affiliated Schools
- 34 COVID-19 Measures
- 38 Enhancing Education and Research Activities through Funding, Etc.
- 40 Initiatives for SDGs
- 42 Promoting University Management

Initiatives for Strengthening Governance

- 44 Governance Framework
- 45 Framework for Preventing the Misuse of Research Funds
- 46 Promoting Fair Research Activities
- 47 Building an Information Security Management System
- 48 Auditing Framework

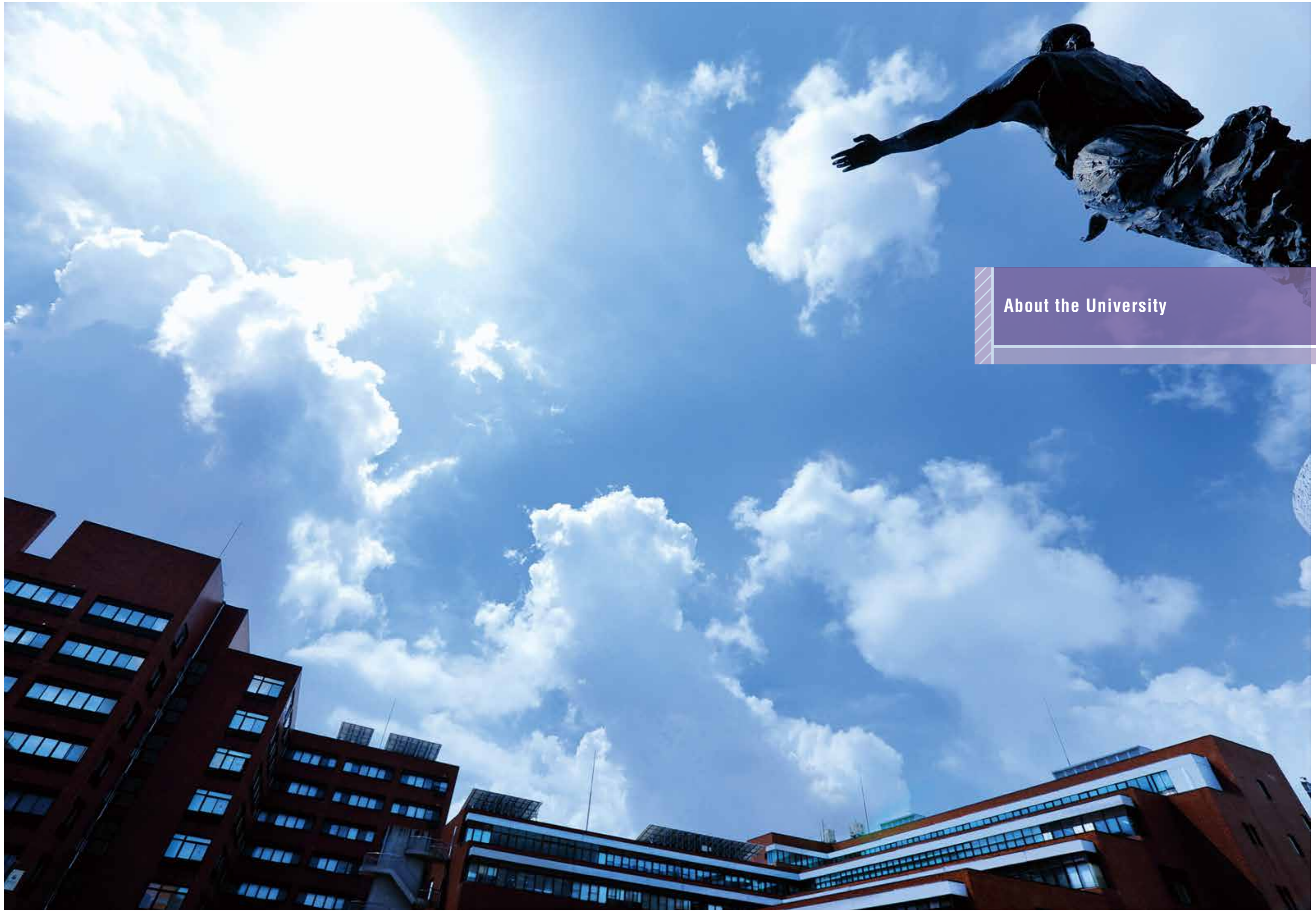
Financial Conditions

- 50 Financial Results for AY2020
- 52 Financial Conditions of the University of Tsukuba
- 53 Costs and Financial Resources Concerning Education and Research
- 55 Features of the University of Tsukuba Compared to Other Universities
- 56 Major Characteristics of National University Corporations' Accounting

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

- 60 Segment Information
- 63 Achievements and Results and Financial Conditions by Segment

* 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.



About the University

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.

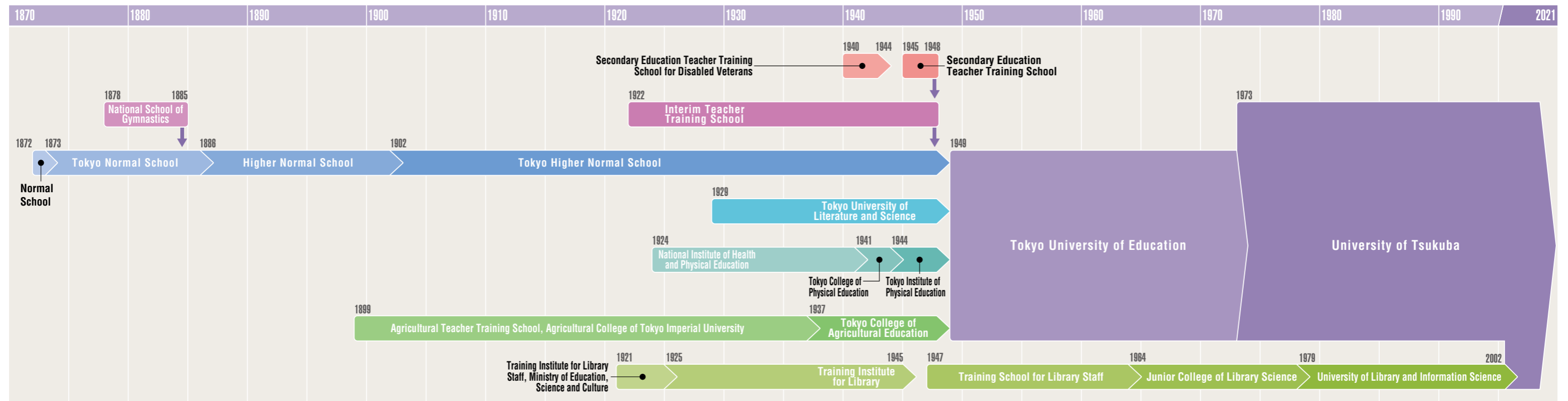
The University of Tsukuba has decided to function as a university which is open to all within and outside of Japan. Toward this end, the university has made it its goal to develop an organization better suiting the functions and administration with a new concept of education and research highly international 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.



History from the University's Founding



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 of the University of Tsukuba

Our university was reborn in Tsukuba Science City in 1973 as a comprehensive university for pursuing the study of a wide range of disciplines from literature, science and physical education to the arts. Although the University of Tsukuba is a new university with only 40 some odd years since establishment, its history dates back to the Normal School, founded in 1872 as the first institution of higher education in Japan. The immediate predecessor of our university, the Tokyo University of Education, was established in 1949 with the consolidation of four institutions: the Tokyo Higher Normal School, Tokyo University of Literature and Science, Tokyo College of Physical Education and Tokyo College of Agricultural Education. Since its founding, the University of Tsukuba has continued to pursue new reforms and challenges in the Tsukuba area, without becoming complacent with traditions inherited from the Normal School, which supported the development of education that became the cornerstone of Japan's modernization.

- 1872 Normal School is founded in Tokyo
- 1873 Normal School is renamed Tokyo Normal School
- 1886 Tokyo Normal School is renamed Higher Normal School
- 1902 Higher Normal School is renamed Tokyo Higher Normal School
- 1929 Tokyo University of Literature and Science is established
- 1949 Tokyo University of Education is established under the National School Establishment Act
- 1973 University of Tsukuba is established under the Law for the Partial Amendment of the National School Establishment Act
- 2004 University of Tsukuba is established as a national university corporation under the National University Corporation Act
- 2020 Selected as a Designated National University Corporation (starting 2022)

Education & Research Organizations (as of May 1, 2021)

Education Organizations

Graduate Schools

- Graduate School of Business Sciences, Humanities and Social Sciences
 - Degree Programs in Humanities and Social Sciences
 - Degree Programs in Business Sciences
- Graduate School of Science and Technology
 - Degree Programs in Pure and Applied Sciences
 - Degree Programs in Systems and Information Engineering
 - Degree Programs in Life and Earth Sciences
- Graduate School of Comprehensive Human Sciences
 - Degree Programs in Comprehensive Human Sciences

Undergraduate Schools

- School of Humanities and Culture
- School of Social and International Studies
- School of Human Sciences
- School of Life and Environmental Sciences
- School of Science and Engineering
- School of Informatics
- School of Medicine and Health Sciences
- School of Physical Education, Health and Sport Sciences
- School of Art and Design

Affiliated Schools

- Elementary School, University of Tsukuba
- Junior High School at Otsuka, University of Tsukuba
- Junior High School at Komaba, University of Tsukuba
- Senior High School at Otsuka, University of Tsukuba
- Senior High School at Komaba, University of Tsukuba
- Senior High School at Sakado, University of Tsukuba
- Special Needs Education School for the Visually Impaired, University of Tsukuba
- Special Needs Education School for the Deaf, University of Tsukuba
- Special Needs Education School for the Mentally Challenged, University of Tsukuba
- Special Needs Education School for the Physically Challenged, University of Tsukuba
- Special Needs Education School for Children with Autism, University of Tsukuba

Education and Student Support Centers

- Center for Education of Global Communication
- Sports and Physical Education Center
- Admission Center
- Health Center

School of Integrative and Global Majors

School of Comprehensive Studies

Research Organizations

Faculties (Faculty Organizations)

- 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
- 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
- Faculty of Transdisciplinary Research

Advanced Research Centers

R1 (World-class Research Center)

- Center for Computational Sciences
- Life Science Center for Survival Dynamics, Tsukuba Advanced Research Alliance (TARA)

R2 (National-class Research Center)

- Shimoda Marine Research Center
- Tsukuba-Plant Innovation Research Center
- Plasma Research Center
- Alliance for Research on the Mediterranean and North Africa (ARENA)
- Center for Cybernetics Research
- Center for Research in Isotopes and Environmental Dynamics (CRIED)
- Center for Artificial Intelligence Research
- Microbiology Research Center for Sustainability
- Proton Medical Research Center

R3 (Priority Training Research Center)

- Research Center for West Asian Civilization
- Mountain Science Center
- Advanced Research Initiative for Human High Performance (ARIHHP)
- Transborder Medical Research Center
- Tomonaga Center for the History of the Universe
- Tsukuba Research Center for Energy Materials Science

Research Support Centers

- Research Facility Center for Science and Technology
- Academic Computing Communications Center

Research & Development Center

- R&D Center for Precision Medicine
- R&D Center for Frontiers of MIRAI in Policy and Technology
- R&D Center for Sport Innovation
- R&D Center for Health Services
- R&D Center for Tailor-Made QOL
- R&D Center for Working Persons' Psychological Support
- R&D Center for Innovative Material Characterization
- R&D Center for Innovative Drug Discovery
- R&D Center for Digital Nature
- R&D Center for Wellness Innovation
- R&D Center for Smart Wellness City Policies

Other Facilities

- Innovation Medical Research Institute
- Tsukuba Clinical Research & Development Organization (T-CReDO)
- Open Innovation Strategy Organization
- Athletic Department

International Institute for Integrative Sleep Medicine

Affiliated Facilities

University of Tsukuba Library

University of Tsukuba Hospital

Basic Information (as of May 1, 2021)

Students	Total No. of students (6th)	Undergraduate students (12th)	Graduate students (7th)	Affiliated school students, etc.
	16,542	9,715	6,827	4,072
Staff	Total number of teachers and staff	Directors	Teachers	Staff
	5,325	11	2,406	2,908
International Exchanges	Foreign teachers and staff	Ratio of international students (3rd)	International exchange agreements	
	160	12%	389 (69 countries and regions)	
Area	Land area (8th)		Building area (6th)	
	12,686,635m ² (excluding affiliated schools)		990,974m ² (excluding staff housing)	
No. of Recipients	Nobel Prize Recipients		No. of Olympic and Paralympic Medals	
	3	Sin-Itiro Tomonaga (1965 Prize in Physics) Leo Esaki (1973 Prize in Physics) Hideki Shirakawa (2000 Prize in Chemistry)	Olympics 25	Paralympics 22

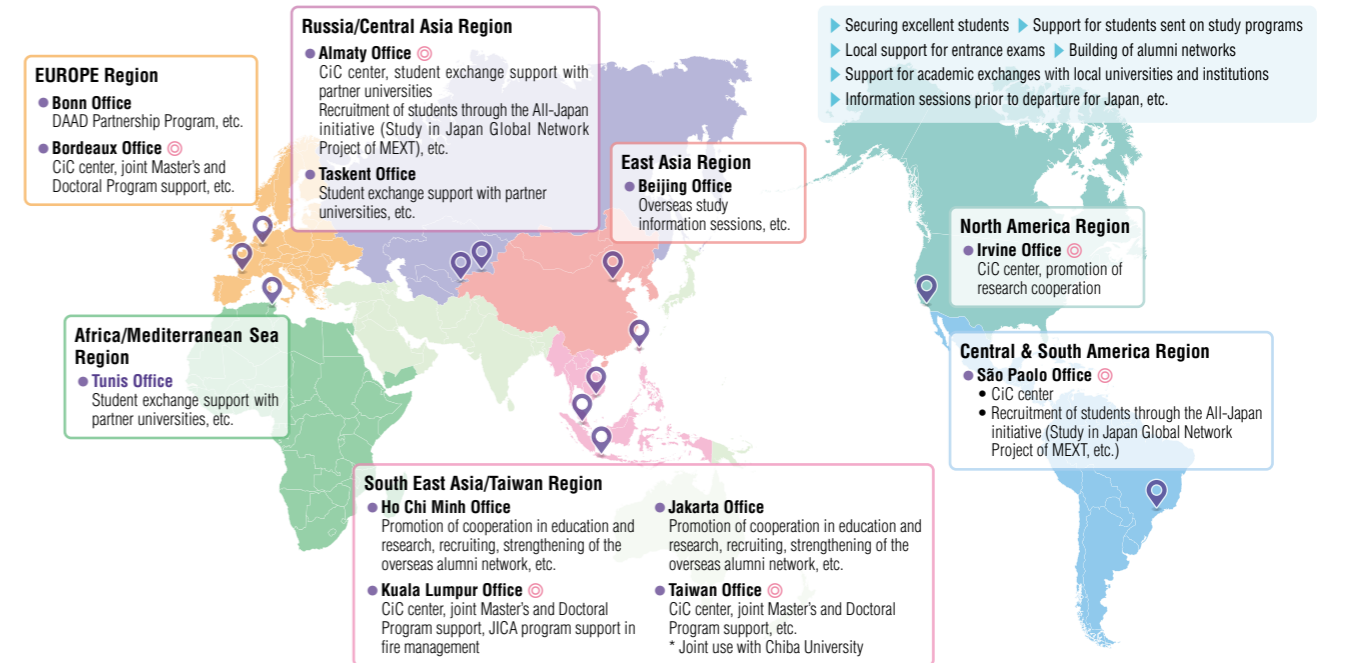
* The above figures in parentheses indicate the national university corporation ranking of the University of Tsukuba as of May 1, 2020.
* Olympic and Paralympic medals are current as of September 5, 2021.

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 (12 Centers in 12 Countries/Regions) High function overseas office

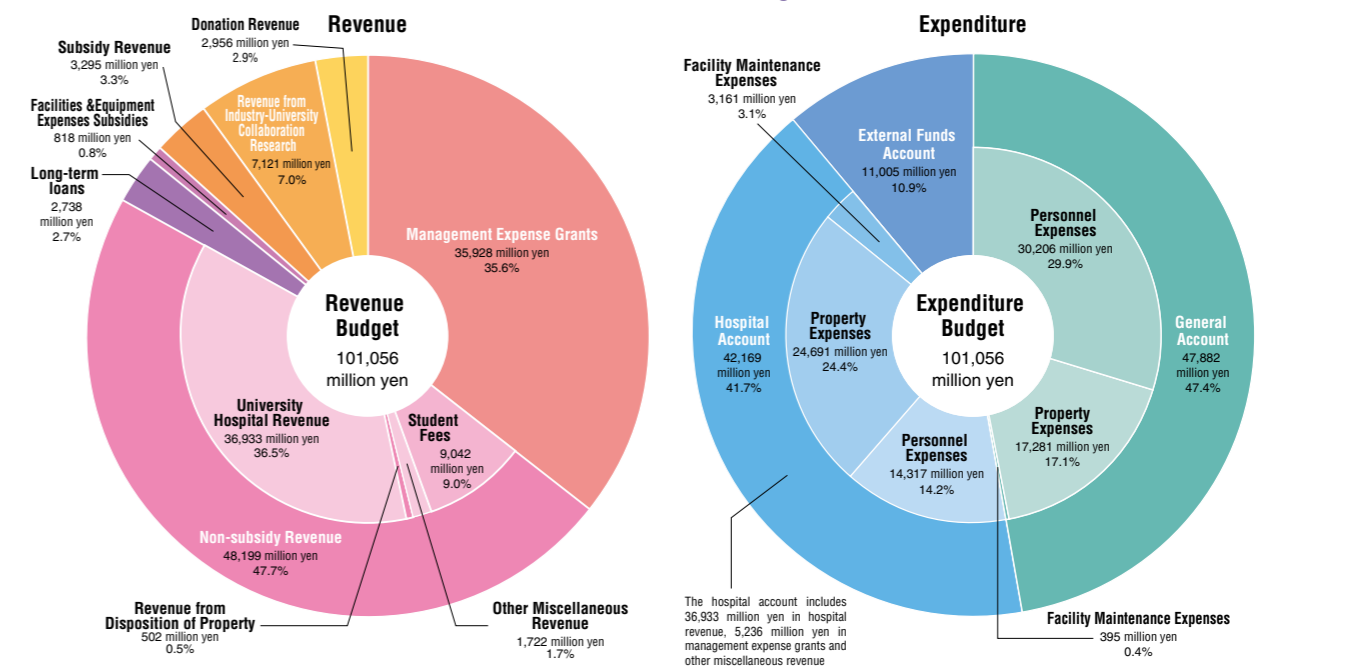


Financial Base

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.

AY2021 Initial Budget



Planning for the Future and Taking on Its Challenges as Frontrunners



Kyoosuke Nagata

President of the University of Tsukuba

As a new kind of university free of conventional ideas of what a university should be, our university has capitalized on its strength of having a wide range of disciplines including basic science, physical education, and art and has made efforts to solve issues on a global scale by always engaging in education and research required by society through the integration of new academic fields. Our university, which began as a university committed to being open and promoting constant reforms, has played a role as a unique university in Japan in leading university reforms from both a philosophical and statutory perspective.

In today's turbulent globalized world, we face a host of problems. To enhance and strengthen our role as a center for global education and research that will create knowledge to solve global issues and develop global human resources who will lead in taking on this challenge, we have set five main goals in the Third Mid-term Goal Period.

1. Under high ethical standards, we will pursue sound specialist expertise in a wide range of disciplines related to nature,

humans, society and culture, and we will promote research at the world's highest level as a leading center in the creation of outstanding knowledge by pioneering interdisciplinary fields, realigning our research functions, and strengthening our internationalism.

2. We will accept diverse students from all over the world, build an educational system backed by advanced, cutting-edge research results, which will develop the individuality and abilities of students through Master's and Doctoral Programs, and we will train men and women capable of developing rich humanity and creative intellect throughout life and working as individuals in a global society.
3. As a comprehensive university that offers education with international interchangeability and pursues research activities in various diverse fields at the world's highest level, the University of Tsukuba will enhance its presence at the center of a network of countries and regions around the world. As a university that has international credibility and competence in communication, the University of Tsukuba will also demonstrate its ability to practice internationalism in everyday life.
4. We will play a core role in the innovation creation center TSUKUBA, with its concentration of science and technology, and we will strengthen our collaboration with educational and research institutions as well as industry. Moreover, we will enhance our education and research functions, and contribute to strengthening Japan's global industrial competitiveness.
5. As we enhance the professional skills and diverse capabilities of faculty and staff, we will work to strengthen information governance and the management base and to redistribute university resources under the leadership of the president. Moreover, through autonomous reforms in education and research functions, we will lead university reforms in Japan as a university capable of responding to changes in the world and society as quickly as possible.

To achieve these goals, we will continue our relentless efforts to fulfill the role society requires of us. As we look closely at the challenges of tomorrow, we look forward to carefully facing our daily research, education, and students with care.

Having been selected as a Designated National University Corporation for the Fourth Mid-term Goal Period starting next academic year (AY2022–AY2027), we intend to further improve our education and research activities to prepare ourselves for our new beginning as a Designated National University Corporation.

We look forward to your continued support.

Toward the Realization of the Designated National University Corporation Scheme

Being a university committed to being open and promoting constant reforms, we have applied to become a Designated National University Corporation for the Fourth Mid-term Goal Period and received the designation in October 2020.

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 international competitive 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.

Our Vision for the Future: Toward a Truly Comprehensive University Committed to Resolving Global Problems

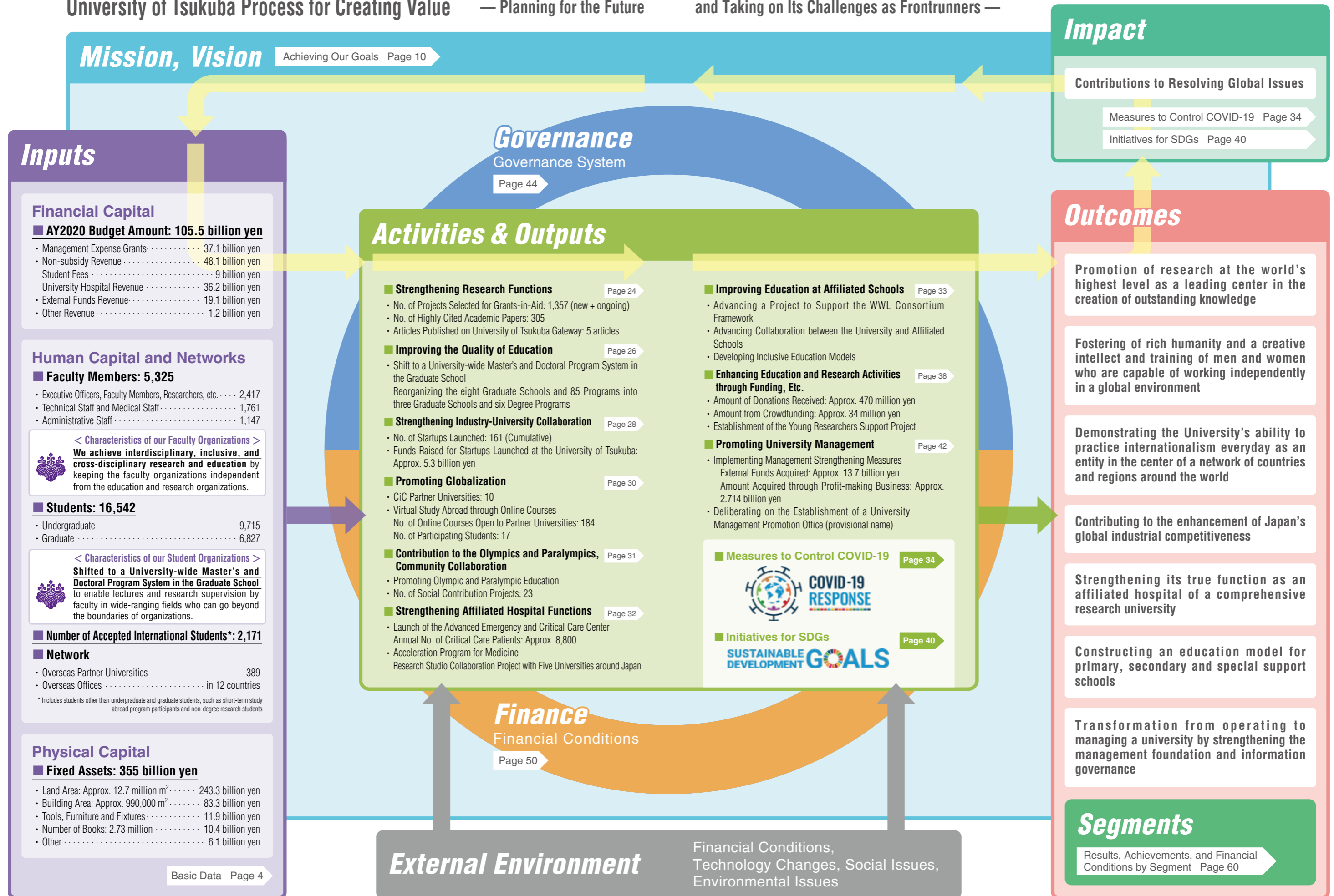
The University of Tsukuba, modeled after innovative universities in the US and Europe, was established in Tsukuba Science City,

the largest of its kind in Japan, to become a world-class university based on a new concept. Taking advantage of our international and interdisciplinary nature, which is our legacy, 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 that will come after the COVID-19 pandemic.

The designation we have just received is a powerful reminder that 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 work with all of our stakeholders to make this come true, being fully aware that the whole world is the stage for our collaboration and competition. We look forward to your continued support.



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: https://www.mext.go.jp/b_menu/houdou/mext_00343.html





**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

Research

[See page 12 for details]

Promoting International Leading Edge
Research

Education

[See page 14 for details]

Training Human Resources Capable of Working
Independently in a Global Environment

University-Industry Collaboration

[See page 16 for details]

Contributing to the enhancement of
Japan's global industrial competitiveness

International

[See page 18 for details]

Realizing a University that Practices
Internationalism on an Every Day

University of Tsukuba Hospital

[See page 19 for details]

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

Affiliated Schools

[See page 20 for details]

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

University Management [See page 21 for details]

Transformation from Operating to Managing a University by Strengthening the Management
Foundation and Information Governance

Achieving Our Goals



Goals

Promoting research of the world's highest level

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 We will steadily proceed with fundamental research by reviewing and centralizing our existing research center system, and we will work toward making a dramatic leap forward in interdisciplinary research through the introduction of new systems and collaboration with universities and other institutions in Japan and other countries.
- ② We will boldly reform research systems within the university.

Main Measures

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.

International Institute for Integrative Sleep Medicine (IIIS)

IIIS was established as an institute for the study of sleep medicine, which is an integrated field of research encompassing the three fields of neuroscience, drug discovery science, and experimental medicine. IIIS is a leading international institute that aims to contribute to improvement in human health by shedding light on the mysteries of sleep and developing methods of treatment for sleep disorders.



The Center for Cybernetics Research (CCR)

"Cybernetics," a new field of interdisciplinary research centered on humans, robots, and informatics, integrates a wide range of other fields such as brain and neuroscience, behavioral science, robotics, information technology (IT), artificial intelligence, system integration technology, physiology, psychology, philosophy, ethics, law and business administration.



As an international cybernetics research and development center that closely links people, technology and society, CCR engages in collaboration with partners in Japan (such as CYBERDYNE Inc., an innovative company that implements R&D results in society and promotes virtuous cycle innovation) and international collaboration with partners in the EU and the United States through the integration of medicine and engineering, new industry-government-university private partnerships, and regional and international partnerships.

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.

Center for Computational Sciences

The Center for Computational Sciences is engaged in research activities, mainly ultrafast simulations and large-scale data analysis in a variety of scientific research fields, as well as the development of ultrafast computing systems and ultrafast network technology and research on innovative applications of information technology. Besides being an R&D institute, it also functions as a facility for shared use by researchers from across Japan, available also to external researchers, and has been approved as a center of excellence for shared use under the Advanced Interdisciplinary Computational Science Collaboration Initiative (AISCI) since 2010.



Specific Initiatives

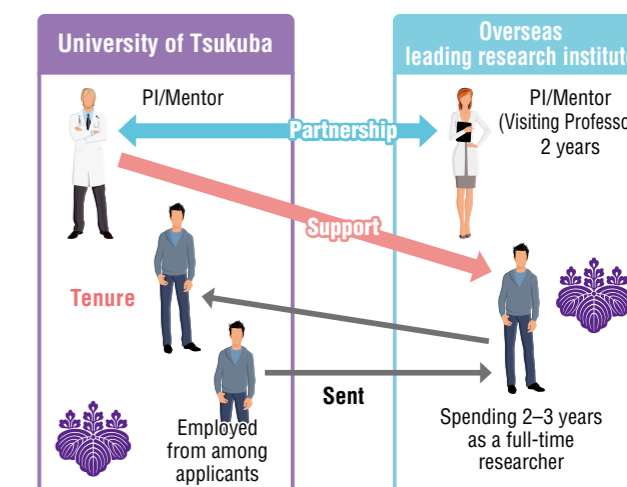
Classification of research centers

The university categorizes the research centers into functions (advanced research centers and research support centers) for constructing a "research cycle system" as an effective framework for promoting research based on growth stages of the research and activating the metabolism (turnover) of the university's research as a whole. It then grades the advanced research centers according to four classifications and allocates priority and strategic resources based on their classification as follows. 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 and assesses each research center every five years (with an interim assessment in the third year). The Microbiology Research Center for Sustainability received a high score in the interim assessment conducted in AY2020 and was raised to R2 (national-class research center) as of AY2021 resulting in it receiving even more support.

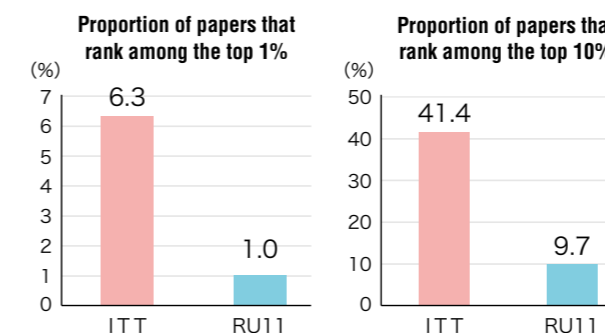
Development of young researchers through an international tenure-track system

The university introduced an international tenure-track system in AY2013 as a measure for improving its international co-authoring rate, which shows a strong correlation with paper citation indices. The purpose of the system is 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 joint 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 which the university's international tenure-track faculty members published by AY2020 are of higher quality compared to other universities and have substantially contributed to a surge in the overall research expertise of the entire university. Further positive outcomes are expected now.



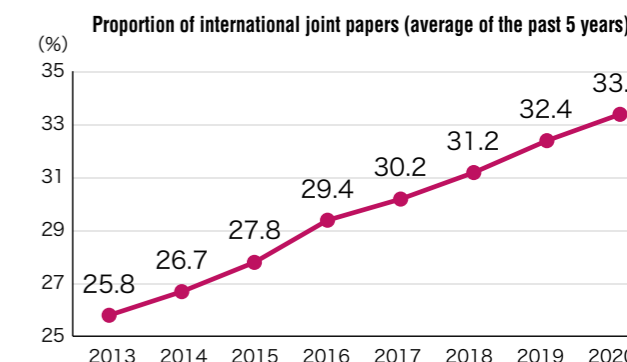
PI : Principal Investigator

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



• Source: Scopus (Jul. 14, 2021)
 • Condition: Field-weighted Target: All publication types published in 2016-2020
 • Results of the first 25 tenure-track system faculty members

International joint papers co-authored with members of the university increased



• Source: Scopus (Jul. 14, 2021)
 • Target: All publication types

Progress of KPIs for the Third Term

KPI	Published in 2018	Published in 2019	Published in 2020	Published in 2021
Achieve a position within the world's top 100 in a substantial number of research areas	Sports-related Subjects	Sports-related Subjects	Library & Information Management	Library & Information Management
	25	49	33	40
	Library & Information Management		Sports-related Subjects	Sports-related Subjects
	37		51-100	51-100

* These are the QS World University Rankings

Goals

Delivering education with international interchangeability

- 1 Deliver education with international interchangeability and train human resources who can play active roles on a global scale.
- 2 Promote education through transborder partnerships with Japanese and overseas universities and R&D enterprises in Tsukuba Science City.
- 3 Recruit diverse, outstanding students from around the world.

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

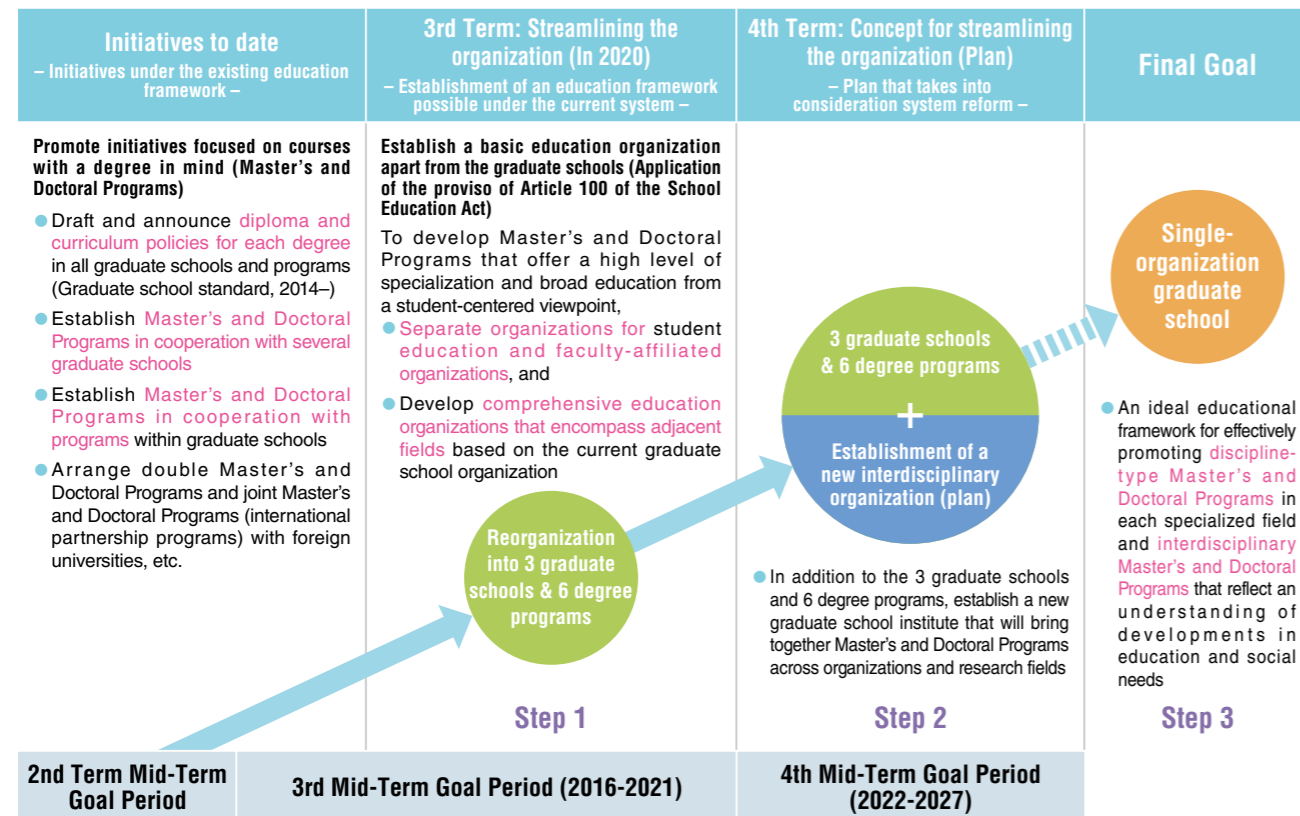
We will implement Master's and Doctoral Programs in a wide range of fields centered on graduate courses in collaboration with researchers at R&D enterprises and R&D departments of companies in Tsukuba Science City and researchers in relevant fields at the University of Tsukuba.

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).

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 —



Specific Initiatives

Building a Collaborative Graduate School System —Transborder Partnerships—

The University of Tsukuba has built a Collaborative Graduate School System to manage the Master's and Doctoral Programs in partnership with research and development corporations and companies in Tsukuba Science City and has established a framework for bringing together faculty supervising Master's and Doctoral Programs that reaches beyond the barriers of organizations.

This system enabled the establishment of the Master's and Doctoral Programs in Life Science Innovation programs in 2015. In 2020, the scope of this program was expanded (four original fields: disease mechanism, drug discovery, environmental management, and food innovation plus two new fields: bioinformatics and biomolecular engineering) and the Master's and Doctoral Programs in Risk and Resilience Engineering were established.

The Master's and Doctoral Programs in Risk and Resilience Engineering established in April 2020 aim to develop people who can analyze risk and contribute to a more resilient society.

These programs are mainly implemented by the Resilience Research and Education Promotion Consortium. A quality and diverse research environment is provided through synergy between the university and companies and research institutes inside and outside Tsukuba Science City.

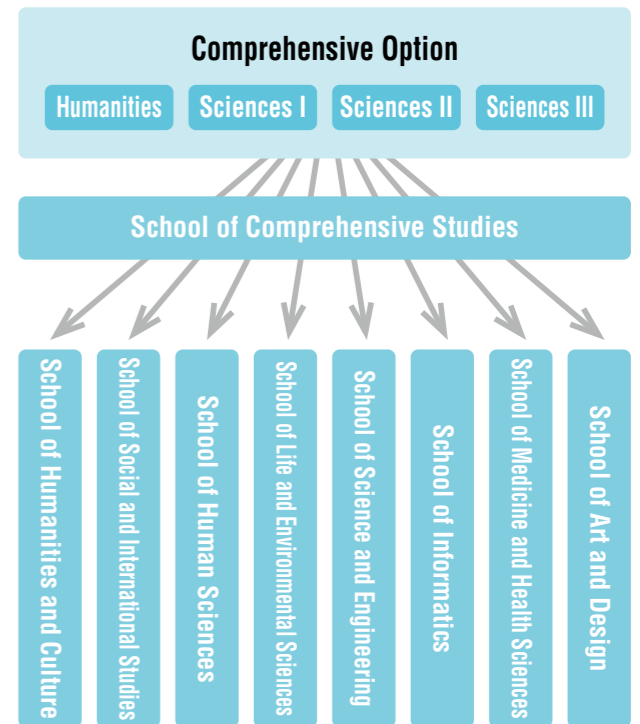


Reform in Enrollment Selection —Introduction of a Comprehensive Option—

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 AY 2021 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.

Before AY 2021, entrance examinations had been based on a system where applicants decide on a college or specialized school at the time of the entrance examination. Under the newly introduced comprehensive option, applicants are also selected outside of the college and specialized school framework, which will account for approximately 25% of students recruited, and the first term examination is now conducted in two streams: comprehensive option and college/specialized school option.

Students admitted under this comprehensive option will join the School of Comprehensive Studies in the first year of study and a college or specialized school from the second year. For students who want to choose a college that allows them to do the research of their choice after commencing their education at university, and for students who have a wide range of interests and want to study a wide variety of subjects, this admissions arrangement offers an opportunity to study various specialized fields after enrollment and to discover the path they want to pursue while acquiring a wide range of skills.



Progress of KPIs for the Third Term

KPI	Target	AY2017 Achievement	AY2018 Achievement	AY2019 Achievement	AY2020 Achievement
Establish programs that can be studied in English only	60	52	63	65	65

Goals

1 Promotion of research of the world's highest level to create innovation

To develop leading-edge research at the world's highest level in both research that deeply explores the truth and research aimed at returning results to society in broad academic disciplines, we will promote research that provides returns to society through ALL TSUKUBA by working in collaboration with universities, research institutes, etc. in Tsukuba Science City.

2 Strengthening industry-university collaboration functions and creating innovation

- We will strengthen university-industry collaboration functions centered on Tsukuba Science City.
- We will promote active industry-university collaboration activities.

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.

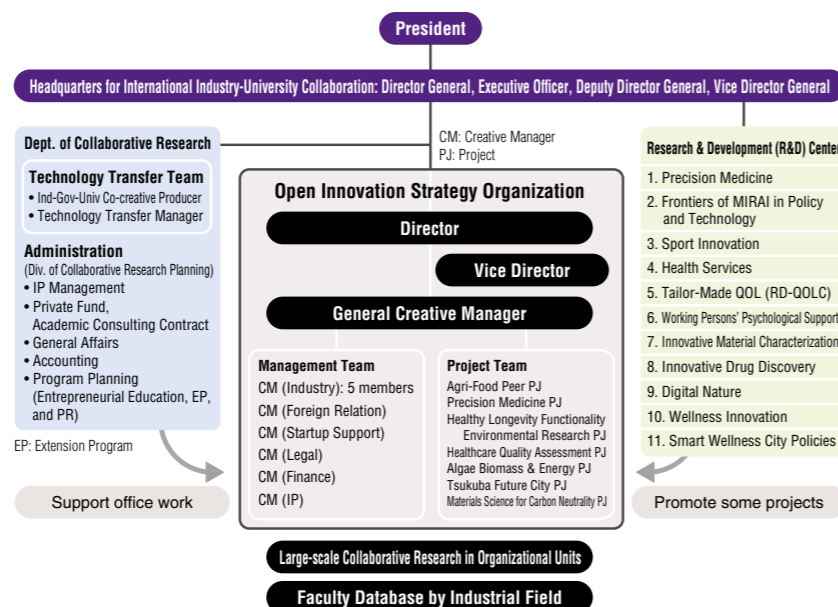
3 Promoting vibrant industry-university collaboration activities

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.

Specific Initiatives

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 seven areas: agriculture, life science, biotechnology, service, energy, smart cities, and materials. 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 intended to 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.

A new R&D Center for Smart Wellness City Policies was opened in November 2020. To help create a city that fosters health and longevity, this Center engages in research and development related to the various issues arising in a super aging society with the aim of proposing policies based on the results of those activities and establishing a function to train highly skilled workers who can put the results into practice.

R&D Center for Precision Medicine	Aiming to become Japan's first 1,000 dollar genome analysis center	
R&D Center for Frontiers of MIRAI in Policy and Technology	Advanced research center for mobility infrastructure that realizes Society 5.0	
R&D Center for Sport Innovation	First social experiment center of a national university athletic department in Japan	
R&D Center for Health Services	Japan's first center specializing in the study of services that bring health and happiness	
R&D Center for Tailor-Made QOL	Provision of programs for improving QOL on an individual basis through food, exercise and sleep	
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	
R&D Center for Innovative Material Characterization	Toward innovative measurement and evaluation technologies	
R&D Center for Innovative Drug Discovery	100 years of vitality with new drugs and new technologies	
R&D Center for Digital Nature	Exploring the new relationship between computers and nature	
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	
R&D Center for Smart Wellness City Policies	Aiming to create evidence-based policies to foster wellness and longevity	

Established November 2020

Promoting entrepreneur education

As of AY2020, the university provides multi-layered education in five categories to develop entrepreneurs.

- (1) Next-Generation Entrepreneur Training Course
Learn the spirit of entrepreneurship oriented toward solving social issues
- (2) Tsukuba Creative Camp - Basic (free elective undergraduate course)
Create business models and acquire practical entrepreneurship expertise
- (3) Tsukuba Creative Camp - Advanced (free elective undergraduate course, common foundation subject graduate course)
Students aiming to start a business create highly feasible business plans
- (4) Essential Knowledge of Management and Intellectual Property for Entrepreneurs

- (5) Study successful business practices for starting a business in management, finance, or intellectual property
- (5) Exploration and Development of Global Entrepreneurship for NEXT Generation Program of the Ministry of Education, Culture, Sports, Science and Technology (EDGE-NEXT)
Basic: Entrepreneurship Training
Create business development scenarios from research results
Developmental: Entrepreneurship Development
Practical course teaching essential skills for a successful tech startup

A total of 348 students took the above five entrepreneur education courses in AY2020, which is roughly a 10% increase from the 317 students in AY2019 and a threefold increase from the 116 students in AY2017—the year EDGE-NEXT began.

Progress of KPIs for the Third Term

(In thousands of yen)

KPI	Target	AY2017 Achievement	AY2018 Achievement	AY2019 Achievement	AY2020 Achievement
Indirect expenses and intellectual property income	Versus AY2011 100% increase (106,928)	Approx. 229% increase (175,854)	Approx. 469% increase (304,041)	Approx. 518% increase (330,208)	Approx. 483% increase (311,956)

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.

Specific Initiatives

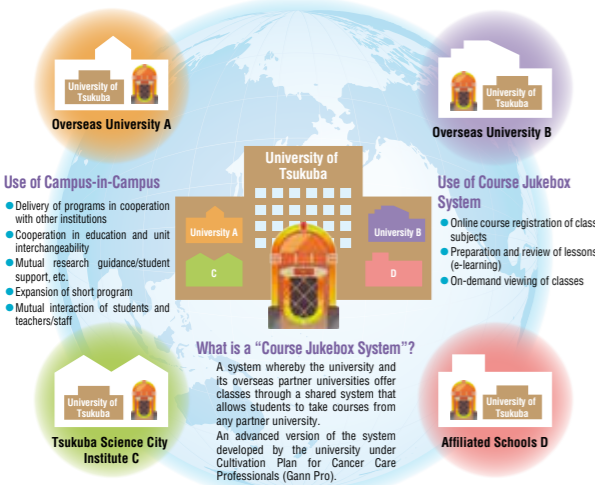
Promotion of the Campus-in-Campus (CiC) Initiative

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. Specifically, by creating the University of Tsukuba campuses in overseas partner universities and creating overseas partner campuses at the University of Tsukuba through the following initiatives, we aim to make universities around the world home campuses where our students and faculty can freely engage in academic and other activities.

Promotion of Transborder Education and Research

- (1) Create a Course Jukebox System → Promote collaborative education with overseas partner universities
- (2) Mutually share education and research units with overseas partner universities → Achieve world top-level education and research
- (3) Utilize Tsukuba Science City institutions and affiliated schools → Establish venues for transborder education and research
- (4) Make faculty and staff available beyond university boundaries → Promote international collaboration and cultivate international awareness

Training Human Resources for Global Innovation



Tsukuba Global Science Week (TGSW) and Tsukuba Conference

The Tsukuba Global Science Week brings wisdom 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 disseminate information on solutions to global issues from Tsukuba to the world, has been held since AY2010. In AY2021, TGSW2021 (the 11th TGSW) was held online in September.

Building upon this achievement, we decided to create a new forum for young leaders, including entrepreneurs, and held the Tsukuba Conference in 2019 under the theme "How do science, technology and innovation contribute to achieving Society 5.0 and SDGs?" In AY2021, Tsukuba Conference 2021 was held both online and in hybrid format in September with the theme, "Inclusive Innovation for the New Normal."

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



Progress of KPIs for the Third Term

KPI	Target	AY2017 Achievement	AY2018 Achievement	AY2019 Achievement	AY2020 Achievement
CiC partner universities	10	7	8	10	10
TGSW overseas participating institutions in AY2021	30	88	84	105	108
TGSW overseas participants in AY2021	300	262	298	344	356

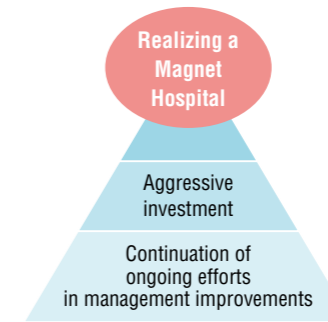
Goals & Main Measures

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.*



Strengthening Functions

- Improving and enhancing the education and training environment**
 - Support the training of staff who provide advanced acute care
 - Improve and strengthen regional medical care education center functions
- Improving the research environment**
 - Strengthen the framework for promoting clinical research
 - Promote world-leading medical care R&D and its social implementation
- Improving the medical care environment**
 - Strengthen specialist outpatient functions (including chemotherapy)
 - Establish a framework for providing telemedicine, advanced medical care

* 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

Specific Initiatives

Physician-led clinical trials through the University of Tsukuba Clinical Research & Development Organization (T-CReDO)

The University of Tsukuba Clinical Research & Development Organization supports the development of research results (seeds) in medical technology and their practical application in clinical development. Likewise, it supports the implementation of clinical trials to obtain useful clinical knowledge. T-CReDO has launched six physician-initiated clinical trials since AY2016.



State-of-the-art medical care at the Center for Innovative Medicine and Engineering (CIME)

The Center for Innovative Medicine and Engineering (CIME) engages in clinical development of medical devices and pharmaceuticals through interdisciplinary research including medical engineering collaboration and conducts physician-initiated clinical trials and other experimental studies aimed at having new medical device applications approved for the robot suit HAL. CIME has also collected various types of data related to diseases during driving using driving simulator research and is using it in society, for example by having the analysis results reflected in the Autonomous Driving Program Guidelines of the Ministry of Land, Infrastructure, Transport and Tourism.



Contribution to regional medicine

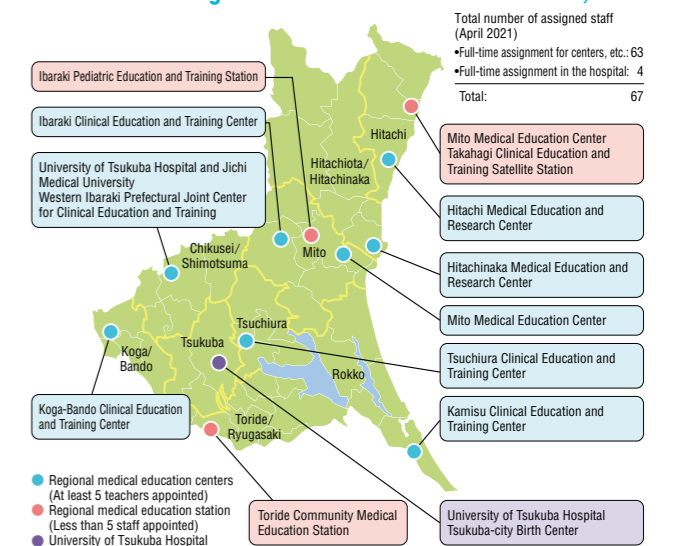
The University of Tsukuba Hospital has established local medical education centers within the core medical institutions located in each of the secondary health areas (nine locations) in Ibaraki Prefecture and invests intensively in university hospital education resources and expertise by assigning full-time faculty members. We are also working to support local medical care by strengthening their functions as training center venues for students, and as venues for medical treatment and training of human resources who will be responsible for local medical care such as clinicians and clinical researchers.

By AY2019, we had completed the establishment of centers in all

secondary health areas within the prefecture. As of April 2021, we have assigned 67 full-time teachers. In this way, we are contributing to building a framework for providing community health care.

Furthermore, the University of Tsukuba Hospital was designated by Ibaraki Prefecture as the prefecture's first Advanced Emergency and Critical Care Center in October 2019. It was put into operation in 2020 and has always been ready to accept critical emergency patients that are hard to treat at tertiary emergency facilities. In addition to providing safe and secure emergency medical care, the center also strives to train emergency physicians as the core hospital of the emergency department specialist program, which is an indispensable part of strengthening the emergency medical care framework. With the goal of realizing a society in which all people in the prefecture can lead safe and secure lives, the University Hospital will not only function as the last resort in emergency medical care but also work to enhance the emergency medical care framework through the development of emergency physicians.

Locations of Regional Medical Education Centers, etc.



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.

Specific Initiatives

Leading Education Centers in Effective Curriculum Development Aimed at Improving Basic Academic Ability: Research and Practice for Leading Education in Japan

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
- 15th Buds of Science Prize



Buds of Science Prize Commendation Ceremony and Presentation

Advanced Teacher Education Centers for Improving Teacher Instruction: Leadership in Teacher Training and Teacher Education

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).

(Main Initiatives)

- Curriculum development for nurturing uniform global skills in elementary, junior high and high school
- In-service teacher training (teacher training workshops for newly appointed teachers), etc.



In-service teacher training

International Education Centers Cultivating Skills in Internationalism: Developing the Ability to Respond to 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



WWL international fieldwork in Japan by the Senior High School at Sakado, University of Tsukuba

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

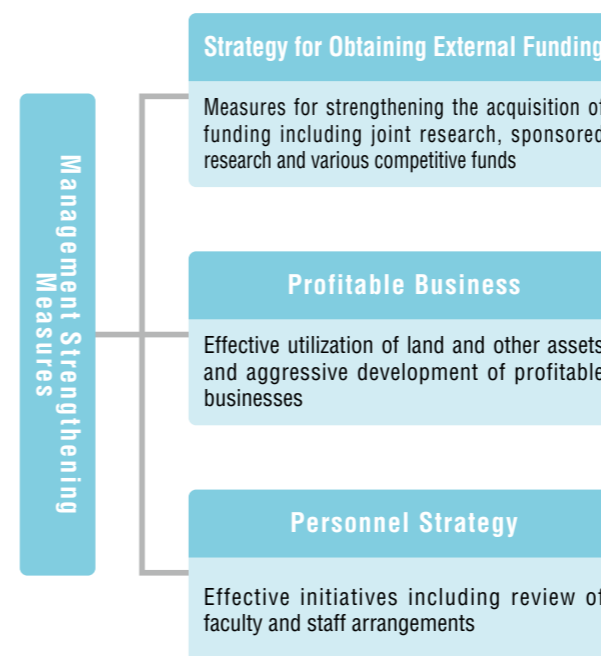
and expenditure structure, we have established the University Management Reform Office as an advisory body under the direct control of the President. This office includes external corporate managers and other experts, and we are examining concrete plans for the future.

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

Specific Initiatives

Implementation of Management Strengthening Measures

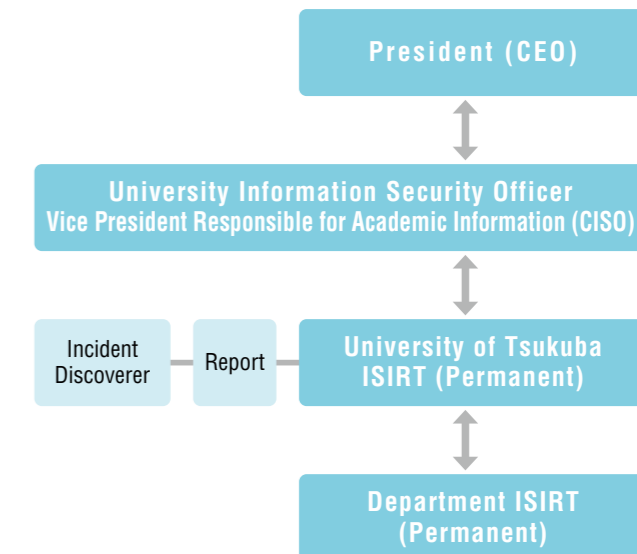
To maintain a stable business foundation at the university, we must revamp the income and expenditure structure. Therefore, in the Third Mid-term Goals Period we formulated management strengthening measures based on a strategy for obtaining external funding, the development of profitable businesses and a personnel strategy, and we are currently working towards their realization.



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.

Information Security Organization and Framework



* ISIRT (Information Security Incident Response Team)

Progress of KPIs for the Third Term

KPI	Target	AY2017 Achievement	AY2018 Achievement	AY2019 Achievement	AY2020 Achievement
Young teachers	25%	20.6%	20.1%	21.0%	20.5%
Female teachers	20%	18.2%	18.5%	19.1%	19.3%
Foreign teachers	10%	6.9%	6.7%	7.4%	7.4%
Teachers on annual salary	30%	30.3%	32.3%	34.0%	34.7%
Teachers on mixed salary arrangements	Versus AY2015 (18)	26	47	65	53



Results of Main Activities in AY2020

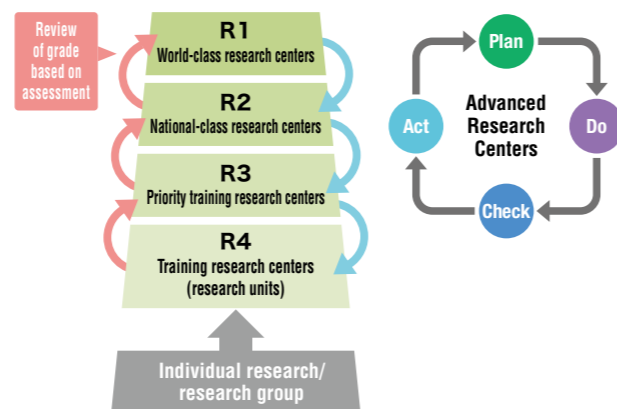
Interim Assessment of the Research Center: Raising of the Microbiology Research Center for Sustainability to R2

To allow the university to prioritize existing strengths and characteristics while continuing to generate new strengths, it implements a research cycle system as an effective framework for promoting research based on the stage of growth of the research. The university categorizes the research centers into functions (advanced research centers and research support centers) and grades the advanced research centers according to four classifications, allocating priority and strategic resources based on their classification as follows: R1: world-class research centers, R2: national-class research centers, R3: priority training research centers, and R4: training research centers (research units). It implements a system for assessing each research center every five years (with an interim assessment in the third year) and uses those assessments to review and revise classifications.

The first Research Center Interim Assessment after adopting this system was conducted in AY2020. The Microbiology Research Center for Sustainability received a high score and was raised from R3 (priority training research center) to R2 (national-class research center) as of AY2021 resulting in it receiving even more support.

Strengthening Research Functions

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



Forming an International Research Base: Shimoda Marine Research Center

The Shimoda Marine Research Center (SMRC) engages in pioneering research that includes both fundamental research in a wide range of fields related to coastal marine life and studies on marine environment issues. In AY2020, the SMRC collaborated with TARA-Japan and the Japanese Association for Marine Biology to conduct a nationwide coastal survey of marine microplastics. In addition, its faculty members have been selected to participate in emergence research support programs for the development of an international research base for ocean acidification research and for new research on the regulation of gene expression in ascidians that began in AY2021. The SMRC is actively engaged in research and has produced major research results on molecular mechanisms of ascidian metamorphosis, development of sea urchin genome editing technology, and clarification of biocenosis transition processes during acidification. It has published more than 30 papers in renowned journals such as Current Biology and Global Change Biology.



International CO₂ Natural Analogues Network (ICONA)

- Features:**
- Covers key coastal ecosystems
 - Three main centers for active research
- Activities:**
- R1: Guidelines for CO₂ seep research methods
 - R2: Ecosystem response and adaptation mechanisms
 - R3: Proposal of environmental conservation policy drafts
- Objectives:** To address the ocean acidification problem:
- Gain a comprehensive understanding of ecosystem response and adaptation mechanisms
 - Meet social requirements such as SDGs



Launch of University of Tsukuba Gateway as the World's First Open Research Publishing Gateway

Starting with the social sciences and humanities and collaborating on development with F1000Research, the university began operation of the University of Tsukuba Gateway, which can rapidly publish a wide variety of articles and research results in English or Japanese. Five articles were published on the gateway in AY2020 (one of which was in Japanese).

The University of Tsukuba Gateway is the world's first open research publishing gateway that allows researchers to publish

articles in either English or Japanese. As this gateway offers open access to all research results, they can be read freely by anyone. It uses the F1000Research publishing model that combines the benefits of preprints (rapid posting without editorial bias) with a mechanism to guarantee quality and transparency (invitation-only open peer review, archiving, registration with bibliographic databases). The system automatically indexes articles that pass a peer review in international article databases such as Scopus.

General Publication Process



Article Submission

Articles are submitted by simply entering the information on the submission page (single page). The F1000 editorial team checks that the submitted article adheres to the basic policies.

Publication & Data Deposition

Once the authors have finalized the manuscript, the article is published on the website within a week. This enables immediate viewing on the website and citation.

Open Peer Review & User Commenting

Expert reviewers are selected and invited. Their names and comments are published alongside the article. It also shows the authors' responses and comments from registered users.

Article Revision

Authors are encouraged to publish revised versions of their article. All versions of an article are linked and independently citable. Articles that pass a peer review are indexed in bibliographic databases such as PubMed, Scopus and Google Scholar.

No. of Grants-in-Aid for Scientific Research Projects Adopted Annually (8th in Japan)

University	No. of Projects Adopted (New + Ongoing)	No. of New Projects
1. The University of Tokyo	4,202	1,511
2. Kyoto University	3,022	1,083
3. Osaka University	2,665	969
4. Tohoku University	2,525	859
5. Kyushu University	1,943	693
6. Nagoya University	1,819	645
7. Hokkaido University	1,719	568
8. University of Tsukuba	1,357	456
9. Hiroshima University	1,220	437
10. Keio University	1,187	427

* From the Ministry of Education, Culture, Sports, Science and Technology, FY2020 Grant-in-Aid for Scientific Research Allocation (March 31, 2021 revised edition)

* Organized by the research institution with which the principal researcher is affiliated

* Only shows key grants

No. of Highly Cited Academic Papers from National Universities (9th in Japan)

One indicator that reflects a university's achievements and actual results in research is the number of citations of academic papers. According to Clarivate Analytics' Essential Science Indicators database, the University of Tsukuba ranked 9th in Japan for the number of highly cited papers for the 11-year period from January 1, 2010 to December 31, 2020. Highly cited papers are excellent papers that are in the top 1% in the world based on the number of citations.

University	No. of highly cited papers	Ratio (%)
1. The University of Tokyo	1,601	1.7%
2. Kyoto University	966	1.4%
3. Osaka University	608	1.2%
4. Tohoku University	560	1.1%
5. Nagoya University	479	1.3%
6. Kyushu University	396	1.0%
7. Hokkaido University	344	1.0%
8. Tokyo Institute of Technology	320	1.2%
9. University of Tsukuba	305	1.2%
10. Kobe University	234	1.3%

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

Unlike other comprehensive universities, the University of Tsukuba is home to education and research in an exceptionally wide range of disciplines. The university has proactively explored new interdisciplinary and crosscutting education and research while deepening each specialized field. To 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, it is essential to go outside of the box and make bold attempts. In AY2020, the university made a general transition from the traditional education system based on graduate schools and programs to a new education system centered on Master's and Doctoral Programs to enable faculty from a wide range of disciplines to collaborate and provide education beyond the traditional organizational framework and enhance the individuality and abilities of students.

The university became the first in Japan to make a full university-wide shift to the Master's and Doctoral Program system. We will play a trailblazing role in promoting this system and continue to develop diverse highly skilled human resources to meet the needs of today's society, which is changing rapidly and requires problem-solving actions that straddle multiple domains.



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

- The eight Graduate Schools and 85 Graduate Programs were reorganized into three Graduate Schools and six Degree Programs in April 2020.
- The six Degrees Programs consist of 56 specific Master's and Doctoral Programs and provide lectures and research supervision through cooperation between faculty from a wide range of disciplines, mainly full-time faculty members of each Master's and Doctoral Program.

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

- Further clarifying the knowledge and abilities which students should develop by the time of degree conferment from the perspectives of both versatility (general competences) and expertise (specialist competences) and compiling a systematic curriculum to allow students to achieve them.
- Regularly monitoring the progress of students in accordance with the achievement evaluation method set by each Master's and Doctoral Program 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.

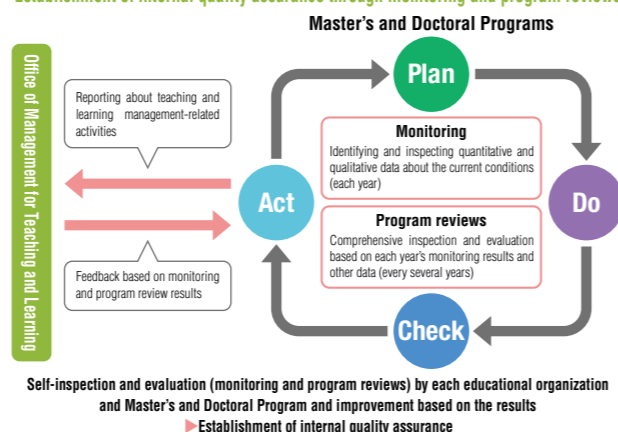
Reform Point ③ Categorizing degrees according to the purposes of human resource development and launching specialist degrees

- 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, which is the university's unique approach, and clearly defining the purposes of human resource development of each category.
- Particularly, the launch of specialist degrees 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 expected of recipients of Master's and Doctor's degrees, and aims to further promote the development of people who can contribute to resolving specific social issues.

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

- Establishing the Office of Management for Teaching and Learning to realize university-wide teaching and learning management with the aim of sustainably ensuring and improving the educational quality of Master's and Doctoral Programs after the reorganization.
- 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 (each year's self-inspection) and program reviews (comprehensive inspection, evaluation, and dialogue implemented every few years), 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



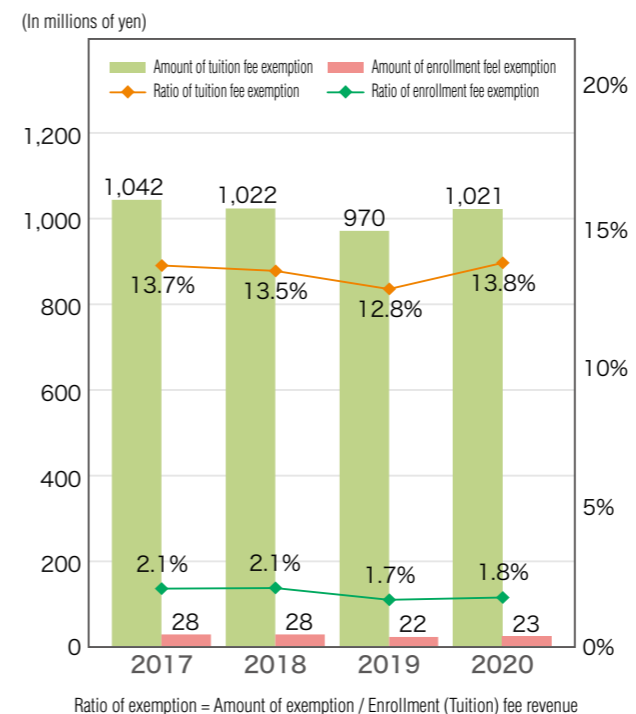
Improving Student Support

Enhancement of the Tuition Fee Exemption

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

In AY2020, 83 students were granted exemptions from enrollment fees totaling 23.41 million yen and 5,557 students were granted exemptions from tuition fees totaling 1,021 million yen.

Exemption of enrollment and tuition fees



Enhancement of Scholarships

The university has enhanced its financial assistance for outstanding students based on a combined financial support management model for tuition fees and scholarships that includes university recommendation scholarships for continuing to graduate school, which started in AY2019, scholarships for students with outstanding grades, and research scholarships, which started in AY2021.

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 and it is funded by non-subsidy revenue of the university. With the increase in the number of international students received by the university, the program provided 61.92 million yen in support of 78 students in AY2020.

The Study Abroad Support Program (Habatake! Scholarship) is another of the university's unique scholarship programs for studying abroad. In AY2020, the university was affected by the growing global COVID-19 pandemic and the Ministry of Foreign Affairs gave a risk rating or infection risk rating of 2 or higher to many countries, stopping overseas travel by students for an extended period. The university canceled April 2020 financial aid applications for the program as there was no prospect for the easing of travel restrictions at that time. For December 2020 applications (for travel from April 2021), the university decided to select students on the assumption that the program would restart and has been providing financial aid only for programs for which travel has been authorized.

The university accepted applications for financial aid for online study abroad programs to earn credits in AY2020 and provided aid to students who met the requirements.

In AY2020, the university provided a total of 68.7 million yen in financial support so that international students could study in Japan through the Tsukuba Scholarship and Japanese students could study abroad through the Study Abroad Support Program (Habatake! Scholarship).

Support Activities for Students with Disabilities: Enhancement of the Peer Tutor System

To provide reasonable assistance to students with disabilities and meet the varied support needs from a diversity standpoint, the university has strengthened its system for collaboration with educational organizations and provides support through peer tutors with various skills.

After completing a training course provided by the Center for Diversity, Accessibility and Career Development (DAC Center), peer tutors assist students with disabilities who have been identified as needing assistance with their studies. Peer tutors may themselves be students with disabilities, but all peer tutors have taken the training course and are actively participating in the management of the support team and the training of peer tutors, playing a central role in the support activities.

In AY2020, as a mutual support system for students, the peer tutor system that was initially divided by type of disability (visual, hearing, motor/internal, development) was fundamentally reexamined and rebuilt into a system that is divided by type of support need (creating text data, note-taking, movement assistance, developmental disability support activities).

In December 2020, Learning Support Book (LSB)—a service for distributing support information created by peer tutors and others—won the Bronze Award in the Communication Design category of the International Association for Universal Design (IAUD) International Design Awards, which is an international program for recognizing excellent Universal Design.

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. In AY2019, we set up overseas bases to strengthen our international industry-university collaboration in Boston and Silicon Valley.

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.

During the global COVID-19 pandemic, the university used LII in Silicon Valley to provide an online program to support international expansion of faculty members hoping to collaborate with companies, VCs, and accelerators in the area.

Also, to look further into open innovation ecosystems related to industry-university collaboration activities and startup development activities in the Boston area and activities being carried out by other universities there, the university commissioned companies with staff in Boston to conduct surveys on potential future industry-university collaboration activities in the Boston area.

Besides activities through these two bases, we have also launched an entrepreneur education program in San Diego in partnership with the University of California, San Diego (UCSD).

In the future, we are planning to start two other initiatives

through the bases in Boston and Silicon Valley, namely 1) international funding through startups launched at the University of Tsukuba and seed-stage startups and 2) construction of international relationships of industry-university collaboration through introduction of the university's research activities to local companies, while at the same time working to develop our bases in Europe and Asia (Malaysia, etc.).



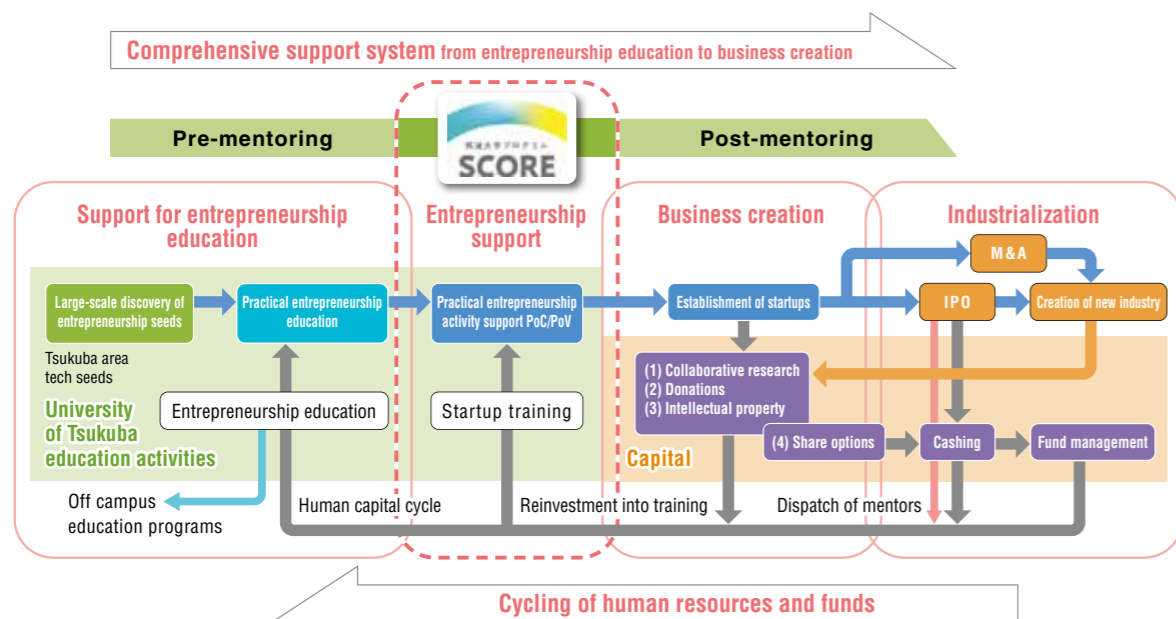
Selected for the JST SCORE Program to Promote the Creation of Venture Capital Firms Originating in Universities

In September 2020, the University of Tsukuba was selected for the Program of Start-up Incubation from Core Research (SCORE; University Promotion Type), which is run by the Japan Science and Technology Agency (JST). SCORE (University Promotion Type) is a program that promotes the creation of startups originating in universities 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 a business.

Being selected for SCORE (University Promotion Type) means that the University of Tsukuba can provide hands-on support for

the creation of startups originating in the university—covering all steps from entrepreneurship education to support for launching the firm—by pairing them with external professional mentors and entrepreneurship support staff at the university.

The university also aims to create a startup ecosystem in which startups that were established through the program and grow into publicly listed companies return their support to the university through collaborative research expenses, donations, share options, and other funding, which is then put back into the system to provide support for other startups in an autonomous support cycle.



Support in the Creation of Ventures

Support for the creation of startups at the University of Tsukuba includes: (1) a comprehensive consultation office, (2) funding and facilities, (3) entrepreneurship education, and (4) entrepreneurship support.

(1) Comprehensive Consultation Office

Startup Consultation Office

This office was created in the Headquarters for International Industry-University Collaboration in 2020 as a one-stop location for students and faculty members to consult with staff about starting a business. Depending on the consultation needs, the office can provide business model advice or information about public projects, entrepreneurship education courses, or services to support starting a business offered by public organizations. Consultations are with individuals who support business establishment, such as the Technology Transfer Manager in the Headquarters for International Industry-University Collaboration.

(2) Funding and Facilities

- Commercialization Promotion Projects**
Funds and lending of university facilities are offered to faculty and graduate students at the university to aid in the implementation of research results in society
- Cross-discipline R&D Projects**
Funding for faculty for research results that cross different disciplines aimed at implementation in society
- Projects for Strengthening Tsukuba Industry-University Collaboration**
Funding for joint research with national research institutes in the Tsukuba area

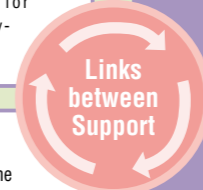
(3) Entrepreneurship Education

- [Course] Next-Generation Entrepreneur Training Course**
Learn the spirit of entrepreneurship oriented toward solving social issues
- [Course] Essential Knowledge of Management and Intellectual Property for Entrepreneurs**
Study successful business practices for starting a business
- [Course] Tsukuba Creative Camp**
Basic: Create business models
Advanced: Students aiming to start a business create highly feasible business plans
- Exploration and Development of Global Entrepreneurship for NEXT Generation (EDGE-NEXT)**
Basic: Learn how to create business development scenarios from research results
Developmental: Aim to meet the requirements for advancing to a venture round
- Overseas Training (UCSD Training, National Taiwan University Training, Silicon Valley Online Training)**
Improve business pitching skills in English and understand overseas markets

(4) Entrepreneurship Support

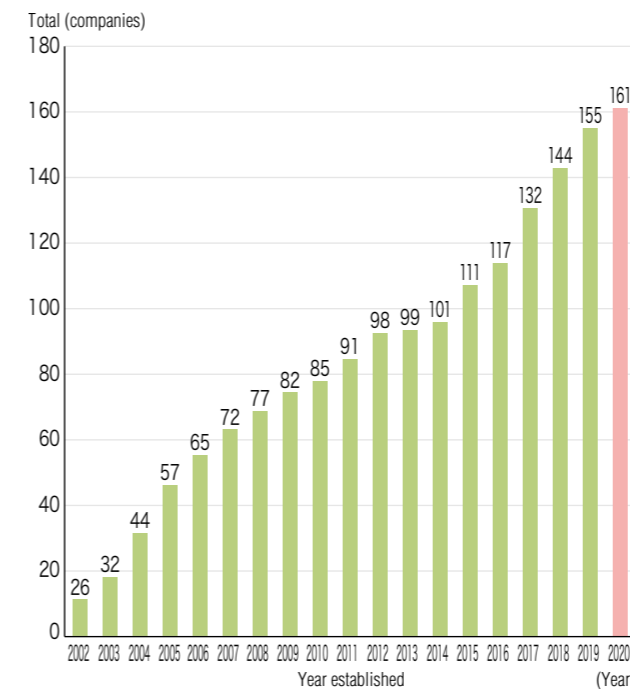
SCORE Program

In 2020, the University of Tsukuba was selected for the SCORE University Promotion Type program being run by the Japan Science and Technology Agency (JST). It is a program to promote the creation of startups originating in universities that have high growth potential based on the university's excellent seeds. It provides funding and hands-on mentoring from mentors to researchers at the university who are trying to advance from the research stage to the business creation stage.



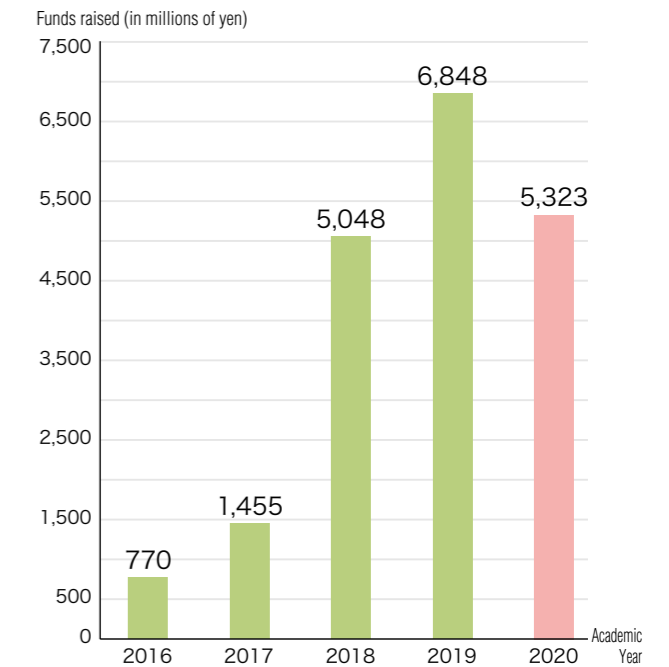
No. of Startups Launched at the University

Approximately 10 startups have been launched annually at the University of Tsukuba since 2015, and as of the end of AY2020, 161 startups have been established in total.



Annual Change in Funding for Ventures Launched at the University

The amount of funds raised for startups launched at the University of Tsukuba reached 5.3 billion yen as of the end of AY2020.



Received an A in the Top Global University Project Second Mid-term Evaluation

In the mid-term evaluation for the Ministry of Education, Culture, Sports, Science and Technology Top Global University Project conducted in AY2020, the University of Tsukuba was given an A, which is the second highest rank on a five-step scale.

This was the second mid-term evaluation for the subsidy project for the progress up to AY2019 and it was based on documents and interviews. The University of Tsukuba's activities were given the grade of A for "continuing activities with the potential to achieve project goals." The university was highly rated for its success in making its education and research international through the active implementation of programs such as Campus-in-Campus, inviting overseas research units, and joint Master's and Doctoral Programs. Special mention was made of the use of the Course Jukebox System

to increase the number of credits recognized, virtual study abroad through online courses that began in AY2020 (number of online courses made available to partner schools by the University of Tsukuba through Course Jukebox: 184; participating students: 17), and the use of deputy principal investigators in inviting overseas research units. On the other hand, improvements were needed in the setting of targets and in positioning as a university-wide project.

Based on this evaluation, the university will further advance towards achieving the project vision and becoming self-propelling after completion of the project, and will strive to become a "Transborder University which opens up Japanese higher education and society to the world."

<Campus-in-Campus>

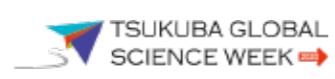
Schools with Partnership Agreements



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

Holding of the Tsukuba Global Science Week (TGSW) (Sept. 2020 to Feb. 2021) and the Tsukuba Conference

With the COVID-19 pandemic, Tsukuba Global Science Week (TGSW) 2020, which was to be the 10th such event, was held mostly online. The university held 25 sessions including joint sessions with partner schools overseas and research institutes in Tsukuba Science City as well as 11 online sessions and a digital poster session presenting over 230 research posters online. It was attended by 976 participants (including 356 non-Japanese) from 256 organizations (including 108 overseas organizations) in 53 countries and regions, sharing the appeal of Tsukuba Science City throughout Japan and the world even during the pandemic.



in AY2021, holding Tsukuba Conference 2021 both online and in hybrid format and TGSW2021 online, both in September.

Tsukuba Conference 2019 wins a Special Recognition Award from the Japan National Tourism Organization (JNTO)

Tsukuba Conference 2019 won a Special Recognition Award from the Japan National Tourism Organization (JNTO) from among international conferences held in AY2019 and the certificate was handed over in February 2021. With collaboration from 43 universities, government agencies, and companies in Tsukuba, it was praised as an excellent example of a conference suited to Tsukuba as a Science City for being created to nurture young researchers and for its clever PR activities to increase sponsorship from companies and others.



Promotion of Olympic and Paralympic Education

In AY2020, the Office for the Promotion of Olympic and Paralympic Activities held a Sports Volunteer Course to train volunteers and actively supported the Practical Course for Disability Sport Volunteers based on Introduction to Diversity and Inclusion (general course) and Japanese hospitality (Omotenashi) and Global Manners—Perspective for sport volunteers (general course) that had a high enrollment. Off campus, the university also held an online Seven University Sports and Liberal Arts Seminar (in collaboration with Waseda University, Rikkyo University, the University of Tokyo, Sophia University, Keio University, and the Kanda University of International Studies) to develop people who can think about culture across a wide range of fields in the



humanities, social sciences, and natural sciences and who can actively participate in the global community. As group activities were canceled for a long period due to the pandemic, the university created and posted a video called the "Reboot Program" of Student Athletes at the University of Tsukuba about methods for restarting training for athletes from junior high to university age. (<https://www.youtube.com/channel/UCSUQn9XdvxRtYNDuGXSS49A/featured>)

In AY2021, the university held an online send-off party for athletes participating in the postponed 2020 Tokyo Olympic and Paralympic Games as well as officials, coaches, and healthcare staff (past or current affiliation with the university or its schools). The university also hosted the Swiss National Team's pre-camp for athletes' final training in mountain biking, judo, and athletics using its athletic field, track, and other athletic facilities. Thorough zoning and other measures were implemented to control infection and about 30 student staff members collaborated with Tsukuba City and the Ibaraki prefectural government to keep the camp safe. These efforts resulted in a strong performance including a silver medal in mountain biking.



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, and health, medical care, and welfare. In AY2020,

23 different projects were selected (17 with university faculty, three with faculty at affiliated schools, one with the University Hospital staff, and two with students). Community collaboration activities that were previously held in person were severely restricted due to the COVID-19 pandemic, but online platforms and thorough infection control measures were used to keep various projects moving in distinctive University of Tsukuba fashion.

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



Local revitalization through rogaining in the Tsukuba urban district
Discovery and sharing of attractions produced from interaction between university students and eight regions, creation of a lively atmosphere, map making, and city walking



Young talent will not be crushed!
Trial of sports physicals for boys and girls with MRI-mounted vehicles

Opening of the Advanced Critical Care Center

On October 16, 2019, the activities of the Higher Emergency Center established by the University Hospital in AY2018 led to its designation by Ibaraki Prefecture as the prefecture's first Advanced Critical Care Center. Since launching on April 1, 2020, the Advanced Critical Care Center always remains ready to accept critical emergency patients who cannot be treated at tertiary emergency facilities.

Collaborating with other medical institutions inside and outside of the prefecture, the center has fulfilled its role even through the pandemic, accepting about 8,800 emergency patients and about 3,200 ambulance and other transports in AY2020, with operations proceeding smoothly.

To create a safe and secure community for residents of Ibaraki prefecture, the center will not only provide safe and secure emergency care services as the last defense in emergency care, but also work to enhance the emergency care framework through the development of emergency physicians as the core hospital of the emergency department specialist program.



Development of the Research Studio Operation Format

Research Studio powered by SPARK is Japan's first acceleration program for fields of medicine. It was launched at the University of Tsukuba in 2018 and in 2019 it developed into a collaboration hub for five universities around Japan. Spurred by the pandemic, the video conferencing system it had been using from the start went full scale in 2020, and an online training system was developed by using e-learning with the numerous learning units accumulated through the program's operations and implementing online brainstorming methods.

Even with operations being online, the university enhanced collaboration with its overseas offices (Stanford University SPARK program, UCSD Institute for the Global Entrepreneur [IGE])—these overseas bases are a unique feature of the program—and achieved results equal to in-person visits through training only possible online using the nationwide network in the United States.



Promotion of the Collaboration Center Development Project for Next-generation Medical Devices

After being selected for the Collaboration Center Development Project for Next-generation Medical Devices by the Japan Agency for Medical Research and Development (AMED) in AY2019, the University Hospital began providing practical educational programs, such as clinical training programs, and support programs for researchers from industry, government and academia and graduate students, as a human resource development hub for research and development of next-generation medical devices that can be promoted internationally.

The Tsukuba Clinical Research & Development Organization (T-CReDO) uses various frameworks, such as its seamless R&D support system as a bridging research center and its rich range of practical training seminars for professionals.

In AY2020, with the COVID-19 pandemic, the University Hospital launched an online needs discovery workshop using videos from clinical settings. It also provided and put into practical use a matching service with companies mostly in Ibaraki prefecture

based on the clinical needs it found in its surveys. A joint symposium was held online with the National Cancer Center Hospital East and the Tokyo Women's Medical University Hospital.



Implementation of Support Project for Building the Worldwide Learning (WWL) Consortium

We have successfully applied for the Support Project for Building the WWL Consortium by the Ministry of Education, Culture, Sports, Science and Technology (MEXT) to pass on and further enhance the results of our Super Global High School (SGH) activities, which we have been implementing for five years since AY2014. This project is carried out jointly by the Senior High School at Sakado, University of Tsukuba, which acts as the base school, two academic high schools and three special needs education schools with high school departments affiliated with the University of Tsukuba, and partner schools both inside and outside Japan.

In AY2020, only its second year, the WWL program initially shut down entirely due to the COVID-19 pandemic, but then resumed using online platforms. The Senior High School at Sakado, University of Tsukuba, launched a new exchange program with foreign residents in Japan, disseminated methods for international exchange during the pandemic, and held the High School Students' International ESD Symposium online.

Being the administrative organization for the organizer, the Education Bureau of the Laboratory Schools held All Japan High School Forum special interest group sessions online linked to other university programs such as the Bachelor's Program in Global Issues, greatly contributing to Japan's efforts to develop international human resources.



Strengthening Cooperation between the University and Affiliated Schools

Through many discussions between senior high schools affiliated with the University of Tsukuba and Ochanomizu University, a lecture-based Career Forum and Career Café special interest-group sessions had become a regular feature. In AY2020, the schools used their ingenuity to continue activities during the COVID-19 pandemic, switching the format to hold a Career Forum using video streaming. The results were reported by video streaming at educational research conferences and they have been repeatedly verified through questionnaire surveys.

In collaboration with the Faculty of Health and Sport Sciences and through cooperation with the Nationwide Olympic and Paralympic Movement Project and programs such as the International Pierre de Coubertin Youth Forum, the university also made achievements in developing a global spirit in students at affiliated schools. In particular, as part of Olympic education programs for high school students, the Coubertin-Kano Youth Forum was held online in Japan in December 2020 and preparations have begun for the International Pierre de Coubertin Youth Forum in Cyprus that has been set for AY2022.



Development of Inclusive Education Models

Up to AY2018, the university regularly held the Kurohime Kogen Community Life three-day, two-night program for students from regular and special needs affiliated schools to promote mutual understanding and exchange through communal living. Based on the success of this program, the university held a new Miura Beach Community Life two-day, one-night program in August 2019 for all 11 affiliated schools in Miura, Kanagawa. In AY2020, the Miura Beach Community Life program involving an overnight stay was canceled due to the COVID-19 pandemic, and the university instead held an online presentation relay with videos created to achieve an inclusive environment at all affiliated schools. Overcoming barriers, this year's program developed more inclusive attitudes and was a great success.



Formulation of Policies for Response to COVID-19 and Financial and Facility-related Measures

As COVID-19 began to spread globally, the university established a COVID-19 Response Team in January 2020. This team shared information throughout the university and formulated the university's response policies in line with national and prefectural policy. In May 2021, the university compiled a supplementary budget to develop the information infrastructure required for online classes and working from home, provide financial aid to students, and enhance infection control measures. University-wide measures are being taken to maintain the continuity of education and research activities while preventing infection.

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

Main Policy Formation and Other Measures Against COVID-19

2020.4	<p>Created guidelines for COVID-19 response</p> <ul style="list-style-type: none"> ▶ Took thorough measures such as avoiding the 3 Cs, closing the campus to visitors from overseas, and use of online meetings <p>Formed activity guidelines based on the status of COVID-19</p> <ul style="list-style-type: none"> ▶ Formed activity guidelines around six components: classes, research, campus access for students, extracurricular activities, university meetings, and system for administrative work <p>Moved the spring semester fully online and set rules to restrict campus access and movement</p>
5	<p>Emergency financial aid to combat the effects of the pandemic (student aid package)</p> <ul style="list-style-type: none"> ▶ Informed students about emergency financial aid policies (cash handout, temporary loans) <p>Special measures for school absence due to the COVID-19 pandemic in AY2020</p> <ul style="list-style-type: none"> ▶ Set and provided information on special measures regarding absence and withdrawal from the university and tuition exemptions in such cases
6	Measures to reopen the campus to students and resume in-person educational activities
8	<p>Guidelines for holding classes in the fall semester</p> <ul style="list-style-type: none"> ▶ Partially resumed in-person classes with students spaced further apart
9	<p>Created a manual for managing suspected infections and the course of action for such individuals</p> <ul style="list-style-type: none"> ▶ Set and provided information on the course of action for students, faculty, and staff who may require a PCR test
10	<p>Formulated guidelines for measures to prevent COVID-19</p> <ul style="list-style-type: none"> ▶ Formulated guidelines for university operations to ensure infection control measures are carried out thoroughly and ensure continuity of university activities <p>Guidelines for restarting group extracurricular activities at the University of Tsukuba</p> <ul style="list-style-type: none"> ▶ Resumed group activities with the provision that guidelines are followed and infection control measures are properly implemented
2021.1	Revised the guidelines for measures to prevent COVID-19
3	<p>Guidelines for holding classes in the AY2021 spring semester</p> <ul style="list-style-type: none"> ▶ Continued a combination of online and in-person classes <p>Special measures for school absence due to the COVID-19 pandemic in AY2021</p>
8	<p>Start of workplace vaccinations (1st dose: August 30 to September 22)</p> <p>Guidelines for holding classes during the summer holidays</p>
9	<p>Guidelines for holding classes in the fall semester</p> <ul style="list-style-type: none"> ▶ Continued a combination of online and in-person classes <p>Workplace vaccinations (2nd dose: September 27 to October 20)</p>

Financial Measures

To carry out measures such as developing the information infrastructure for online classes and working from home, developing air conditioning and ventilation facilities, providing emergency financial aid to students, and strengthening infection control measures, the university used donations (see "Emergency Relief Fund" on page 35) and government subsidies and also formed a budget for COVID-19 and Related Expenses (budget amount: 925 million yen).

Facility and Information Infrastructure Development Measures

To prevent COVID-19 infections and enable the resumption of education and research activities, the university improved facilities by upgrading its ventilation facilities (installation of 145 units) and renovating restrooms (eight locations), for example. We also increased the number of concurrent Remote Desktop connections and VPN connections in the Zengaku Computer System to make the system more convenient for student classes and studying and for faculty and staff working from home.



Ventilation units in the Kasuga Area lecture rooms

Education and Student Support

Financial Aid for Students

Emergency Relief Fund

In May and June 2020, the university established an Emergency Relief Fund for Students Affected by the Novel Coronavirus Pandemic for students who were struggling financially due to the loss of allowances from home and part-time work, collecting about 140 million yen, mostly from faculty and staff of the University of Tsukuba. An additional 28 million yen was collected from alumni and others through crowdfunding, online events, and other activities, for a total of 170 million yen in support to assist about 9,900 students.

Food Assistance Program

The university created a Food Assistance Program for Students in January and February 2021, calling for food donations from local companies and alumni. Nearly 30 tons of goods was delivered to the university and distributed among 4,700 students.



Measures for Online Classes

Holding Online Classes

Classes were held online in the AY2020 spring semester, and in-person classes resumed for some subjects in the fall semester while implementing thorough infection control measures. The university provided guidelines and important points for faculty to hold online classes to keep the quality high. Based on the current level of infections, some classes were held in-person as long as the face-to-face format was deemed educationally more effective and a suitable classroom could be arranged.

Improvement of the Support Framework

To support smooth preparation and implementation of online classes, a portal site for faculty and students was created on the Academic Computing & Communications Center website and faculty were provided with special training.

We also assigned staff with specialist knowledge to respond to inquiries about how to setup the connection and use the online class platform and provide assistance to faculty and students.

In April 2020, we gave all the university's educational organizations guidelines on difficulties and assistance methods for students with disabilities using remote learning and were the first university in Japan to publish such guidelines.

Introduction of a Student Support App

World Life Mapping, a startup started at the University of Tsukuba, offered to provide an app for free. After discussions, the university decided to begin providing the Student Support App for its students as a communication tool during the pandemic from March 2021. The app has two functions: Ciby Link to help improve daily life and Life Link to support the exchange of information. Ciby Link categorizes the various thoughts students are likely to have, and students can click on a topic to receive advice created under the supervision of faculty members in psychology at the university. Life Link allows students to exchange text information about common topics without sharing their email address.

As of September 2021, as many as 970 students have registered with the service, and many have commented that the advice they received was very useful.

Research

Program to Apply the Wisdom of the University to Tackle COVID-19 Related Emergency Problems

With the aim of relieving the crisis arising from the globally developing COVID-19 pandemic, the University of Tsukuba launched the Program to Apply the Wisdom of the University to Tackle COVID-19 Related Emergency Problems—funding for open invitation research at the university to back experts in various fields at the university using their research capabilities to help resolve problems. Twenty-seven research projects in diverse fields such as life science, psychology, computer science, education, healthcare, and arts were launched in May 2020.

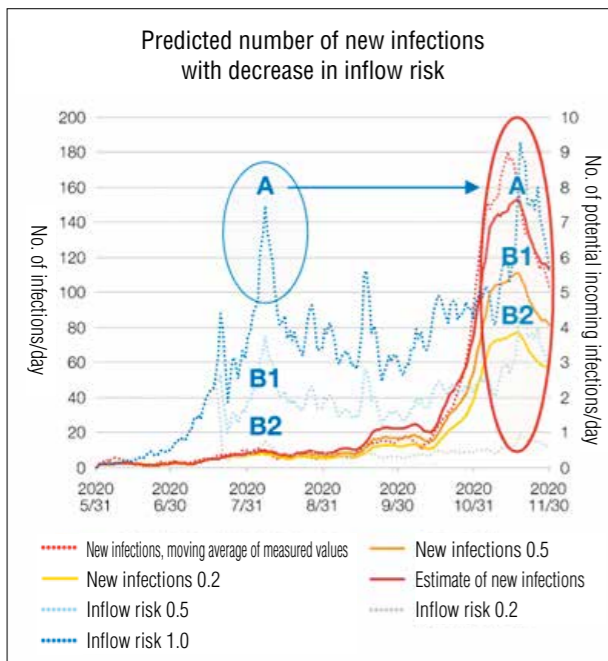
One of the goals of the program was to give back the benefits of the research to society swiftly. For short-term projects, support was given to cover research expenses and publicity expenses alongside assistance from URAs (Research Administrators) to help maximize the speed and the degree to which the research results could restore society. A website was also created to post interviews

about project results in April 2021.

The program produced many research results covering not only topics related to medicine such as viruses and vaccinations, but also various subjects concerning our daily lives, such as staying healthy during stay-at-home requests, mental health, educational systems, human movement and crowding, the effects of information dispersion, promoting arts and culture, and family relations. These results are being used in the field.

Researchers brought together for the common goal of countering the COVID-19 crisis may also form connections that may lead to new research projects. They use the results and contents collected over a short period and their activities led to the holding of a symposium for the purpose of having URAs act as a bridge to develop an international cross-discipline network and the holding of a COVID-19 Sociology course as an AY2021 class subject.

Research Results Predicted Number of New Infections with Decrease in Inflow Risk



This study focusing on Sapporo predicted how effective limiting the inflow of people from other areas with a high number of infections can be on reducing the number of infections in the area of focus. The dotted red line and solid red line are the actual number of new infections and the predicted number from simulations, respectively. If the inflow risk (number of incoming people with infections) is limited to 50% (B1), the predicted number of new infections decreases to the solid orange line.

* The research results for all 27 projects are available on the University of Tsukuba Organization for the Promotion of Strategic Research Initiatives website.
https://www.osi.tsukuba.ac.jp/fight_covid19_interview/

Creation of Tips for Continuing Research during the Pandemic

The Research Administration/Management Office has continued collecting information about the response to the COVID-19 crisis in laboratories around the world from before the declaration of a state of emergency. To make it available for researchers, a page introducing tips for lab measures was created in the COTRE research information portal run by the URAs. It offers a collection of tips for continuing research without being hindered by COVID-19.



Support for RA Expenses

All graduate students enrolled in the university (excluding those on a leave of absence or who were otherwise unable to perform RA duties) were offered Research Assistant (RA) positions through the expansion of expenses for RA support as financial support for graduate students. A total of 4,448 students were assigned as RAs, and 133 million yen in support was given. Graduate students who could not take an RA position for various reasons (125 students) were each given a research expense grant of up to 30,000 yen, for a total of about 3.73 million yen.

University Hospital Measures

The University of Tsukuba Hospital was designated as a core COVID-19 hospital by Ibaraki prefecture in April 2020, and it provides treatment for moderate to severe cases.

Infection Control System in the Hospital

The University Hospital is Ibaraki prefecture's only Special-Purpose Hospital/Advanced Emergency and Critical Care Center. To create a thorough system for preventing hospital-acquired infections and keep the hospital from losing that status, the following measures were implemented from April 2020 to restrict treatment functions (inpatient care, outpatient care, surgery) to around 80% regular capacity, which were then gradually relaxed from July and reached around 90% regular capacity. However, the number of severe non-COVID-19 emergency care patients is increasing.

[Outpatient Care]

Postpone treatment if the condition permits and use follow-up consultations by phone when possible to reduce the number of patients coming to the hospital.

[Inpatient Care and Surgery]

Postpone treatment if the condition permits and install a PCR test center at the hospital to give PCR tests to all potential inpatients before admission to the hospital.

Improvement of the Medical Care System through the Development of Facilities and Equipment

As a core hospital for receiving COVID-19 patients, the University Hospital developed its equipment including ventilators and extracorporeal membrane oxygenation (ECMO) machines that are essential for treating severe cases as well as real time PCR testing units that are essential for preventing infection. It also developed its facilities by adding more negative pressure hospital rooms and installing a PCR test room in the hospital. At the same time, the medical care system was also strengthened. All these changes contributed to building an environment that helped prevent infections from spreading and keep infections out of the hospital.

Measures at Affiliated Schools

The 2020 academic year for the affiliated schools began with a full closure of educational activities and a declaration of a state of emergency. This was followed by a combination of online classes and using a staggered schedule.

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 120 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.

Dispatching Doctors and Nurses as Healthcare Support

Fulfilling its role as the office for the Ibaraki prefecture cluster response task force, the University Hospital also assisted with COVID-19 measures outside the hospital by providing guidance on handling clusters at medical institutions in the prefecture, providing medical support by dispatching doctors and nurses to designated COVID-19 hospitals and accommodation facilities for people with mild cases, and transporting patients by DPAT/DMAT dispatch to the Diamond Princess cruise ship among other activities.

Dispatch of Doctors to COVID-19 Vaccination Sites

Upon request from the Ibaraki prefectural government, the University Hospital dispatched a total of 768 doctors to the mass vaccination center installed by the prefecture and five group vaccination sites installed by the city in June and July 2021 to help develop the vaccination system and boost vaccinations. We will continue dispatching doctors.



Measures at the University Library

As a measure for online classes, faculty-recommended books related to classes were made available as e-books so that they could be accessed remotely from off campus. The University of Tsukuba Library website was also updated with a link to the e-books on the home page to make them more visible. To improve access to medical information that became more essential and urgent in the pandemic, the university added remote access services to its paid contract with the Japan Medical Abstracts Society database so that it could be accessed off campus as well. As a measure to combat COVID-19, a list of electronic materials that the publishers eased usage conditions on for a limited time was added to the University of Tsukuba Library website to provide more information about this service. The library also offers a service for mailing books and copies of literature to residences.

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.



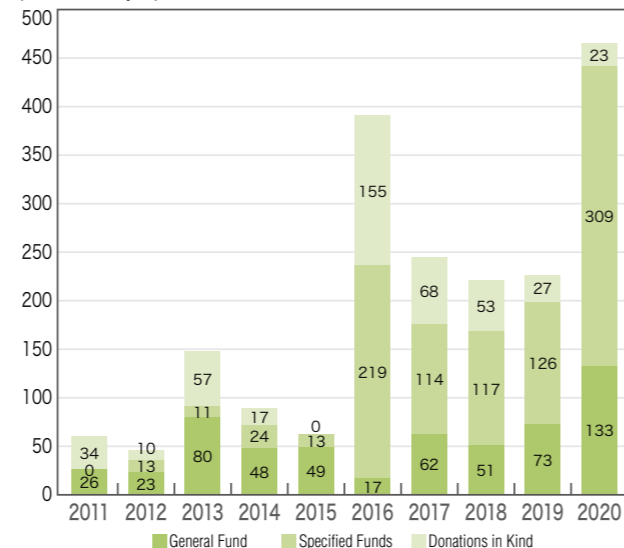
AY2020 Cash Donations Received

(In thousands of yen)

Purpose of Donation	Donation Amount	No. of Donations
General Fund	133,250	3,194
Specified Funds	308,923	9,823
Emergency Relief Fund for Students Affected by the Novel Coronavirus Pandemic	170,824	5,469
151st Year Since Founding and 50th Anniversary of the University of Tsukuba Commemorative Fund	66,883	2,622
University of Tsukuba Sports Association Project	5,116	247
University of Tsukuba Hospital Support Project	26,617	56
Shiho-kai Fund	26,954	1,101
Tsukuba Futureship Association for International Student Support	2,281	263
Student Support Project Fund	9,892	62
Young Researchers Support Project	350	2
Assets-in-kind Utilization Fund	6	1
Total	442,174	13,017

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 AY2020, we implemented four projects with a funding amount of approximately 34 million yen. Of particular note was the project launched under the title, "Cheering on University of Tsukuba Students," for students experiencing financial hardship due to the COVID-19 pandemic in which a financial aid package for students

was created. In addition to donations from University of Tsukuba faculty and staff, the project brought in 28 million yen through crowdfunding, enabling financial aid to be given to students.

The university will continue actively implementing projects suited to its qualities and promote its activities, helping to develop a culture of donating in Japan.



Cheering on students to save our future.
[University of Tsukuba Support Project]



For everyone to enjoy pole vaulting.
Inexpensive and high quality made-in-Japan poles!



Various types of work experience for students!
Opening of the Egao (Smile) Café



Protecting the lives of children battling cancer.
Protecting the health of young people with a future!

Start of the Young Researchers Support Project

The university created the Young Researchers Support Project as a special fund to support capacity building in young researchers who lead the creation of future innovation and students aiming to become researchers. Donations received for this fund are used in the following programs.

- Programs to cover the research expenses in projects selected from among submissions from the public to support students and individuals with unstable employment to work as self-sufficient researchers.

- Programs to cover the expenses required for presenting research activity results, such as fees for publishing articles, fees for participating in academic conferences, and other relevant fees.

- Programs to promote exchange with researchers and individuals with practical experience in other fields primarily to build the capacity and qualifications of graduate students and individuals with unstable employment to work as researchers in specialist fields.

Number 1 in Japan in the Impact Rankings 2021 (Overall)

In April 2021, the British magazine Times Higher Education (THE) published its THE Impact Rankings 2021 that rank universities' social contribution activities from the perspective of SDGs. The University of Tsukuba was ranked first in Japan overall (101–200th in the world ranking).

It increased from 4th in Japan in the previous year, demonstrating the university's steady progress towards achieving SDGs.

World ranking	Japan ranking	University	Score (overall)
101 - 200 (101 - 200)	1 (4)	University of Tsukuba	77.5 - 85.2
101 - 200 (101 - 200)	1 (4)	Hiroshima University	77.5 - 85.2
101 - 200 (76)	1 (1)	Hokkaido University	77.5 - 85.2
101 - 200 (101 - 200)	1 (4)	Kyoto University	77.5 - 85.2
101 - 200 (201 - 300)	1 (9)	Okayama University	77.5 - 85.2
101 - 200 (97)	1 (3)	Tohoku University	77.5 - 85.2
101 - 200 (77)	1 (2)	The University of Tokyo	77.5 - 85.2
201 - 300 (301 - 400)	8 (14)	Keio University	71.0 - 77.4
201 - 300 (201 - 300)	8 (9)	Nagoya University	71.0 - 77.4
201 - 300 (401 - 600)	8 (20)	Osaka University	71.0 - 77.4
201 - 300 (101 - 200)	8 (4)	Ritsumeikan University	71.0 - 77.4

* Numbers in brackets are last year's rankings.

Global Warming Initiatives

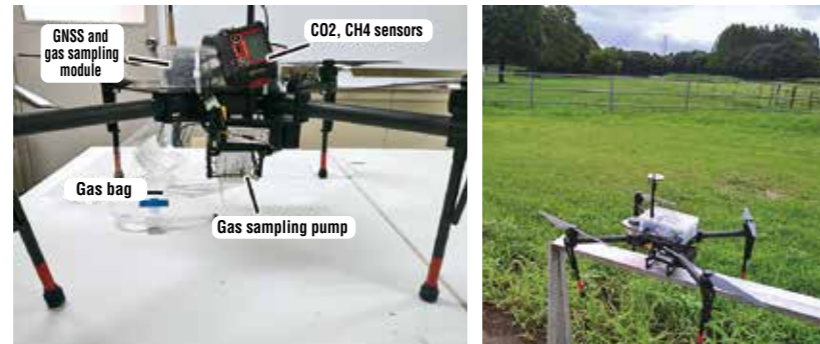


Holding the Tsukuba 3E Forum

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 AY2020, three TF projects were implemented, including a project to develop UAV (drone)-assisted technology for 3D measurement of global greenhouse gas levels in farmland, lakes, and other places. The Next-generation Energy System TF actively works with 18 organizations from industry, academia, and government, including two that joined last year, and held the

Ibaraki Hydrogen Symposium 2020 in collaboration with the Ibaraki prefectural government and Ibaraki Hydrogen Council.



Activities to Achieve Diversity



3rd Time Gold Winner in Work with Pride 2020

For its LGBTQ-related activities, the University of Tsukuba won Gold for the third time in the Pride Index 2020 created by the volunteer association work with Pride. This year, the university was evaluated highly for its revision of regulations on leave, holidays, allowances, and travel expenses for the welfare and benefits of faculty and staff members who have a partner (certified in documentation by the local government) and received the Gold award for achieving all five indicators set by work with Pride. Based on its founding philosophy of being an "open university," the University of Tsukuba strongly believes that supporting people of diverse backgrounds is the source of innovation and will continue

promoting diversity and ensuring that the LGBTQ community is supported.



Research Initiatives



See-Through Captions Wins the James Dyson Award Best Award in Japan



The Digital Nature Group at the University of Tsukuba won the James Dyson Award 2021 Best Award in Japan for its See-Through Captions developed for deaf and hard-of-hearing people to communicate with hearing people.

See-Through Captions is a system that displays captions converted into text by real-time speech recognition on a transparent display.

The system enables deaf and hard-of-hearing people to read the captions while seeing the expressions and gestures of the person speaking so that both individuals can see the captions as they appear. Two types of this system have been developed, a stationary type and a portable type, and it can be used in many different situations from everyday situations to workplaces, guided tours or other learning situations. This project has the potential to greatly improve the value of experiences for deaf and hard-of-hearing people.

We have already used See-Through Captions in demonstration trials on a guided tour of the National Museum of Emerging Science and Innovation for deaf and hard-of-hearing people and have run trials to test its efficacy in communication with visitors at the Tsukuba City Hall information counter.



Project Members: Akihisa Shitara, Kenta Yamamoto, Ippei Suzuki, Ryosuke Hyakuta, Ryo Iijima, Yoichi Ochiai
 Department: University of Tsukuba Digital Nature Group/xDiversity
 Transparent display provided by Japan Display Inc.

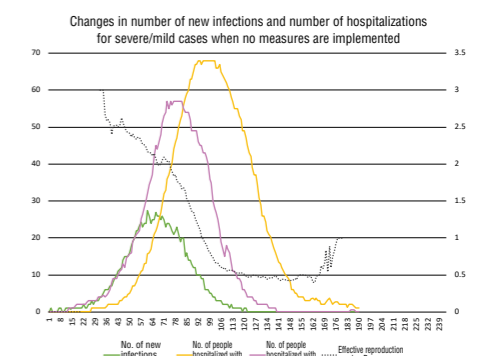


Simulation of the Effectiveness of Infection Control Measures Using Artificial Intelligence (AI)

Much energy is devoted to data sciences, as demonstrated by the use of artificial intelligence (AI) and other tools to effectively utilize enormous amounts of data ("big data") that have accumulated in corporations and in society in general, for marketing and other purposes. We are studying an approach to finding solutions to various social issues using "agent-based models" in which human relationships are viewed as a network and the patterns of activity of individuals are modeled and used to predict the behavior of entire groups.

We are using this approach to conduct simulations to determine the effectiveness of measures to control COVID-19. Since the initial outbreak, we have been using a database of all 80,000 or so people infected with COVID-19 in Wuhan, China, considered the place where the virus originated, to actively conduct simulations on the kinds of behaviors that people exhibited in response to measures such as reduced economic activity and limitations on movement and the effect of these behaviors on the spread of the virus. We have been actively disseminating the simulation results

of this research. Our research results have also been used to make policy decisions in Europe and North America.



The Driving Sustainable Development website has a message from the university president as well as messages from faculty members who are strongly involved in SDGs and information about research projects being carried out by research centers and research units.

Initiatives to Strengthen Management

Based largely on the National University Management Strategy (Ministry of Education, Culture, Sports, Science and Technology, June 2015), the university formulated management strengthening measures for the Third Mid-term Goals Period, consisting of three pillars (strategy for acquiring external funds, development of profitable businesses, and a personnel strategy) aimed at reforming the revenue and expenditure structure to diversify the university's independent financial resources and strengthen its financial base. We are currently working to realize these measures. In AY2020, despite each strategy being affected by COVID-19, the university consistently provided the necessary support as exemplified by the Emergency Relief Fund for Students.

(1) Strategy for acquiring external funds

Through initiatives such as support to secure Grants-in-Aid, acquisition of large competitive funds, prefectural support for the Project for University-Industry Cooperation Strengthening in Tsukuba, and opening of bases for international industry-university collaboration, we acquired a total of 13,678 million yen in external funds, which was higher than the previous fiscal year.

(2) Development of profitable businesses

In crowdfunding, a new financial aid package was created for students struggling financially due to the COVID-19 pandemic, raising 28 million yen, for a total of 34 million yen acquired. We raised 29 million yen for 11 courses in the extension program, and 138 million yen in donations (from 4,107 donors) for fund programs such as the Emergency Relief Fund for Students to combat the effects of the COVID-19 pandemic (donations collected in May and June).

For student support programs, we received cooperation from local companies and others (86 companies, equivalent of 23 million yen) and supplied food to students who were struggling financially due to the loss of allowances from home and part-time work. We acquired 2,714 million yen through profit-making business with these activities, which is higher than the previous year (1,998 million yen).

(3) Personnel strategy

We made efforts to curb personnel costs through effective initiatives including a review of teacher and staff placement. To encourage hiring of young faculty members and strengthen our research capacity, we decided to assign positions for the equivalent of 53 people.

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 four staff members in this system.

Initiatives of the Office of University Management Reform

The mission of the Office of University Management Reform is to prepare recommendations on specific measures for strengthening the university's future management base and requirements necessary for strengthening university management to enable the University of Tsukuba to continue to compete as an international university on the world stage 10 to 20 years from now and further develop education and research, bearing in mind future social changes and other changes in the environment surrounding the university. Therefore, to conduct a more fine-tuned, multifaceted

review, we have even added external experts such as corporate managers to the collaborative framework of faculty and staff members.

In AY2020, the Office held discussions on the establishment of a University Management Promotion Office (provisional name) to uphold the vision of a Designated National University Corporation from the coming Fourth Mid-term Goal/Plan Period, and exchanged opinions with faculty and staff to formulate a medium- to long-term vision including the Fourth Mid-term Goal/Plan Period.

Improvement of the Organization Evaluation System based on Quantitative Evaluation Indicators

In AY2020, while continuing to consistently evaluate organizations based on quantitative evaluation indicators, the university held discussions on improving the system it had been using to evaluate organizations. Specifically, the timing of dialogue-based discussions carried out to evaluate organizations was changed so that the results could be reflected promptly in the formulation of the respective organization's activity plan for the following year, improving the PDCA cycle. Along with these changes in dialogue timing, we have also introduced a system for document-based evaluation of organizations and for asking for targets and time schedules for improvement measures based on the evaluation results. In addition, to meet indicators proposed as the vision for being a Designated National University Corporation from the coming Fourth Mid-term Goal/Plan Period, we have further improved the evaluation system to help organizations boost their education and research capabilities to the level of benchmark universities in other countries.



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

University Officers

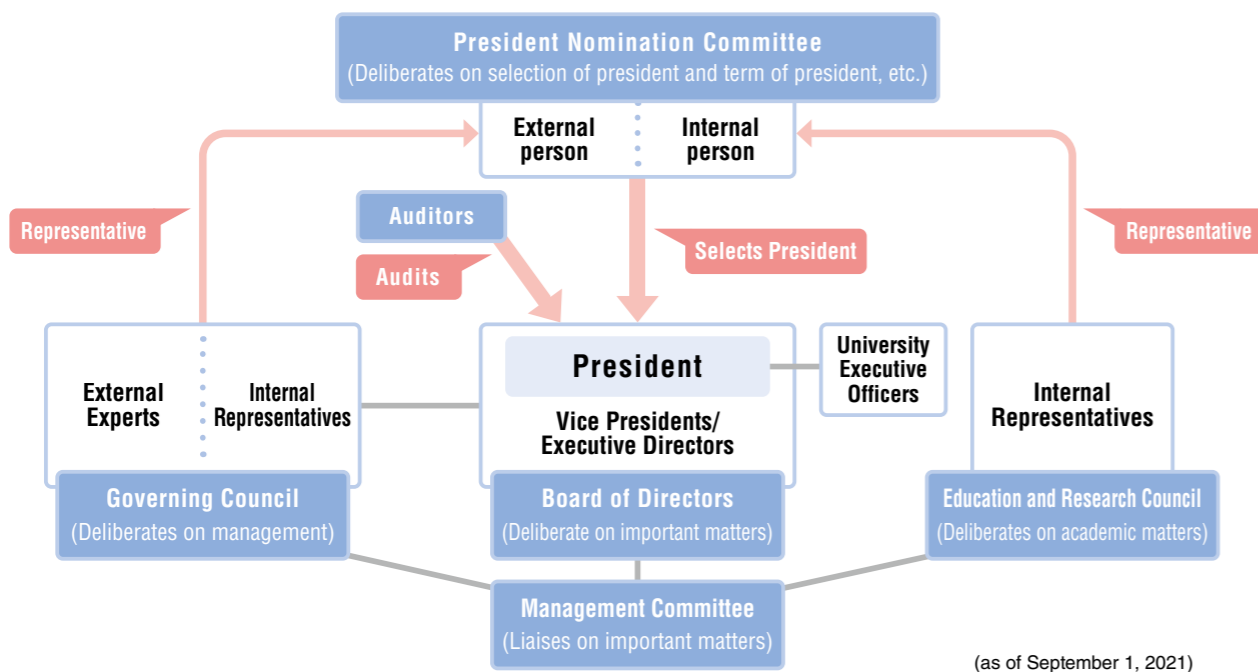
- The president is selected by the President Nomination Committee and is appointed by the Minister of Education, Culture, Sports, Science and Technology. The President Nomination Committee is composed of members selected from external members of the Governing Council and members selected from the Education and Research Council to reflect not only views on campus but also views of society at large.
- The executive directors (8) assist the president in managing the affairs of the university corporation.
- The vice presidents (10 in total, 7 of whom are concurrent directors) assist the president, receive orders from the president, and manage school affairs.
- The university executive officers (14) 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 (4) 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 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.

Deliberating Bodies of the University

- The Board of Directors deliberates on important matters concerning administration, and meets once a month. It is comprised of the president and executive directors (8). The auditors, vice presidents and executive officers also attend board meetings.
- The Governing Council is an organization which deliberates on important matters concerning management and meets seven times a year. It consists of the president, seven 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.
- 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.
- 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 (29 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 September 1, 2021)

The university has established the Education and Research Funds Misuse Prevention Plan to prevent the wrongful use of research funds and other funds, and has taken various measures to eliminate the causes of misuse and promote appropriate use of funds. The university also strives to raise awareness by implementing compliance education 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.

Misuse Prevention Plan

We have established a system of accountability in regard to the management of research expenses, 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, organizes the Education and Research Expense Management Promotion Committee and establishes the University of Tsukuba Research Funds Misuse Prevention Plan to identify the causes of misuse and to eradicate these.

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 within the respective departments that they manage and supervise, manage research expenses, 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 Education and Research Expense Management Promotion Committee.

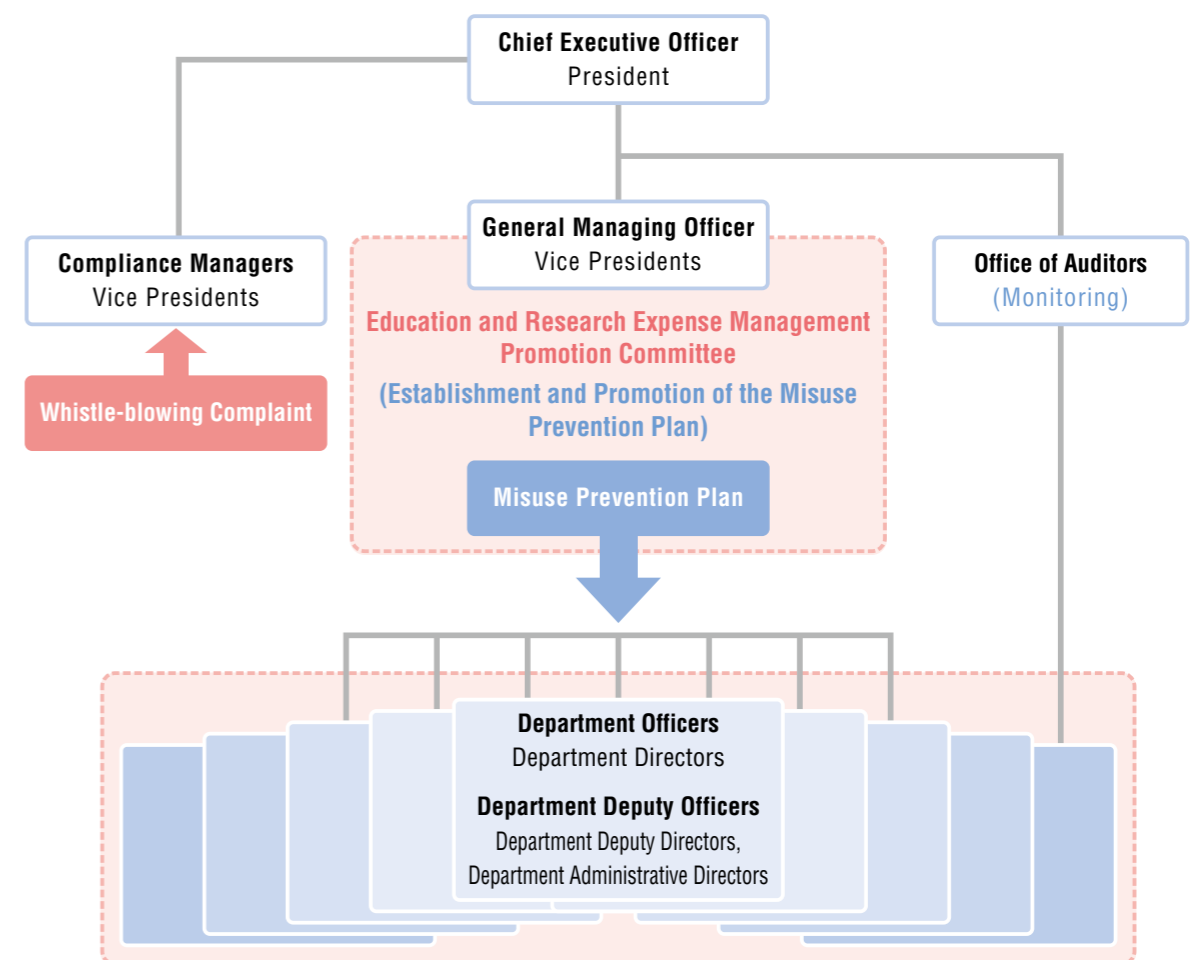
Establishment of an Environment for Appropriate Use

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 awareness of faculty and staff by providing instruction on compliance and other matters through e-learning.

Under the vice presidents, who are the compliance managers, we have also established a system for addressing risks at an early stage to promote the soundness of the organization. For example, we have set up a contact desk for accepting from both inside and outside the university whistle-blowing complaints concerning misuse, as well as investigation guidelines concerning misuse to facilitate prompt investigation of the details of the complaints.

The University's Framework for Preventing Misuse



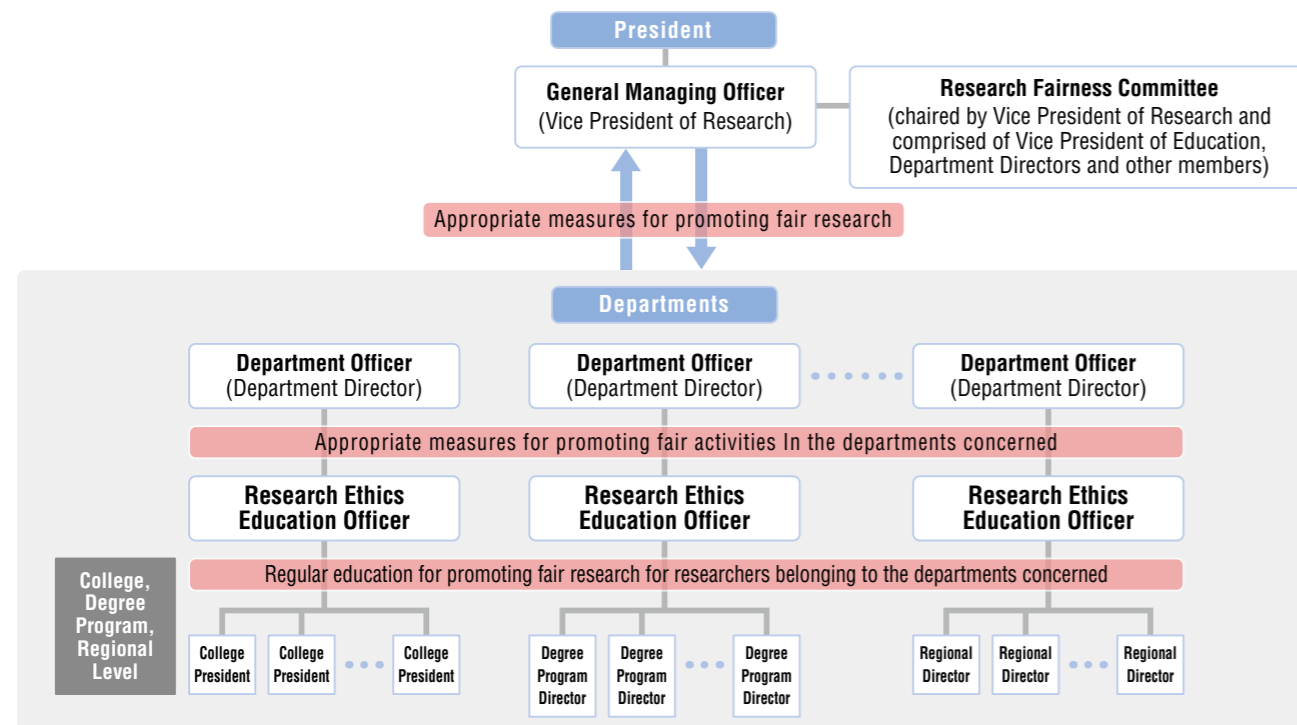
Initiatives to prevent the misuse of research funds at the university are also posted on the university website. <https://www.tsukuba.ac.jp/research/compliance-guideline/>

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.

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

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)

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.

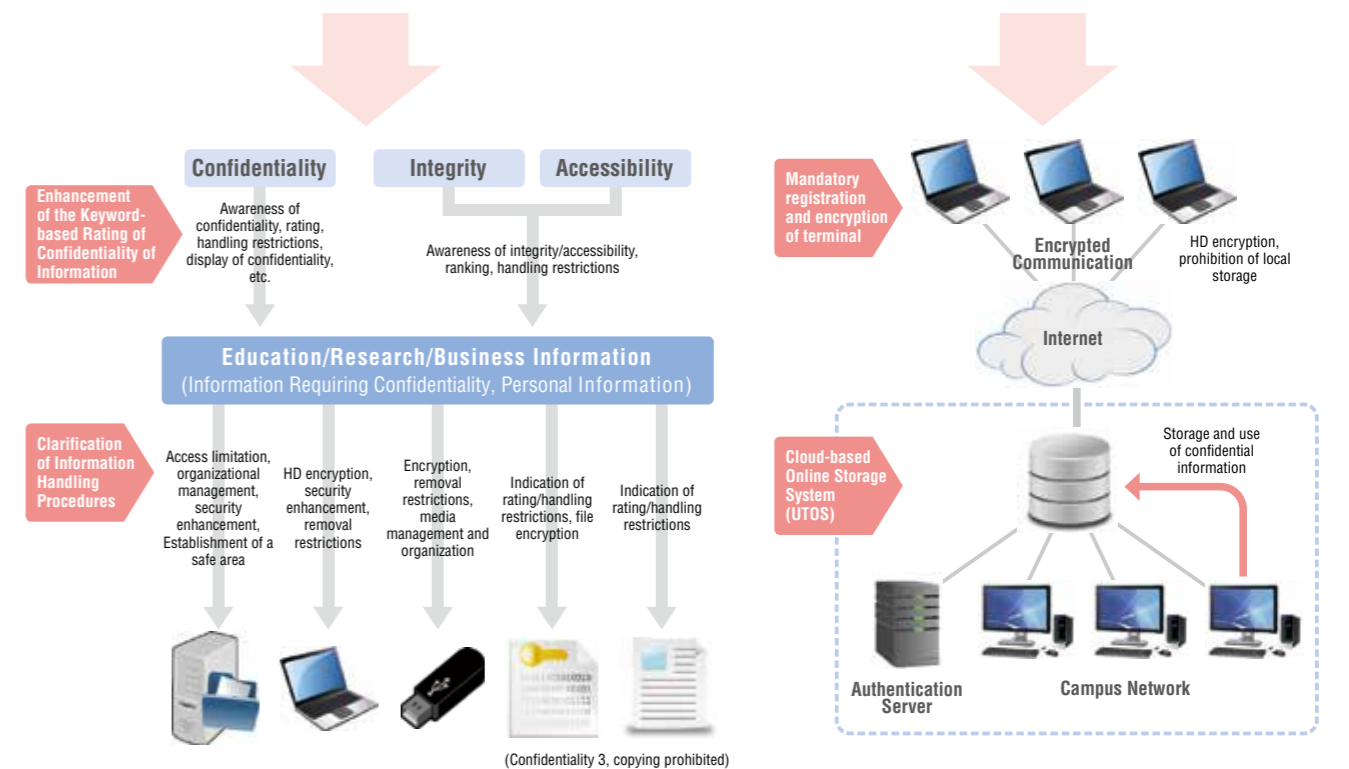
Data and Material Subject to Storage Obligations, Storage Period and Storage Method

- 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.

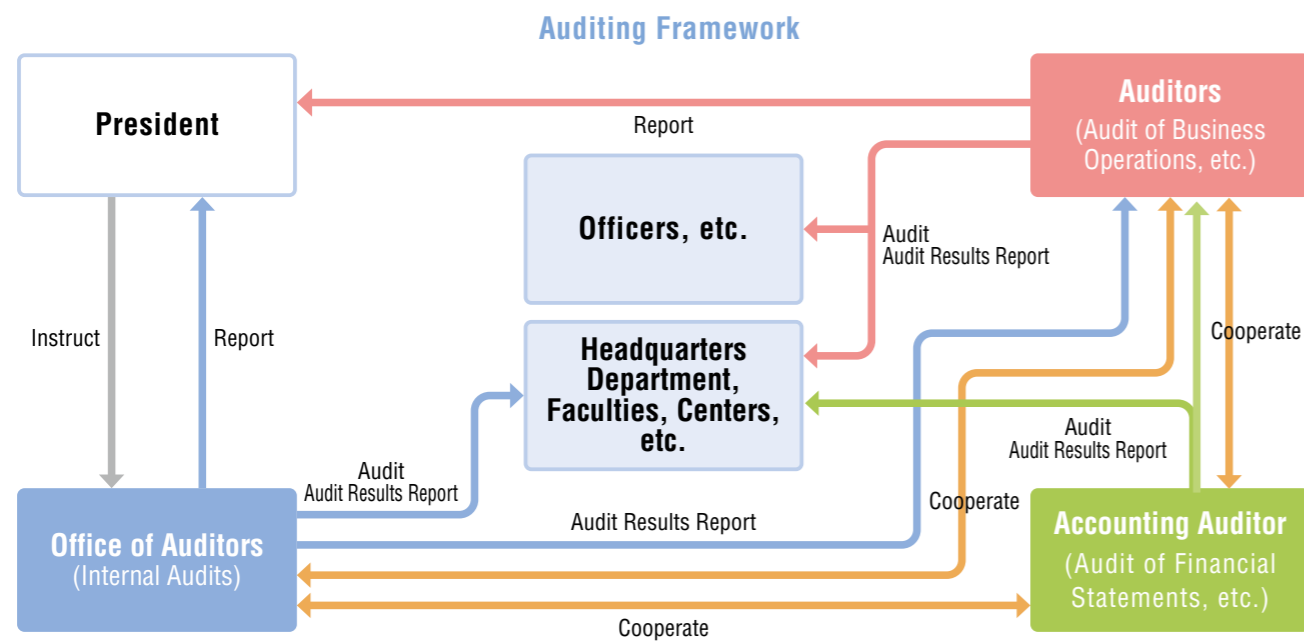
The University is making efforts to strengthen the security of its risk management and network system by making information security education mandatory and through audits. For example, since fiscal 2018, we have established an information security management system that is recognized internationally in terms of rating the confidentiality of information and establishing a dedicated system for storing confidential information.

Education	<p>Information security education through e-learning and seminars for students and faculty</p> <ul style="list-style-type: none"> ○ Students and faculty: e-learning (INFOSS Information Ethics) ○ Faculty, staff and students: information security seminars ○ System administrators: security technology seminars ○ Targeted email attack training
Risk Management	<p>Information security audits</p> <ul style="list-style-type: none"> ○ Since AY2016, 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 selected in part ○ Follow up audits for departments audited the previous academic year
Network System Security	<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"> ○ Implemented detection and prevention of security invasions in the core network systems ○ Periodically implemented vulnerability diagnosis using vulnerability check tools ○ Monitored communication from inside to outside the university
Confidentiality Management	<p>Enhanced the keyword-based rating of confidentiality of information and clarified information handling procedures according to the level of confidentiality (system aspects)</p> <ul style="list-style-type: none"> ○ Undertook the rating of information handled in work duties, formulated information handling restrictions and handling procedures based on information rating, and introduced these in AY2018
Confidential Information System	<p>Established a dedicated system for storing confidential information and operation rules requiring mandatory registration on user terminals (equipment) and encryption of terminals</p> <ul style="list-style-type: none"> ○ Developed the Cloud-based Online Storage System (UTOS) to prevent confidential information being taken off campus, and commenced operation in 2018 ○ Enforced the rules for mandatory registration and encryption of UTOS user terminals

Reinforced in AY2018 (Annual Information sessions for thorough implementation)



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

1. 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.

2. Audit Items

- (1) Audits concerning business operations
- (2) Audits of financial results, financial statements, and management of unused funds

3. Audit Reports

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

In addition, the auditors prepare an audit report concerning financial results and submit it to the Minister of Education, Culture, Sports, Science and Technology.

Audits by Office of Auditors

1. 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.

2. Audit Items

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

3. 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

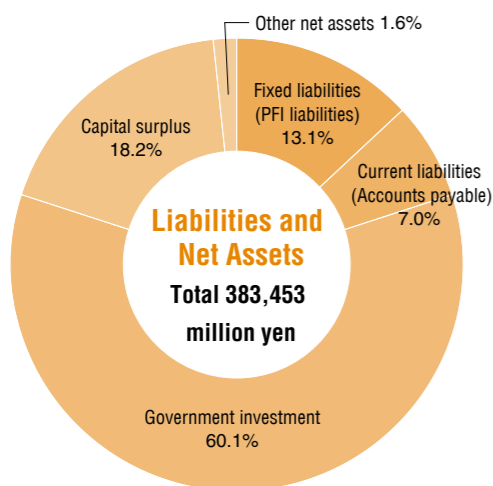
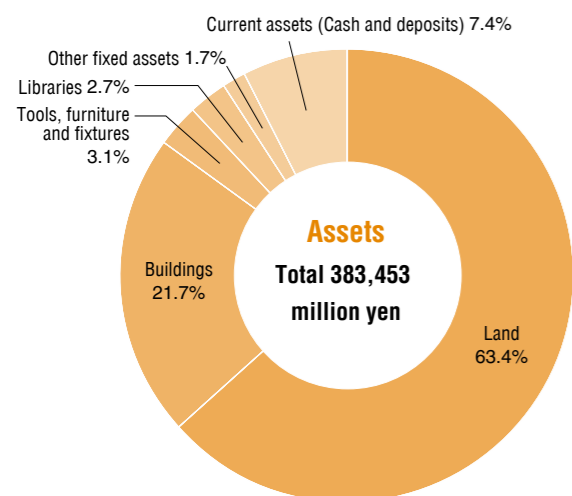
The financial statements and reports on financial results are audited by an accounting auditor appointed by the Minister of Education, Culture, Sports, Science and Technology.

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.



Balance Sheet

(In millions of yen)



Balance Sheet

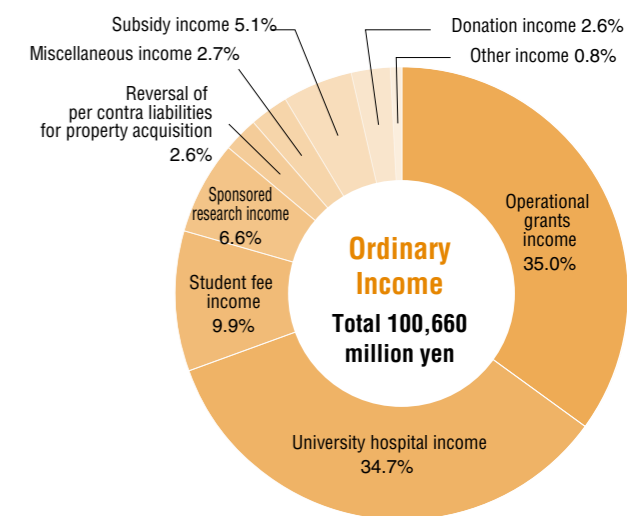
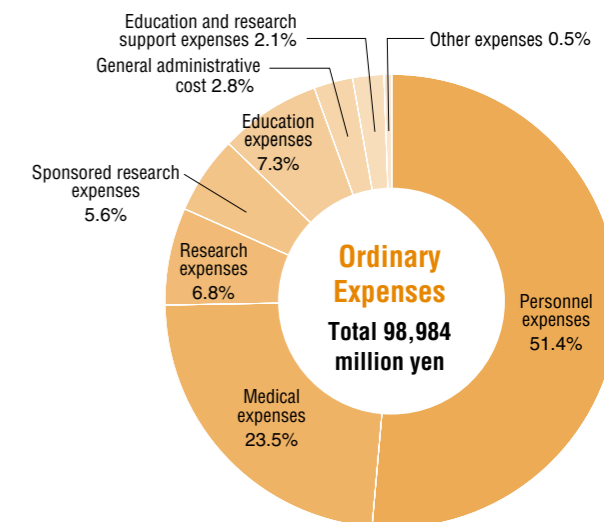
The balance sheet presents financial conditions of a corporation on the day of settlement. The liabilities and net assets indicate the sources of procurement of funds while the assets show how the procured funds have been managed.

Item	AY2019	AY2020	Change
Assets	380,146	383,453	3,307
Main Items			
Land	245,071	243,263	▲ 1,808
Buildings	82,466	83,279	813
Tools, furniture and fixtures	12,505	11,867	▲ 638
Libraries	10,325	10,377	52
Construction in progress	1,427	921	▲ 506
Investment in securities	3,305	3,600	295
Cash and deposits	15,605	19,783	4,178
Accounts receivable	7,028	7,967	939
Liabilities	76,221	77,119	898
Main Items			
Operational grants liabilities	990	1,243	253
Borrowings	3,622	3,375	▲ 246
Lease liabilities	4,891	3,637	▲ 1,254
PFI liabilities	20,766	19,474	▲ 1,292
Donation liabilities	5,222	5,681	459
Sponsored research/sponsored operations liabilities	1,779	1,988	209
Deposits received	1,658	1,873	215
Contra-accounts for assets	26,277	25,254	▲ 1,023
Accounts payable	9,206	12,345	3,139
Net Assets	303,925	306,334	2,409
Main Items			
Government investment	231,333	230,333	▲ 1,000
Capital surplus	67,885	69,666	1,781
Reserve funds carried forward from previous Mid-term Plan period	2,421	2,421	0
Reserve funds	1,711	2,183	472
Unappropriated retained earnings (or undisposed loss) at the end of the term	575	1,731	1,156

Profit and Loss Statement

(In millions of yen)

Item	AY2019	AY2020	Change
Ordinary Expenses	98,221	98,984	763
Main Items			
Education expenses	6,985	7,256	271
Research expenses	6,572	6,711	138
Education and research support expenses	2,273	2,113	▲ 160
Medical expenses	22,951	23,252	301
Sponsored research expenses	3,413	2,982	▲ 431
Joint research expenses	1,682	1,701	20
Sponsored operations expenses	1,093	847	▲ 246
Personnel expenses	49,869	50,910	1,041
General administrative costs	2,880	2,794	▲ 87
Ordinary Income	98,704	100,660	1,956
Main Items			
Operational grants income	35,038	35,259	221
Student fee income	10,131	10,006	▲ 125
University hospital income	35,085	34,895	▲ 190
Sponsored research income	4,111	3,714	▲ 397
Joint research income	1,927	1,982	55
Sponsored operations income	1,194	919	▲ 275
Subsidy income	2,106	5,102	2,996
Donation income	2,685	2,626	▲ 60
Reversal of per contra liabilities for property acquisition	2,757	2,614	▲ 143
Miscellaneous income	3,181	2,670	▲ 511
Extraordinary loss	106	120	14
Extraordinary profit	85	107	23
Reversal of reserve	114	69	▲ 44
Gross income (loss)	575	1,731	1,156



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.

Total assets are 383,453 million yen (year-on-year increase of 3,307 million yen)

The amount increased due to an increase in buildings with the construction of a new Global Guest House and renovation of the schools for special needs education.

Total liabilities were 77,119 million yen (year-on-year increase of 898 million yen)

The amount decreased due to repayment of borrowings and PFI liabilities as planned but increased overall due to an increase in operational grants liabilities as a result of it being carried forward to the next academic year.

Total net assets were 306,334 million yen (year-on-year increase of 2,409 million yen)

The amount increased due to an increase in capital surplus due mainly to the repayment of long-term loans and renovation work.

Ordinary expenses were 98,984 million yen (year-on-year increase of 763 million yen)

The amount increased due to an increase in education expenses resulting from factors such as the provision of emergency relief to domestic and international students affected and upgrading the educational environment by the COVID-19 pandemic, and an increase in personnel expenses resulting from an increase in the number of personnel retiring.

Ordinary income was 100,660 million yen (year-on-year increase of 1,956 million yen)

Broad-ranging decreases in income caused by the COVID-19 pandemic, such as student fee income, university hospital income, sponsored research income, and miscellaneous income, were offset by an increase in income primarily from subsidies related to COVID-19 pandemic measures for an overall increase.

Based on the above ordinary profit and loss, extraordinary profit and loss and other conditions, gross income was calculated to be 1,731 million yen (year-on-year increase of 1,156 million yen).

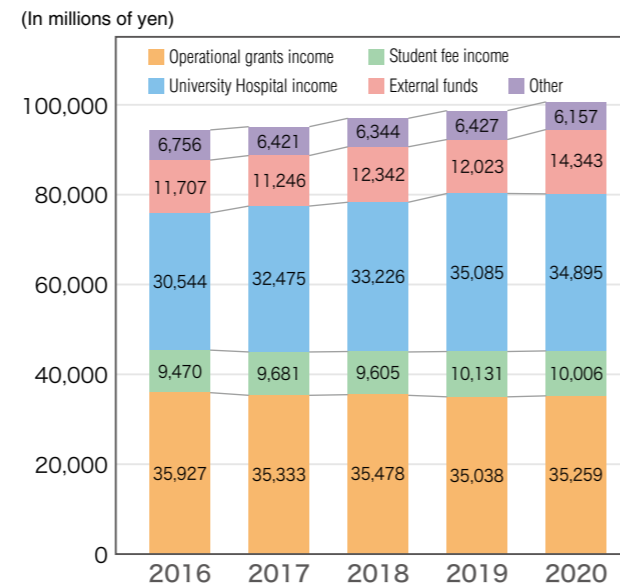
Financial Conditions

The trend in income in recent years is that the income of the University Hospital has been increasing mainly due to an increase in the number of surgical operations and ordinary income as a whole has been increasing. In AY2020, a year-on-year decrease in University Hospital income caused by the COVID-19 pandemic was offset by an increase in external funds owing to an increase

in subsidies. At the same time, although education and research expenses have remained largely the same, medical expenses of the University Hospital and personnel expenses have increased with the advancement of hospital functions (more pharmaceuticals, more medical personnel), resulting in a general increase in ordinary expenses as well.

Ordinary Income

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



Ordinary Expenses

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



* Subsidies and donation expenses are included in education expenses, research expenses and personnel expenses.

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. 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]

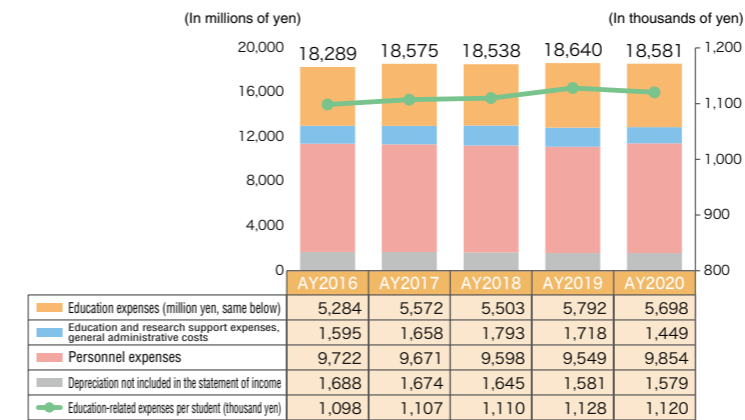
Education-related expenses in AY2020 were approximately 18.6 billion yen (excluding the University Hospital segment and affiliated school segment), working out to roughly 1.12 million yen per student.

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

university is investing more on education-related expenses than it is receiving in annual tuition fees, demonstrating its commitment to developing 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
Operational grants	14,864	15,230	15,331	15,230	15,028
External funds	1,518	1,534	1,320	1,401	1,478
Donations	356	382	401	466	733
Subsidies	1,162	1,153	919	935	745
Facility maintenance expenses	947	957	1,020	1,220	1,255
Other	960	854	867	788	819
Total	18,289	18,575	18,538	18,640	18,581

* Operational grants includes operational grants, student fee income, and non-subsidy revenue such as other miscellaneous revenue.

Costs Related to Research [Research-related Expenses]

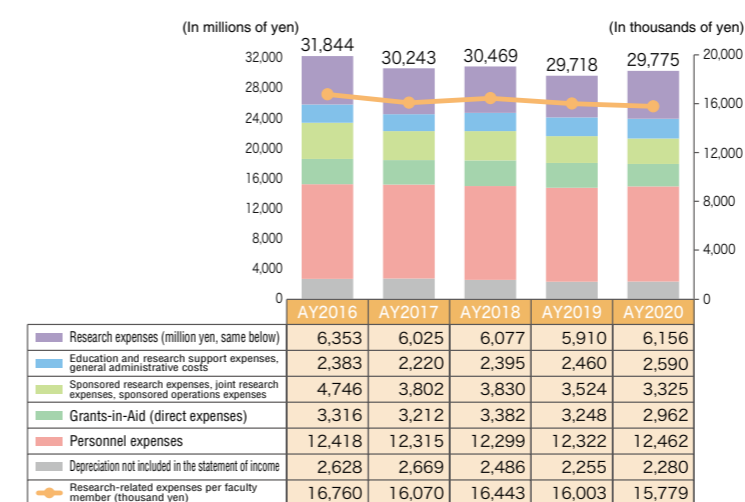
Research-related expenses in AY2020 were approximately 29.8 billion yen (excluding the University Hospital segment and affiliated school segment), working out to roughly 15.78 million yen per faculty member.

To further invigorate research activities of the university, we are implementing a strategy for acquiring external funds through

management strengthening measures (see page 42) and seek to acquire large-scale research funds for subsidies, joint research with private companies and sponsored research, among others.

These expenses are 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
Operational grants	14,937	14,903	14,703	14,828	15,450
External funds	13,838	12,586	13,160	12,538	11,745
Donations	827	854	983	965	799
Sponsored research expenses, etc.	6,061	5,099	5,184	4,923	4,518
Subsidies	1,533	1,494	1,371	995	1,142
Grants-in-Aid for Scientific Research	3,694	3,587	3,773	3,678	3,404
Indirect expenses	1,723	1,552	1,850	1,976	1,882
Facility maintenance expenses	1,699	1,458	1,346	1,327	1,574
Other	1,370	1,297	1,261	1,025	1,006
Total	31,844	30,243	30,469	29,718	29,775

* Operational grants includes operational grants, student fee income, and non-subsidy revenue such as other miscellaneous revenue.

Personnel Expenses and Sources of Revenue

Personnel expenses comprise compensation or salary, statutory welfare payments, and retirement benefits for faculty and staff.

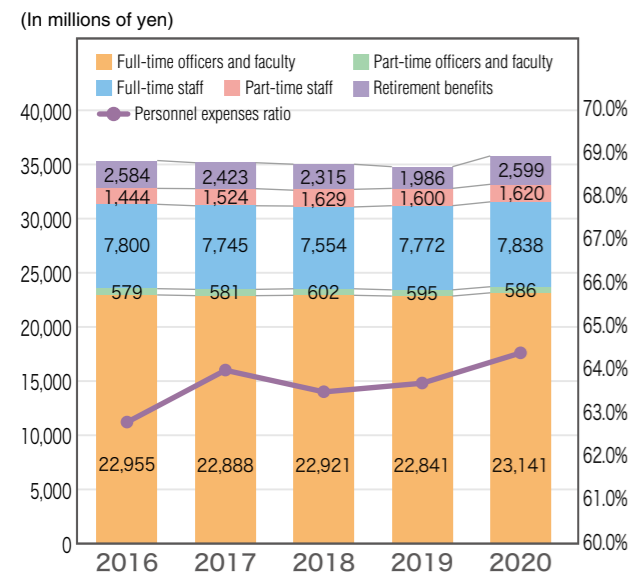
Total personnel expenses for AY2020 amounted to approximately 50.9 billion yen (university segment: 35.8 billion yen, hospital segment: 15.1 billion yen), a year-on-year increase of approximately 1 billion yen.

In the university segment, personnel expenses for retirement benefits increased due to an increase in the number of people retiring. By resources, personnel expenses for faculty and staff hired with external funds increased with an increase in the amount of project-related work for meeting social needs.

Personnel expenses in the hospital segment remained roughly the same, despite the difficulties of the COVID-19 pandemic, thanks to the building of an appropriate medical care system to protect medical treatment in Ibaraki prefecture.

With the COVID-19 pandemic, the business environment surrounding the university is expected to become more challenging than ever, it is essential that we continue to steadily implement activities to raise the quality of education, research, and medical care through the effective use of personnel budget based on the personnel strategy.

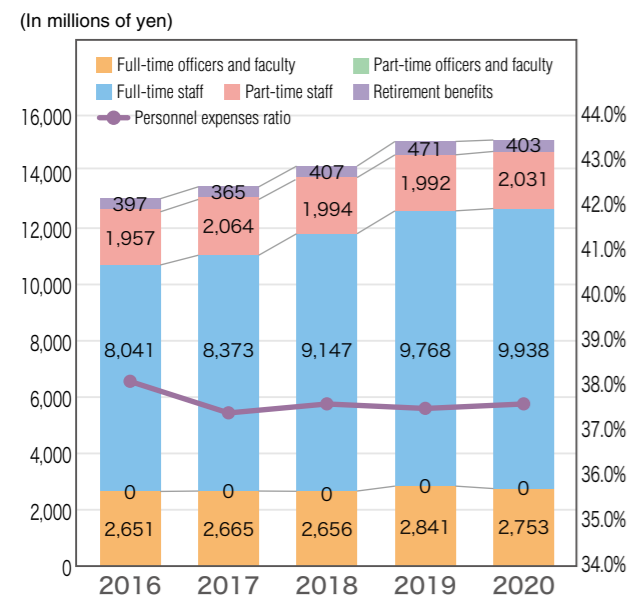
Changes in Personnel Expenses (University Segment)



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

* Operational grants
Includes operational grants, student fee income, and non-subsidy revenue such as other miscellaneous revenue.
* Personnel expenses ratio = Personnel expenses / Operating expenses

Changes in Personnel Expenses (Hospital Segment)



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

* Operational grants
Includes operational grants, student fee income, and non-subsidy revenue such as other miscellaneous revenue.
* Personnel expenses ratio = Personnel expenses / Operating expenses

Comparison with Priority Support 3 Universities

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

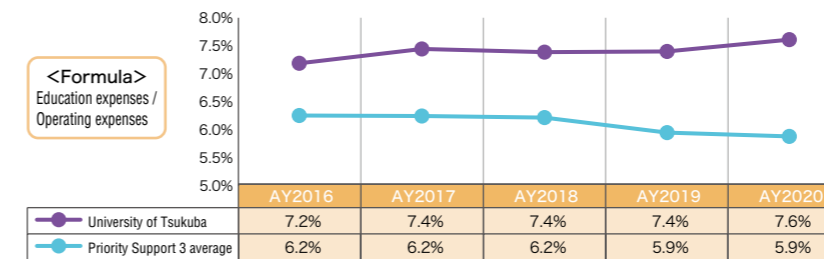
The University of Tsukuba uses financial data disclosed by universities in the same class* within the framework for operational grant allocation created by the Ministry of Education, Culture,

Sports, Science and Technology to compare and analyze financial indicators and determine our university's trend, strengths, weaknesses, and position. This data is then used to formulate measures to boost our management capabilities and we are working to realize them.

* Priority Support 3 Universities: National universities that rank with universities in other countries producing outstanding results and whose university-wide core business is globally outstanding education, research, and activities to implement results in society (Hokkaido, Tohoku, Tokyo, Tokai National Higher Education and Research System, Kyoto, Osaka, Kyushu, Chiba, Tokyo University of Agriculture and Technology, Tokyo Institute of Technology, Hitotsubashi, Kanazawa, Kobe, Okayama, Hiroshima, and Tsukuba)

Development and Activity

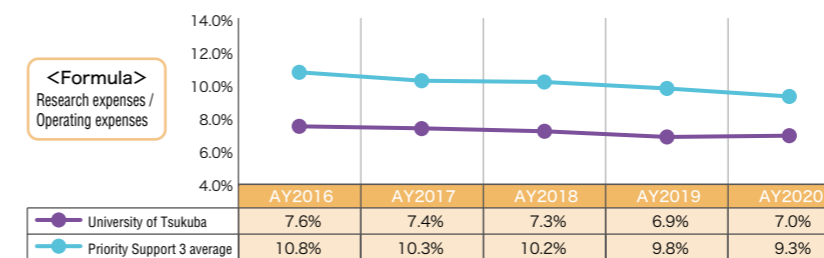
Ratio of education expenses to operating expenses Higher values mean more expenses used in educational activities.



University of Tsukuba trends

This ratio is high because of the university's large student residence and affiliated (11) schools. The ratio has remained largely the same but increased in AY2020 due to efforts such as financial support for students to combat the effects of the COVID-19 pandemic.

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

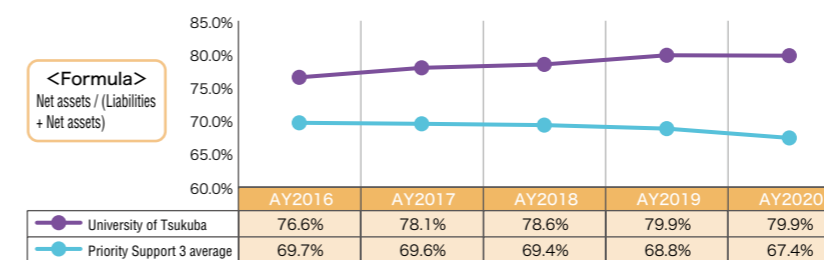


University of Tsukuba trends

As the ratio is below the Priority Support 3 Universities average, the university is working on a strategy for obtaining more subsidies and large-scale external funds (see page 42). The ratio increased in AY2020 due to seismic retrofitting of research facilities and financial aid for graduate students (Research Assistant expenses) as a COVID-19 measure.

Financial Health and Stability

Equity ratio Higher values mean greater financial health.

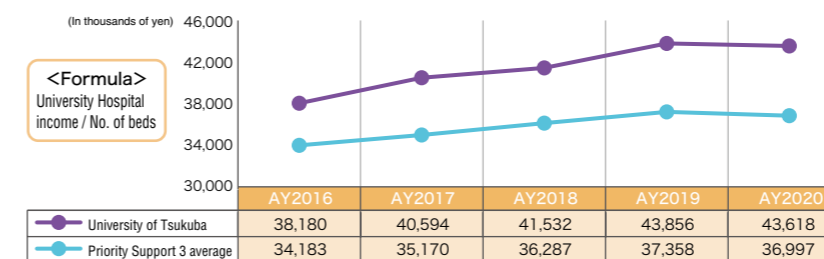


University of Tsukuba trends

This ratio increased due to an increase in net assets through acquisition of fixed assets (e.g., building renovation) and regular repayments of PFI liabilities for a University Hospital Redevelopment Project.

Profitability

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



University of Tsukuba trends

This ratio was increasing due to the increase in the number of outpatients and surgeries combined with efficient management of hospital beds. It dipped in AY2020 owing to partial restriction of medical care activities due to the COVID-19 pandemic.

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

corporate accounting. The following provides financial information of the university and characteristics of its accounting treatment.

Balancing of Profit and Loss

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

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

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

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

This accounting treatment should represent a national university corporation's operational status where it is surely carrying out its business entrusted by the government, rather than its business performance. In order to represent it properly, **the accounting standards that are designed to balance profit and loss under normal operations are applied.**



Appropriated Surplus

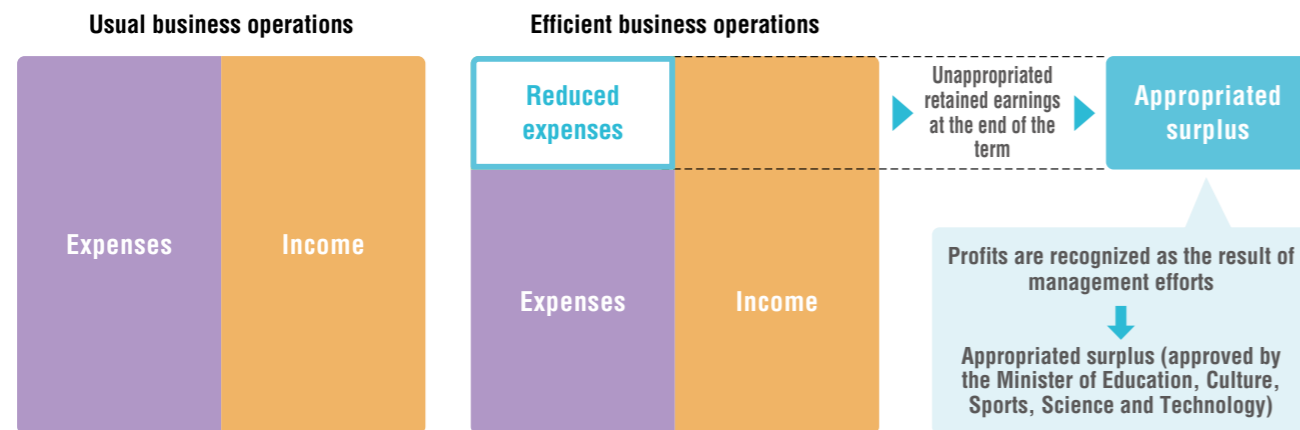
Because education and research operations of national university corporations are carried out while being related to each other in a complicated manner, it is difficult to identify the level of achievement of each operation. Therefore, in principle, income from operational grants is recognized on a periodic basis which recognizes that operations are achieved with the passage of a certain amount of time, rather than on an achievement basis which recognizes income based on the level of operational achievement.

On a periodic basis, when operations are carried out as usual, expenses and income are equal as mentioned above, and profits and losses are balanced (the figure on the left below). On the other hand, **if operations are conducted efficiently to reduce expenses, unused expenses, or profits are generated.**

These profits (unappropriated retained earnings at the end of the term) are the result of efficient operations and reduced expenses. Only **when the profits are recognized as the result of management efforts by a national university corporation** are they approved as **"appropriated surplus"** that can be used for education and research from the next academic year onward **by the Minister of Education, Culture, Sports, Science and Technology** (the figure on the right below).

The approved appropriated surplus will be used to enhance education and research within the scope of use specified in the medium-term plan of the national university corporation from the next academic year onward.

Periodic basis



Depreciation

As with corporate accounting, when a national university corporation purchases a depreciable asset, the full 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, **different accounting treatments for different sources of funds, which are unique to national university corporations, are carried out to**

balance profit and loss.

When the university purchases depreciable assets using operational grants as financial resources, **"operational grants liabilities" (liability account) are once transferred to another liability account "operational grants - per contra."** 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.**

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

< At the time of purchase of assets (machinery worth 300 million yen, financial resource: management expense grants) >

Assets		Liabilities	
Cash: 300 million yen	Machinery: 300 million yen	Operational grants liabilities: 300 million yen	Operational grants - per contra: 300 million yen

< 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

Since the government as the investor should bear the ultimate responsibility for projects carried out by a national university corporation, 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 it is identified that the government should provide their renewal costs, depreciation expenses for such assets are not included within 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.**

< Financial resource: Depreciation of a building built with facility maintenance expenses [Balance sheet for academic year n] >

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



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

Segment Information

The University of Tsukuba has been disclosing segment-specific information 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 the past into smaller segments according to the different faculties and related education and research organizations (undergraduate schools, colleges, graduate schools

and graduate programs, Master's and Doctoral Programs) and separately disclose the information.

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 63 and later pages.

We still look forward to receiving different views and opinions from you about segment information disclosure, so that we can continue to improve our communication of information to stakeholders.

(In thousands of yen)

Classification	University Segment										University Segment		Joint use/joint research centers				Affiliated Schools	University of Tsukuba Hospital	Subtotal	Common to University Corporations	Total
	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	School of Integrative and Global Majors	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					
Operating expenses	2,825,760	904,162	4,514,126	4,459,443	4,723,703	1,740,769	2,222,963	892,793	6,480,515	1,168,162	641,379	17,094,050	556,661	1,739,618	394,436	432,298	7,449,158	40,744,487	98,984,482	-	98,984,482
Operating cost																					
Education expenses	647,969	65,801	378,437	520,874	397,201	199,057	171,009	145,463	443,129	134,582	444,896	2,149,239	473	23	-	-	1,235,343	322,610	7,256,105	-	7,256,105
Research expenses	133,649	46,551	750,268	430,872	615,890	308,941	282,979	86,216	948,542	68,419	360	1,153,036	222,077	971,212	47,754	89,200	5,328	549,278	6,710,570	-	6,710,570
Medical expenses	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23,252,352	23,252,352	-	23,252,352
Education and research support expenses	-	-	646	-	80,176	-	769	98	19,465	-	-	1,968,137	327	-	43,295	-	-	-	2,112,913	-	2,112,913
Sponsored research expenses	1,709	10,870	426,020	375,470	529,915	14,082	154,710	6,770	367,692	100,274	-	323,491	51,656	141,764	-	13,538	-	464,490	2,982,453	-	2,982,453
Joint research expenses	1,667	4,393	173,934	170,237	221,760	9,827	41,033	10,549	108,030	45,340	-	531,199	65,886	33,773	2,343	3,991	-	277,531	1,701,491	-	1,701,491
Sponsored operations expenses	5,407	-	9,124	9,969	33,633	12,583	222,997	12,781	116,425	3,519	480	147,163	-	-	-	-	48,848	224,270	847,199	-	847,199
Personnel expenses	2,025,687	760,223	2,654,017	2,928,830	2,828,594	1,126,611	1,331,888	628,673	4,462,950	798,880	195,262	8,475,750	216,208	586,555	301,044	325,183	6,137,346	15,125,822	50,909,522	-	50,909,522
General administrative cost	9,669	16,218	117,413	21,415	15,507	69,652	17,556	2,070	12,347	16,808	381	2,232,388	-	-	-	-	21,964	240,182	2,793,572	-	2,793,572
Financial cost	-	-	-	1,574	-	-	-	-	71	241	-	54,834	-	5,902	-	377	194	263,747	327,280	-	327,280
Miscellaneous loss	4	106	4,267	203	1,027	16	21	101	1,694	2	-	58,814	35	390	-	8	135	24,206	91,028	-	91,028
Operating revenues	3,632,672	1,016,999	5,126,125	5,480,754	5,299,080	2,041,171	2,732,804	1,112,983	6,945,843	1,511,866	701,187	12,195,557	474,460	1,817,471	394,836	435,943	7,455,144	42,253,558	100,628,455	31,194	100,659,648
Operational grants income	1,842,697	715,424	2,589,822	2,716,896	2,516,394	1,083,716	1,177,117	545,258	3,777,530	766,475	151,553	6,406,198	217,416	1,366,681	353,707	403,134	6,557,442	2,071,648	35,259,111	-	35,259,111
Student fee income	1,335,946	257,202	1,183,088	1,751,210	1,303,840	675,676	932,165	415,082	1,190,234	491,181	65,107	145,370	-	-	-	-	260,207	-	10,006,309	-	10,006,309
University hospital income	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	34,894,697	34,894,697	-	34,894,697
Sponsored research income	2,084	14,278	544,811	468,496	642,988	16,415	170,714	8,302	457,184	129,061	-	407,853	63,880	183,619	-	17,033	928	586,630	3,714,276	-	3,714,276
Joint research income	2,000	5,107	205,206	195,446	261,173	11,279	47,148	11,891	122,024	55,801	-	615,054	77,003	38,298	2,804	4,071	-	328,153	1,982,457	-	1,982,457
Sponsored operations income	5,471	-	9,746	11,109	36,307	13,647	244,203	13,983	117,744	3,591	480	162,414	-	-	-	-	48,848	251,110	918,652	-	918,652
Facility expense grants income	281,386	-	80,121	10,464	238	167,085	-	-	-	-	-	93,863	-	-	-	-	200,616	7,450	841,224	-	841,224
Subsidy income	16,550	4,003	35,412	58,916	75,466	8,327	13,673	8,220	87,208	17,794	265,314	1,539,731	4,711	26,338	-	4,434	151,102	2,784,420	5,101,621	-	5,101,621
Donation income	76,312	2,189	74,803	51,589	118,698	5,013	42,724	67,757	647,031	6,247	-	470,098	21,885	174	-	113	108,048	933,037	2,625,717	-	2,625,717
Reversal of asset return liability	19,806	8,839	251,261	103,962	208,487	22,559	63,617	26,778	270,499	23,305	218,718	883,538	65,323	106,184	38,251	6,722	102,853	193,555	2,614,256	-	2,614,256
Financial income	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	31,194	31,194
Miscellaneous income	50,421	9,956	151,853	112,667	135,489	37,452	41,444	15,712	276,390	18,409	15	1,471,439	24,241	96,177	75	437	25,100	202,856	2,670,134	-	2,670,134
Operating income (loss)	806,912	112,837	611,999	1,021,311	575,377	300,402	509,842	220,191	465,328	343,703	59,809	△ 4,898,493	△ 82,201	77,853	401	3,646	5,987	1,509,071	1,643,972	31,194	1,675,166

Classification	University Segment										University Segment		Joint use/joint research centers				Affiliated Schools	University of Tsukuba Hospital	Subtotal	Common to University Corporations	Total
	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	School of Integrative and Global Majors	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					
Land	-	-	-	-	2,153,611	-	-	-	-	-	-	162,353,672	-	203,631	268,253	2,186,745	68,916,380	7,180,341	-	-	243,262,633
Buildings	2,836,719	1,348,611	5,479,366	2,786,385	4,808,372	1,933,430	2,791,250	1,346,309	6,778,794	775,078	841	23,140,193	661,174	462,652	382,014	70,344	5,645,077	17,244,749	-	-	78,491,358
Structures	86,858	51,638	95,306	17,577	131,116	56,151	38,435	21,734	111,433	1,744	-	2,934,220	6,171	2,241	60,903	2,220	412,273	757,900	-	-	4,787,919
Other fixed assets	27,133	25,219	1,028,213	313,051	775,116	463,069	201,558	644,363	800,622	94,435	709,671	12,890,658	207,661	1,001,565	64,860	29,300	177,425	5,654,852	-	-	3,299,987
Current assets	13,497	3,814	27,114	135,144	24,855	8,202	13,947	8,671	64,362	3,488	2,483	465,818	24	61,303	-	47	146,801	7,428,033	-	-	20,094,950
Total	2,964,206	1,429,282	6,630,000	3,252,158	7,893,070	2,460,852	3,045,189	2,021,078	7,755,211	874,744	712,994	201,784,562	875,031	1,731,393	776,028	2,288,655	75,297,955	38,265,874	-	-	23,394,937

Classification	University Segment										University Segment		Joint use/joint research centers				Affiliated Schools	University of Tsukuba Hospital	Subtotal	Common to University Corporations	Total
	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	School of Integrative and Global Majors	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					
Reduction of appropriated surplus	-	1,016	-	-	4,812	-	-	219	3,659	798	-	51,880	-	-	-	-	-	7,034	-	-	69,417
Reduction of reserve funds carried forward from the previous Mid-term Plan Period	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Depreciation	19,806	17,433	406,855	279,317	337,772	23,424	76,083	29,994	400,444	52,326	218,718	1,768,349	85,910	569,939	38,289	9,199	108,303	2,856,364	-	-	7,298,525
Depreciation not included in the statement of income	188,925	81,329	435,674	233,006	408,859	135,066	222,134	116,580	579,446	42,474	-	1,543,941	24,787	12,473	16,068	10,454	218,083	119,158	-	-	4,388,457
Impairment losses not included in the statement of income	-	-	-	-	-	-	-	-	-	-	-	1,200,197	-	-	-	-	-	-	-	-	1,200,197
Interest expenses not included in the statement of income	△ 4,098	-	42	105	229	57	-	8	-	4	-	1,046	-	-	-	-	-	-	-	-	△ 2,605
Sale or disposal gains not included in the statement of income	△ 753	-	2,406	1,138	0	-	-	-	1,728	-	-	△ 196,496	0	-	△ 90	-	1,268	-	-	-	△ 190,799
Estimated bonus increases not included in reserves	2,532	477	16,343	15,091	3,305	8,798	4,269	144	26,795	△ 368	-	22,094	3,210	2,808	4,010	2,320	33,402	△ 1,137	-	-	144,091
Estimated retirement benefit increases not included in reserves	40,264	△ 25,720	△ 102,781	△ 61,915	△ 157,801	△ 838	14,823	13,994	△ 93,980	△ 19,958	-	△ 315,224	△ 12,523	△ 19,501	50,223	△ 20,295	△ 94,497	9,513	-	-	△ 796,216

* A list of all departments that are classified into the respective segments for disclosure is available on Page 62.
 * In the common to university corporations section, an interest income of 11,942,000 yen, interest on securities of 14,750,000 yen, exchange gain of 4,121,000 yen, gain on sale of marketable securities of 381,000 yen are recorded from the operating revenues, and investments in securities worth 3,299,987,000 yen, cash and deposits worth 19,783,178,000 yen, marketable securities worth 300,145,000 yen and accrued income worth 11,627,000 yen from the imputed assets.

Segment Classification

		University Segment										
Segments for disclosure	Classified Departments, Etc.	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	
		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	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
Classified Departments, Etc.	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 School of Comprehensive Human Sciences (Degree Programs in Comprehensive Human Sciences (Education P, Psychology P, Disability Sciences P, Counseling 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 (Degree Programs in 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 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	Graduate School of Comprehensive Human 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, School Education, Psychology (Master's), Psychology (Doctoral), Disability Sciences, Lifespan Development and Lifespan Developmental Sciences)	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
Classified Departments, Etc.	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 and College of Policy and Planning Sciences)	School of Informatics (College of Information Science)	School of Life and Environmental Sciences	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)

		University Segment				Joint use/joint research centers			
Segments for disclosure	Classified Departments, Etc.	School of Comprehensive Studies	School of Integrative and Global Majors	University of Tsukuba Library, Centers, Etc.	Faculty of Transdisciplinary Research	Tsukuba-Plant Innovation Research Center	Center for Research in Isotopes and Environmental Dynamics	Affiliated Schools	University of Tsukuba Hospital
					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, Humanities P, Global Issues P		Life Science Center for Survival Dynamics	Center for Computational Sciences	

* 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

● **Enhancing global communication of research findings** **Companies**
The faculty boosted its capacity to communicate its research findings globally, greatly increasing its output of books and articles including peer-reviewed original articles in Japanese, English, and other languages. It also increased the number of keynote lectures given at international conferences by 134% from the previous year and greatly increased its overall number of citations for articles and Top 10% articles.

● **Promoting research using large-scale external funds** **Companies Community**
The Politics and Inequality Research Unit involved in the realization of a sustainable society—a key strategic field—carried out activities to create research bases using two scientific research basis for Grants-in-Aid(A) and conducted intensive surveys including a nationwide survey on gender equality in rural municipalities and a survey on political behavior and political awareness. It also published a book called "Comparative Urban Governance and Civil Society in Contemporary Japan" (coedited



by Hidehiro Yamamoto, published by Bokutakusha) in February 2021.

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

● **Social contribution through open courses** **Students Alumni Community**
The graduate schools are giving a lot back to society from their education and research achievements, for example by continuing to hold the Philosophy Café and ReKijin Atelier open courses and adding a new online course called "Literature Course on Masterpieces to Revisit Graphic Novels from around the World."

● **Increasing the ratio of international students** **Companies Students Alumni Community**
The graduate schools offer truly international education, with students coming from Asia, Africa, South America, Europe, and other regions; 63 of its 111 master's students (56.8%) and 13 of its 27 doctoral students (48.1%) are international students.

● **Central Asia-Japan Human Resource Development Project** **Companies Students**
The Central Asia-Japan Human Resource Development Project created by the Nippon Foundation aims to foster human resources who can contribute to the achievement of the SDGs in the Central Asian

region and to the resolution of social issues in the region, for example by holding various online lecture series. In March 2021, five students were sent to begin fellowships for the first year.

School of Humanities and Culture

● **Increase in graduate school advancement rate, academic exchange** **Students Community**
The College of Humanities increased its graduate school advancement to about 20%. The College of Japanese Language and Culture held its 3rd symposium, "Regional Society and Multiculturalism," online on February 6, 2021. Under the theme, "Minority representation and education in multicultural times," as many as 120 faculty members, students, and people from the community participated in academic exchange that crossed disciplinary boundaries.

● **Launch of Tsukuba Global Plus (TG+)** **Students Alumni**
The school launched a completion certification program on a university-wide scale called "Tsukuba Global Plus" as a successor to the Area Studies Innovation Program (ASIP). The College of Comparative Culture started an educational collaboration with Gadjah Mada University in Indonesia and opened the International Seminar in Comparative Culture I course (1 credit) held in English using an online platform. It is also developing an International Seminar in Comparative Culture course (online) and International Practicum in Comparative Culture course (dispatch and online), striving to raise its international profile.

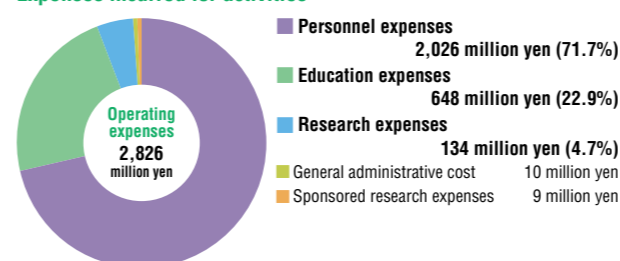


School of Social and International Studies

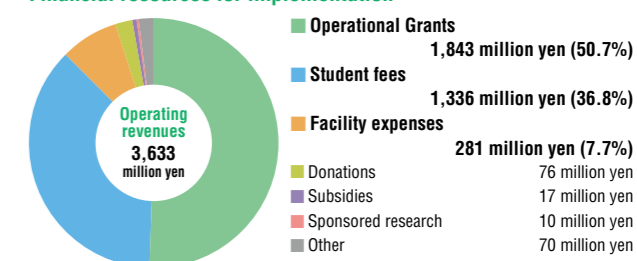
● **Increase in applicant rate and acceptance of a diversity of students** **Students Alumni**
The application-to-enrollment ratio for the College of Social Sciences is far higher than that of other colleges, and the Undergraduate Program of International Social Studies course that is held in English accepts diverse students from countries around the world, resulting in a high enrollment of academically outstanding individuals.

● **Increase in the number of courses in English** **Companies Students Alumni**
The College of International Studies actively focuses on offering courses in English. It added Social Development as a new specialist course for the college, bringing the total number of basic specialist and specialist courses held in English to 33. This accounts for roughly 40% of the college's courses; the basis for its high-quality education to develop internationally minded individuals.

Expenses incurred for activities



Financial resources for implementation



Faculty of Business Sciences/Related Departments

Faculty of Business Sciences

● Diversification of financial resources by fund acquisition

Companies Students Alumni

After receiving no sponsored research requests from AY2017 to 2019, the faculty received three in AY2020. It also greatly increased its sponsored and joint research income from the previous most recent high of 12.776 million yen in AY2017 to 19.385 million yen in AY2020. The amount of external funds per faculty member has been increasing since AY2017 (1.337 million yen), reaching 1.832 million yen in AY2020.

To forge new industry-academia collaborations and acquire private financing, the faculty is pursuing research on advanced topics such as the practical application of accounting fraud detection AI models led by a team of young researchers in the fields of business administration and law. In addition, the faculty is collaborating with business professionals attending the University of Tsukuba program for working individuals and, with support from the department URAs, they applied for a 2020 special subject research grant called "Co-creating New Society with Advanced Technologies" from the Toyota Foundation. The application was met with very high approval and expectation, and its acceptance led to the acquisition of new private funds.

● Promotion of interdisciplinary and inclusive research

Companies Students Alumni

As part of the activities to form a pre-strategic initiative center, the faculty held an online international workshop on Sustainable Management and Data Science with the National University of Singapore (NUS). Its strategic direct approach and promotional activities brought in over 150 participants from top business schools inside and outside Japan. Spirited discussions with world-class faculty members from NUS helped raise the global profile of the faculty's research activities.



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

● High applicant rate with improved educational programs

Companies Students Alumni Community

This is the only graduate school that confers all three of the new classifications of degrees (research degrees, specialist degrees, and professional degrees) established under university-wide educational reform to realize human resource development that meets the diverse needs of society and corporations. As such, it offers distinctive educational programs tailored to those degree classifications. Despite the COVID-19 pandemic, the application-to-enrollment ratio in AY2020 was 2.4 for master's programs (research degree, specialist degree), 2.2 for doctoral programs (research degree) in the degree programs in Business Sciences, 3.4 for the Law School Program (professional degree), and 2.6 for the MBA Program in International Business (professional degree).

● Conferral of doctoral degrees in the Early Completion Program

Companies Students Alumni

Although no one has yet graduated from the standard course after reorganization of the graduate school, the Early Completion Program in the doctoral program (business administration; 15 new students) was improved to meet the needs of students who are already working and the needs of society, with two students completing their doctoral program (business administration) in one year in AY2020.

● Improved bar exam pass rate and academic paper productivity

Companies Students Alumni

Development of an integrated educational program for the whole period from before enrollment to after completion of the Law School Program has led to a higher number of students passing the bar exam (15 students) and higher pass rate (26.8%) for two years running (18th in number of students who passed and 16th in pass rate in Japan). With improvement of support for students' research, academic paper productivity was 17.8%, which, similar to the previous year, is 1.7 times higher than the AY2018 productivity level.

● Student winning awards and holding of courses overseas

Companies Students Alumni

Eight awards were received by students in the Master's Program in Systems Management from academic societies including the Japan Academic Society for Ventures and Entrepreneurs, the Japan Society for Management Information, the Japan Marketing Academy, and the Japan Academic Society of Tourism, demonstrating the achievements of education in mathematics, data science, and AI. With restrictions on overseas travel for students due to the COVID-19 pandemic, the MBA Program in International Business offered online seminars in English by outside lecturers and joint courses for students at the University of Tsukuba and partner business schools in other countries.

● Data Science for Business Administration extension program for students who are already working

Companies Alumni Community

Within the Master's Program in Systems Management, a Data Science for Business Administration extension program was created for students already working. Over 80 students enrolled in the program.

Faculty of Pure and Applied Sciences/Related Departments

Faculty of Pure and Applied Sciences

● Implementation 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 568 peer-reviewed academic papers. Although this is only 87% of the previous year (568/654) due to the enormous impact of the COVID-19 pandemic, it received a 1.41 for its mean Web Citation Index (WCI), an indicator from Scopus (abstract and citation database created by specialists) that measures the relative quality of all papers on a global level. This is largely the same level as the previous year (1.43) and far higher than the global average (1.00).

● Winner of numerous academic awards

Companies Students

The high level of research activities and achievements is demonstrated by the receipt of several awards, including the Commendation for Science and Technology by the Minister of Education, Culture, Sports, Science and Technology (Prof. Makoto Aoshima) that is a major award in various research fields, a Magnetism Society of Japan Society Award (Senior Prof. Norio Ota), and a Chemical Society of Japan Award for Young Chemists (Assistant Prof. Takashi Nakamura). The faculty also made 32 press releases, showing that it actively publicizes its research achievements. This number nearly doubled from the previous year (32/17; an increase of 188%).



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 21 students and 50 people from 26 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, and the Research and Education Consortium that manages the system held its first general meeting.

● Promoting internationalization of graduate school

Companies Students

Despite the COVID-19 pandemic, the Double Degree Program with Université Grenoble Alpes (UGA) is continuing. One student sent from Tsukuba and six students received from UGA completed the master's program. In addition, a project for the two universities to open an International Research Laboratory (IRL) for the French National Centre for Scientific Research (CNRS) was selected, building the framework for further activity.

● Strengthening connections with corporations and society

Companies Students Community

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, and the value of the courses has made a strong impression on and off campus, winning them notable awards.

School of Science and Engineering

● Education that enables research motivated by joy and a high graduate school advancement rate

Students

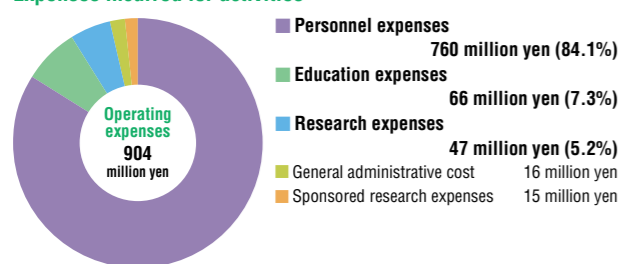
The school has in place an educational system that enables research motivated by joy, including programs that allow students to experience work as researchers, support for studying abroad, various internship programs, and teaching in small-group seminars. In addition, the school offers a consultation service called "Tsumazuki Soudan Terakoya" that was offered remotely during the COVID-19 pandemic for students having difficulty figuring out how to learn the material, so that students would be able to turn to the instructors themselves for help. As a result of these initiatives, its graduate school advancement rate has increased to as high as 80%.

● Learning support that brings students and faculty closer

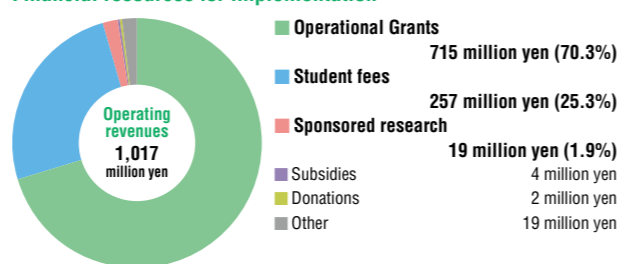
Students

The school has built a system for close communication between students and faculty, for example by utilizing the class supervisor system and holding remote class liaison meetings during the COVID-19 pandemic. There are also the Tsumazuki Soudan Terakoya and Sugaku Tenarai Juku services during the spring and autumn semesters provided for students having difficulty with the transition from high school. In addition, each college offers its own career support services. For example, the College of Physics introduced a personal tutor system for students to receive support from graduate students before the summer semester break and the College of Chemistry holds career support meetings for students to hear about alumni experiences and think about their career path.

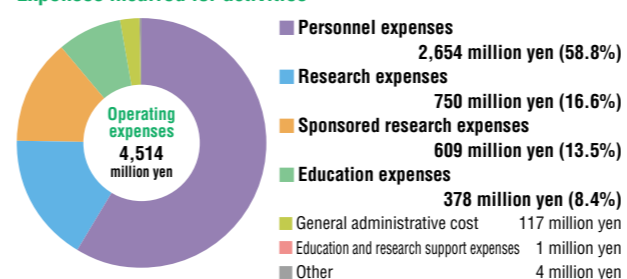
Expenses incurred for activities



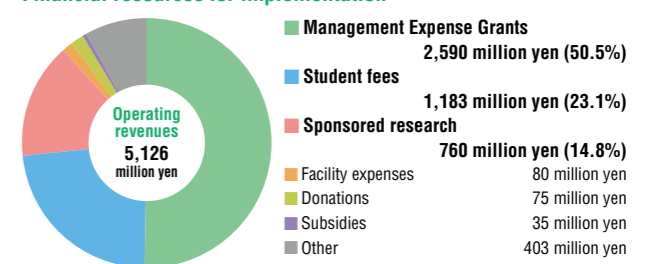
Financial resources for implementation



Expenses incurred for activities



Financial resources for implementation



Faculty of Engineering, Information and Systems/Related Departments

Faculty of Engineering, Information and Systems

Support for submission of papers to top journals

Companies Students Alumni Community

The faculty provided support for the submission of papers to top journals to encourage students to submit academic papers to journals with greater influence by covering some of the expenses for English proofreading, submission of papers, and open access, for example. The number of international joint papers (in English) submitted was 88 in AY2019, which is a 48% increase over the previous year.

Activities to secure large-scale external funds

Companies Students Alumni Community

The faculty accepted large-scale joint research and sponsored research (18 projects), totaling about 630 million yen in funds. To secure further large-scale external funding, the faculty carries out a wide range of support measures that lead to greater fund acquisition, such as the Power Up Support for Grants-in-Aid for Scientific Research program, priority budget allocation, Faculty Research Group program, Grant-in-Aid Application Advisor program, and seminars and workshops providing application writing support.

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. 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 Community

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 Community

The graduate schools have many international students; the ratio of international students in all the degree programs combined is as high as 25.1%. 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 Community

To aid in the development of global personnel, 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

Promoting the greater transparency of education programs

Students

The College of Policy and Planning Sciences revamped its website to accommodate entrance exam reform and is increasing the transparency of its education programs. The college received great interest from many students during university information sessions and has maintained a high application-to-enrollment ratio.



Fusion with the English program

Students

The College of Engineering Systems is increasing the English content of its education by adding courses offered by its Bachelor's Program of Interdisciplinary Engineering (English program) to the scope of specialist elective courses required for graduation.

School of Informatics

Development of advanced and global human resources

Students Community

In addition to seamless English education over the four years of undergraduate studies, a 15-hour TOEIC prep course is offered to 10 students by application. The percentage of students who are from other countries has increased to about 4%, and the school has maintained a high graduate school advancement rate of 74%.

Participation in a programming contest

Students Alumni Community

The student team from this School placed 7th at the Asia Yokohama Regionals for the International Collegiate Programming Contest 2020, which are the preliminaries for Japan.

Contribution to ICT education

Community

The College of Information Science supported Independence Servers Day (5th) held by the Tsukuba General Education Research Institute, and its students helped run the event.



Faculty of Life and Environmental Sciences/Related Departments

Faculty of Life and Environmental Sciences

Efforts to attract more external funding

Companies

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 AY2020 (AY2020: 55 projects, about 700 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 (AY2020: 85 projects, about 300 million yen).

Large-scale research projects

Companies Community

Two R&D projects (Achieving Zero Food Risk by Improving Crop Resilience Using Cyber-physical Systems and Development of Innovative Food Solutions that Simultaneously Reduce Food Loss and Improve QoL) with Faculty of Life and Environmental Sciences faculty members as program managers were selected for the Moonshot Agriculture, Forestry and Fisheries Research and Development Program (total for two projects: about 75 million yen in AY2020 and 850 million yen in AY2021 (tentative)). The faculty will do its part to pursue research that will enable the development of a global-scale sustainable food supply industry that is free of overburden and waste.



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

Improvement of learning environment for globalized human resource development

Students

The graduate school has a relatively high ratio of international students (about 24% as of October 2020). In addition to English programs that allow students to earn a degree with only courses in English, the graduate school also offers a Double Degree Program with partner universities in other countries and an international Joint Degree Program (JDP), continuing to create an environment that nurtures globally minded individuals even in the COVID-19 pandemic.

Meeting diverse learning needs

Students Alumni Community

A Frontiers of Sediment Disaster Countermeasures 2021 Extension Program of the Master's Program in Environmental Sciences was completed by 54 students from the workforce. The Japan Civil Engineering Consultants Association grants credits for this highly acclaimed program, which is seen as part of continuing education for engineers.

Improvement of learning environment for globalized human resource development

Students

With the aim of developing globalized human resources, the graduate school offers English programs and Double Degree Programs (DDP) with partner schools (National Taiwan University, University of Bordeaux, and the China University of Geosciences) in each program. The graduate school was greatly impacted this year by the COVID-19 pandemic with restrictions on movement across borders, but it used webcasting and remote lectures to ensure international students, DDP students, and JDP students (39.1% of students completing a program) could finish their programs.

International joint degree programs

Students

A Joint Master's Degree Program in Sustainability and Environmental Sciences was started in AY2017 as a Joint Degree Program (JDP) with the Malaysia-Japan International Institute of Technology and the Universiti Teknologi Malaysia (MJIT-UTM). In this program, research and education resources from the University of Tsukuba are used in the actual field where environmental issues arise in a form of practical education. One student completed the program in August 2020 (2nd year student).

School of Life and Environmental Sciences

Leading the efforts for globalization

Students

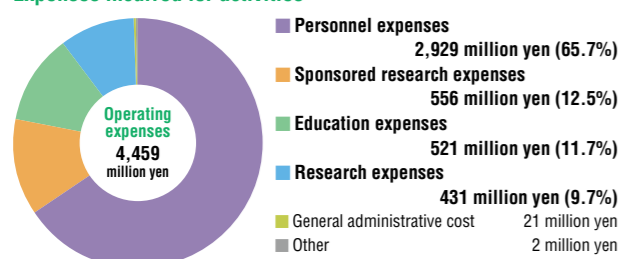
The school has launched the Interdisciplinary Program of Life and Environmental Sciences (for international students) as an interdisciplinary program straddling different colleges. In each college, the program is offered as the Interdisciplinary Course in Life and Environmental Sciences, and classes are held for international students and Japanese students together, facilitating global human resource development while encouraging intercultural exchange between Japanese and international students. This school is a driver of globalization for the university and it achieved a 9.0% ratio of international students in AY2020 despite the COVID-19 pandemic (highest of all nine schools).

Improvement of learning environment for globalized human resource development —Example of college activities

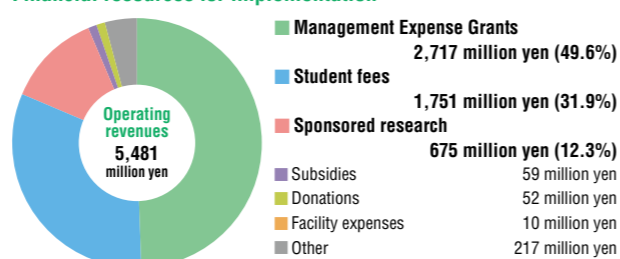
Students

The College of Biological Sciences established a new Global Biology in English (GloBE) course centered around a wide variety of specialist subjects in English to facilitate cooperative learning between Japanese and international students. With the addition of this course, the college examined subjects from among classes in other colleges held mainly in English that were suitable for the conferral of a degree (bachelor's of science) even if taken by a student in the College of Biological Sciences, and subjects that were specially designated by the college president were set as specialist subjects to meet graduation requirements.

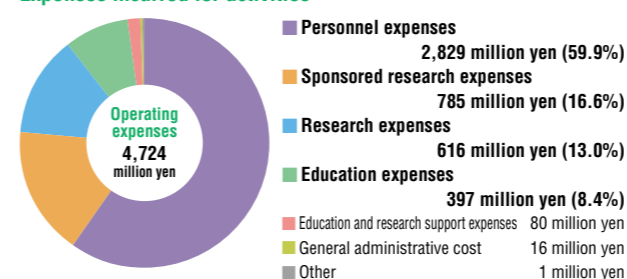
Expenses incurred for activities



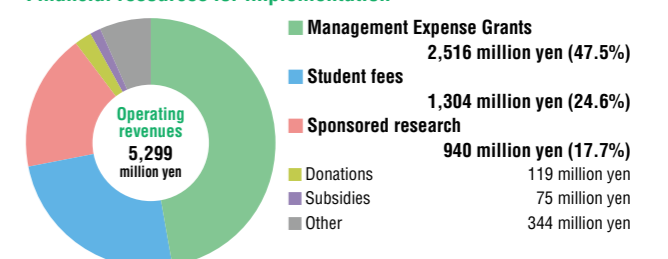
Financial resources for implementation



Expenses incurred for activities



Financial resources for implementation



Faculty of Human Sciences/Related Departments

Faculty of Human Sciences

- Increase in the number of articles published in English and the number of citations Companies

The number of articles published in English increased by 14% (10 articles) from AY2019 to AY2020. The number of articles cited increased dramatically from 23 to 416.

- Research exchange and public relations activities held online during the COVID-19 pandemic Students Alumni Community

An interdisciplinary international research exchange with Ohio State University was held online, and an extension program (Inclusive Leaders College) run by the Faculty of Human Sciences was held online for students in Japan. In addition, the monthly Faculty of Human Sciences Colloquium was held online through both live and on-demand streaming, sharing much information about faculty members' research activities.



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

- Filling intake quota and academic paper productivity Companies Students

The intake quota fulfillment rate was 120% for the Doctoral Degree Program in Disability Sciences and 106.3% for the Master's Degree Program in Psychology. The academic paper productivity rate for the degree programs in Rehabilitation Science was 31.3% for the Master's Degree Program and 200% for the Doctoral Degree Program.

- Online international student conference Students Alumni

An online international student conference was held for the degree programs in Education and it was attended by 173 graduate students from the University of Tsukuba and seven overseas partner schools. Participants gave research presentations and had group discussions.

- Degree conferral rate and job placement rate Students Alumni

The degree conferral rates were very high for Lifespan Development (82.1%) and Lifespan Developmental Sciences (100%). In addition, the job placement rate was 100% for students who completed the School Education (Doctoral) and Psychology (Doctoral) programs and for Japanese students who completed the Disability Sciences (Doctoral) program.

- Curriculum development Students

The graduate school facilitates academic society activities and article submissions in English with an English for Basic Psychology course for the Master's Program in Psychology, Doctoral Program in Psychology, and Degree Program in Psychology and a Writing Psychology Papers in English course held by a British researcher in psychology.

Master's Program in Education

- Building an education network in 45 countries for an internship training program for teachers from abroad Students Alumni

The graduate school collected data on the places of employment of graduates of the internship training program for teachers from abroad, compiled their information in an electronic list, and created a database of 347 people from 45 countries who could participate in international exchange. Using this database, it held an international education symposium titled, "How teachers around the world can combat COVID-19," online in February 2021 with participants who completed the program and currently work in South Korea, the Philippines, and Peru.



- Career-up Seminar taught by graduates of the Master's Program in Education Students Alumni Community

Graduates of the Master's Program in Education working on the frontlines of education, government, and research in places like International Baccalaureate (IB) schools, junior high schools affiliated with the university, the Board of Education, and national universities were invited to teach online Career-up Seminars in February 2021. The seminars were attended by college students, Master's Program in Education students, and students in Education degree programs and included lectures, a Q&A session, and discussions to help students advance their careers in education.

School of Human Sciences

- Enhancing the School of Human Sciences' capacity to promote its education worldwide Students Alumni

The School of Human Sciences created a video on its education (18-minute regular version and 3-minute short version) and posted it on its website. It also engaged in online exchange using two classes as a part of its international exchange.

- Student survey on learning and advancement Students Alumni

The school held a survey from October 30 to November 22, 2020, and 254 of its 537 students responded (47.3%). The survey covered topics such as the importance of university information sessions, satisfaction with studies, and challenges in online learning.



Faculty of Health and Sport Sciences/Related Departments

Faculty of Health and Sport Sciences

- Advancing joint research with the Advanced Research Initiative for Human High Performance (ARIHHP) Companies Students Alumni

The Advanced Research Initiative for Human High Performance (ARIHHP) carries out open-invitation research for people inside and outside the university, aiming to become a nationwide hub for collaboration and joint research. It is engaged in joint research based on applications for 19 projects from the university and 29 projects from other institutions. In March, it held an online forum that included presentations on research results and a lecture by Dr. Koji Murofushi, Commissioner of the Japan Sports Agency, and had 154 attendees despite the COVID-19 pandemic.



- Development of the Tsukuba International Academy for Sport Studies (TIAS) Companies Students Alumni

The faculty built a 1.5-year long graduate school program sponsored by the Japan Sports Agency (JSA) called the "Tsukuba International Academy for Sport Studies (TIAS)" and has been running this program for five years. After the JSA-sponsored program ended, it was revamped into a new two-year program called "TIAS 2.0" for only eight people—about half the capacity of the former program. Nearly double that number of applicants were received, and 10 students from seven countries were eventually selected as the new first-term students in October.

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 105.0% for Master's Program in Physical Education, Health and Sport Sciences. In addition, the ratio of international students is particularly high in the English-based Sport and Olympic Studies degree program, at 77.9%, and has been maintained at a consistent level for the other degree programs, 20.0% for Doctoral Program in Physical Education, Health and Sport Sciences, 11.1% for Master's Program in Physical Education, Health and Sport Sciences, and 10.0% for Sports Medicine.

- Online career development forum Students

For the Master's Program in Physical Education, Health and Sport Sciences, the graduate school invited three lecturers to give a talk entitled "Three perspectives of career development" as a part of career building support. They made lecture videos entitled "Careers with Companies," "Careers in Education," and "Coaching Careers" and held an online career development forum over a 4-week period on "manaba." It also collaborated with job search-related companies to create videos for use in job hunting guidance provided online (on-demand streaming).

- Maintaining a high degree conferral rate Students

The degree conferral rates were extremely high, starting with 166% for the Joint Doctoral Program in Advanced Physical Education and Sports for Higher Education, followed by 120% for the Doctoral Program in Coaching Science, 110% for the Master's Program in Physical Education, Health and Sport Sciences, and 104% for the Master's Program in Sports and Health Promotion. Student advising was carried out smoothly for all students, including those who required extra years.

- Promoting internationalization of the education curriculum Companies Students

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 (became independent in AY2021). 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

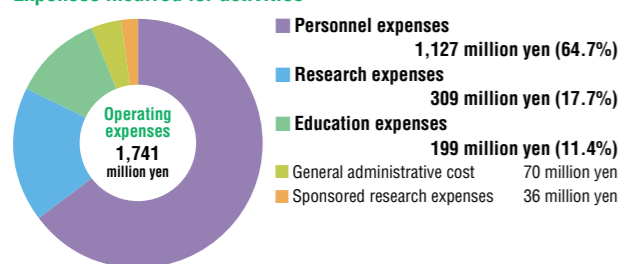
- Activities during the COVID-19 pandemic Companies Students Alumni Community

While various activities were limited by the COVID-19 pandemic, graduates have found work in all sorts of careers like teaching, working for the government, or working at a health-related company, sports company, media, publishing company, or general company, similar to other years. In addition, students have consistently made achievements despite competitions being canceled or postponed, winning commendation from the school president in the competition category (national level, includes teams) 15 times in AY2016, 21 times in AY2017, 25 times in AY2018, 29 times in AY2019, and 15 times in AY2020.

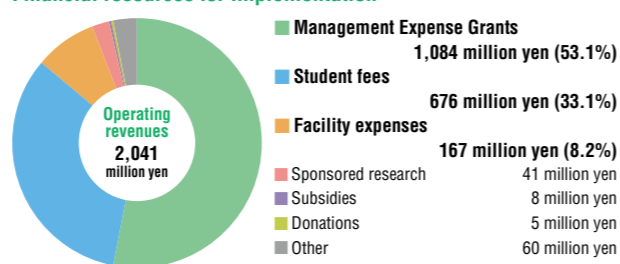
- Aiming for the Olympics and Paralympics Companies Students Alumni Community

The school enhanced its support programs (e.g., medical science support, development of training environment, academic support) aimed at increasing the number of students who can compete in international events. As a result, nine students made outstanding achievements for Japan (including for the age group) in AY2020, despite a huge decrease in the number of 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 AY2020 (in canoeing, tennis, track and field, and swimming).

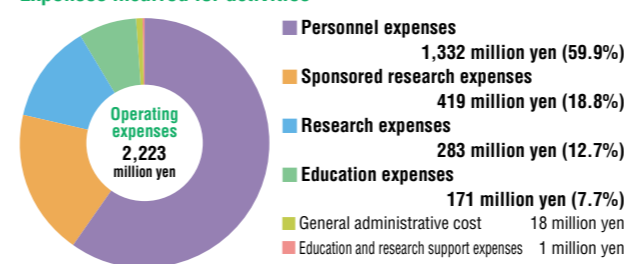
Expenses incurred for activities



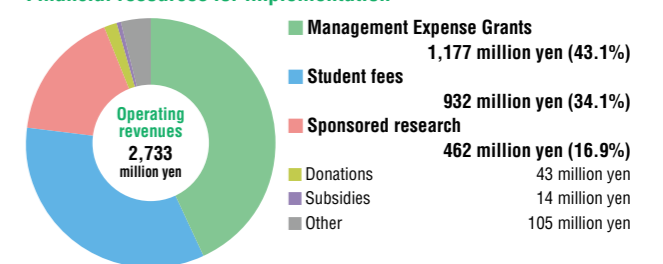
Financial resources for implementation



Expenses incurred for activities



Financial resources for implementation



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 four were selected, with preference given to younger students. Three of those were used to apply for a Grant-in-Aid, and two were selected for a Grant-in-Aid for Early-Career Scientists. These efforts resulted in an increase in the number of Grant-in-Aid applications from 37 in AY2020 to 55 in AY2021 and an increase in the number selected from 8 to 16.

Reborn Art Ball Project activities

Companies Community

The Reborn Art Ball Project 2020 (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 Olympic and Paralympic Games.



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

In the art and design degree programs, the intake quota fulfillment rate for the master's programs was 109% for Art, 111% for Design, and 113% for Heritage Studies and for the doctoral programs, it was 129% for Art, 200% for Design, and 200% for Heritage Studies, all exceeding 100%. The ratio of international students in the master's programs was 28.6% for Art, 33.3% for Design, and 52.9% for Heritage Studies, and was especially high in the doctoral program for Heritage Studies, at 70%.

Making education more international

Companies Students

Selected as AY2020 programs to receive support in the University of Tsukuba Educational Strategy Promotion Project, the graduate school carried out activities for the construction of an SDGs-oriented art education program through collaborative art projects between the university and affiliated schools (Art), International Research and Education Cooperation in Creativity (IRACI) Foundation Building and International Joint Degree Program (Design), and creation and development of an operational model of international e-learning education and research resources on the Heritage sites (Heritage Studies), striving to make education more international by working through the unique challenges of each degree program.

Increasing the employment/higher education advancement rate

Companies Students

The employment/higher education advancement rate was 61% for the Master's Program in Art and Design, an increase from the previous year (59.6%). Graduates of the Doctoral Program in Art and Design have found employment in advanced positions using their educational achievements, such as museum curator and special doctoral researcher at the University of Tsukuba.

Collaborative educational activities

Companies Students Alumni Community

Selected as AY2020 program to receive support in the Graduate School of Comprehensive Human Sciences Strategy Project, the Art and Design programs implemented their concept entitled "Building an art management foundation to realize the YUKARI Art Forest" in collaboration with the university, private companies, and local public organizations. 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. In addition, a newsletter was created for the final year of the UNESCO Chair Program.

School of Art and Design

Increase in opportunities for practical English learning and increase in ratio of international students

Companies Students

The school increased the number of opportunities for practical learning in English to help develop students who can play a global role. Only three specialist subjects were held in English prior to AY2009, and these focused on reading articles. More courses have now been added, such as a class about presentations in English taught by a non-Japanese faculty member who is a native English speaker and a practical class teaching how to create photo media-related pieces, bringing the total number of specialist subjects taught in English to 13 in AY2020.



A Japan-Expert (bachelor's degree) Program special entrance examination/Art and Design Course was established in AY2017 to bring in diverse outstanding students from around the world, and usually one person a year is accepted as a new student for this course. The first student graduated from this course in AY2020. The number of international students is growing every year, increasing from only two in AY2016 to 12 in AY2020.

Winners of the Minister of Education, Culture, Sports, Science and Technology Award and Mainichi Shimbun award

Companies Students

The school actively assists students submitting pieces for public contribution exhibitions and competitions outside the university, with 17 submissions winning or selected in AY2020. In public contribution exhibitions open to students around the country, two submissions won a Minister of Education, Culture, Sports, Science and Technology Award and one won a Mainichi Shimbun award. Submissions also won awards in a nationwide public contribution exhibition for professionals, including the Special Prize (two submissions), the Judges' Award, and the Fine Work Award. These awards demonstrate the high evaluation of the art and design educational achievements of the school. In addition to regularly held events like company workshops, job hunting seminars, and internship report meetings, all types of employment information are provided promptly to all students through mailing lists. In AY2020, the school started offering an Art and Design Career Education course aimed at broadening students' minds about their connection to society.

Faculty of Medicine/Related Departments

Faculty of Medicine

Greater emphasis on the ability to disseminate research results

Companies Students

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, the number of single author, head author, and corresponding author articles increased by 30% from AY2019 and the number of international joint papers increased by 10%. The total number of citations exceeded 2,000, more than doubling compared to AY2019.

Activities to implement research findings in society

Companies Community

The faculty was selected for the program to support the formation of sites for co-creation called "Tsukuba-type International Center for the Formation of a 'Digital Bioeconomy' Society," and has been collaborating with the Center for Artificial Intelligence Research, the Faculty of Life and Environmental Sciences, and a national research and development agency in Tsukuba to build a research base for promoting comprehensive research in medicine, food, and the environment. It was also selected for the Cabinet Office's Cross-ministerial Strategic Innovation Promotion Program, Strengthening National Resilience (Disaster Prevention and Mitigation) (development of a hydrogen fuel cell bus disaster prevention and infection control system), under which it has been conducting research on infection control measures.



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 100% or higher for almost all programs, and the ratio of international students—an indicator of how global the program was—was high at 29.6% for Master's Program in Medical Sciences, 26.7% for Neuroscience, and 25% for Master's Program in Public Health. The graduate school also assisted students in applying for the Research Fellowship for Young Scientists program, increasing the number of applications from 31 in the previous year to 41.

Promotion of international and interdisciplinary exchanges and reform of medical education

Companies Students Alumni Community

While various international exchange events were canceled due to the COVID-19 pandemic, the medicine-related degree programs, the Human Biology degree program, and the Humanities degree program jointly held an online event for Vietnam and Indonesia. It included information about the graduate school as well as research seminars led by faculty members and had 163 attendees.

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.

Student in the Doctoral Program in Life System Medical Sciences wins the JSPS Ikushi Prize

Companies Students Alumni

The Japan Society for the Promotion of Science (JSPS) Ikushi Prize is given to outstanding graduate school doctoral students who show great potential to contribute to the future development of technological research in Japan. Among the 18 recipients of the 11th prize (AY2020) from around the country was Tohru Takahashi from the Doctoral Program in Life System Medical Sciences (Advisor: Dr. Takeshi Sakurai, Faculty of Medicine; Doctoral research topic: Identification of a neuronal circuit that induces hibernation-like hypometabolic state in mice).

School of Medicine and Health Sciences

Contributing to the globalization of medicine education

Students Alumni

The College of Medicine held special entrance examinations for International Baccalaureate students and for the overseas education program in an effort to bring in students who will play a role in the global sphere. The College of Nursing also accepted two students through a special entrance examination for the Japan-Expert Program and one student through a special entrance examination for the International Baccalaureate program. In the College of Medical Sciences as well, two students from the United States and one from China passed the entrance examination for the English program.

Effective learning through online lectures

Students

In the College of Medicine, the e-learning program developed and supervised by University of Tsukuba faculty was promptly utilized in a Medical English Terminology Course, enabling effective learning of medical terminology through a hybrid system with in-person classes.

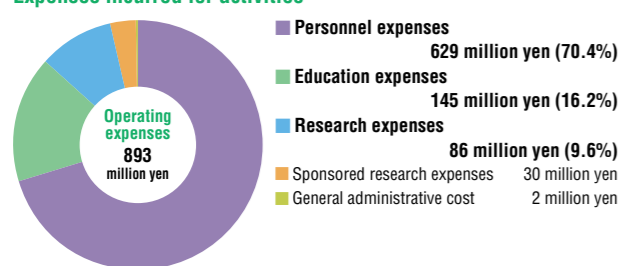
CoMed Tsukuba receives spring good deed commendation

Companies Students Alumni Community

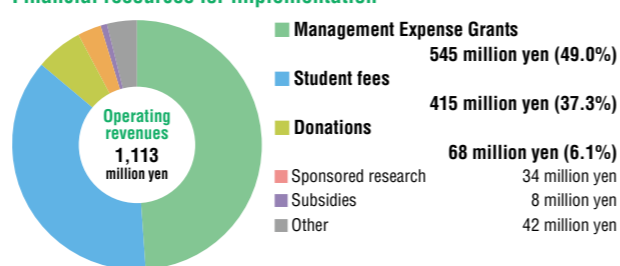
CoMed Tsukuba, a club primarily for students of School of Medicine and Health Sciences, held health education activities, mostly in Ibaraki Prefecture, such as a CPR workshop and a heatstroke workshop, earning it a commendation from the Nihon Zenkoukai.



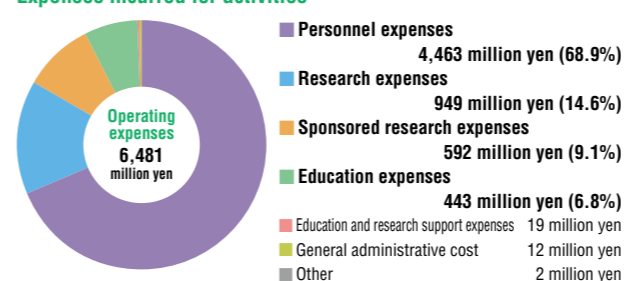
Expenses incurred for activities



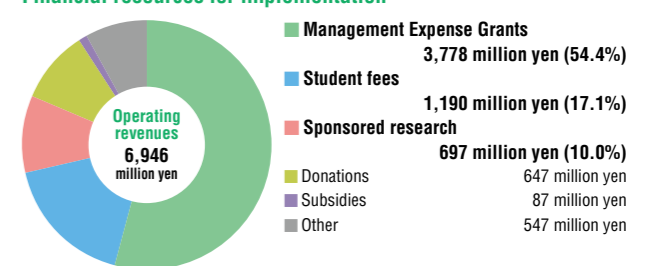
Financial resources for implementation



Expenses incurred for activities



Financial resources for implementation



Faculty of Library, Information and Media Science/Related Departments

Faculty of Library, Information and Media Science

International level research activities Companies Students Alumni

The graduate school carries out international research activities and participates in international joint research at ALM-PUB, a base for theoretical research on the public library model in place at Oslo Metropolitan University. In addition, of the peer-reviewed original articles published in languages other than Japanese, the ratio that was international joint articles (co-authored with a research institute in another country) was 21.4%, which is 3.9 points higher than the previous year. It also ranked 40th in the world and 1st in Japan in the library information management category in the QS rankings.

Promoting of research activities through regional collaboration Companies Community

In cooperation with the City of Yokohama, the graduate school used a pretrained language model to analyze residents' opinions on education services such as nursery schools and food-related services such as takeout during the COVID-19 pandemic. This research won an award for outstanding research at the Workshop on Web Intelligence & Interaction and was introduced in the Otogaijima Talk YouTube live show co-sponsored by Yokohama.



The graduate school collaborates with the Futaba Board of Education in Fukushima Prefecture to conduct surveys on the preservation of earthquake disaster materials. AY2020 was the 10th anniversary of the Tohoku earthquake, and four newspaper articles were written about the reconstruction activity support provided by the Faculty of Library, Information and Media Science.

room and has great potential for use in a wide range of applications. The group is exploring the possibilities of using this method in interactive art and it won the best article award in an international conference on digital art. Being a joint research project with the Tokyo University of the Arts and Keio University, it has great promise for future development.



Post-pandemic student support Companies Students

The graduate school opened a Fuwatto Information Provision plaza that can be used freely to make it easier for students to start their job search journey. They have maintained an employment/higher education advancement rate of over 80% (81.8%). Article productivity per student also increased from 25% in the previous year to 46%.

Close communication between students and advisors Students

Detailed meetings were held with students that also covered care for mental health during the collapse of research plans in the COVID-19 pandemic, in an effort to assess their current situation and future research plans. Support measures were developed based on information obtained in those meetings.

School of Informatics

Winner of many awards including selection for the Exploratory IT Human Resources Project Companies Students Alumni

Two students from the College of Media Arts, Science and Technology and one from the College of Knowledge and Library Sciences were selected for the Exploratory IT Human Resources Project (the MITOH Program) run by the Information-technology Promotion Agency. In addition, one student in the College of Media Arts, Science and Technology and one student in the College of Knowledge and Library Sciences won the Innovative Technologies 2020 Special Prize -Crazy- and the DCAJ Chairman Prize. Many students in the school win awards from academic societies and contests in Japan and around the world.

PBL-based practical education through industry-academia partnerships Companies Students Community

Group PBL-based classes are held through industry-academia partnerships, for example, the Education Network for Practical information Technologies (enPiT) education program funded by the Ministry of Education, Culture, Sports, Science and Technology and the Embedded Technology Campus OJT program 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. With the COVID-19 pandemic in AY2020, a remote dispersed environment platform was built and implemented using ICT tools.

School of Integrative and Global Majors

Development of global human resources Companies Students Alumni Community

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.



Increase in article productivity Companies Students

The school actively supports students in their efforts to present research papers, with 25 articles being published in English by students in the Human Biology degree program (ratio to students of 73.5%). The integrated Ph.D. program in Humanics, which is in its second year, has 21 students and had seven articles accepted in AY2020, a 233% increase. From AY2021, students will be starting the doctoral portion of the program and output is expected to increase further.

Huge increase in student enrollment Students

In the Life Science Innovation degree programs, an Early Completion Program was established to encourage students from the workforce to start a doctoral course. Such students accounted for 39.1% of all doctoral students in the program. Increased PR efforts also led to a 128% year-on-year increase in the number of applicants in AY2020.

Joint research, publishing in international journals Companies Students Alumni

In the Human Biology degree program, students are given support for their research and they participated in 12 joint research projects in AY2020 with universities, research institutes, companies, and international organizations from inside and outside Japan. The ratio of joint research projects to number of students increased dramatically from 5.4% in the previous year to 35.4%. In addition, 25 articles were published in international journals, and the ratio to number of students also increased from 62.2% to 73.5%.

Unique education and research with a Collaborative Graduate School System Companies Students Community

In the Life Science Innovation degree programs, the Tsukuba Life Science Promotion Association with 30 independent administrative institutions and corporate research institutes among its members plays an active role in the students' research and education, enabling students in the program to receive instruction from not only university faculty, but also world-leading experts. Professors from top universities around the world such as the University of Oxford (England), Wageningen University (Netherlands), University of Montpellier (France), and University of Bordeaux (France) participate in this program, and students have the opportunity to receive advice from these world-leading professors. Lectures are being held online during the COVID-19 pandemic.



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

Post-pandemic research support system Companies Students

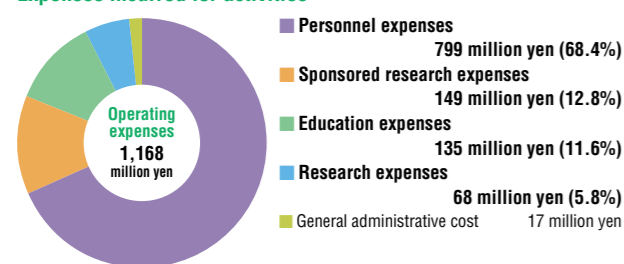
With many international conferences being canceled or going online in the COVID-19 pandemic, the graduate school provided unified and flexible support for international conference presentations and for journal article submission, achieving an article productivity of 27% per student.

In entrance examinations that were held entirely online, the application-to-enrollment ratio for the master's program was 2.35 times, similar to the previous year, and recruitment fulfillment rate was 124%. The recruitment fulfillment rate for the doctoral program was 117%.

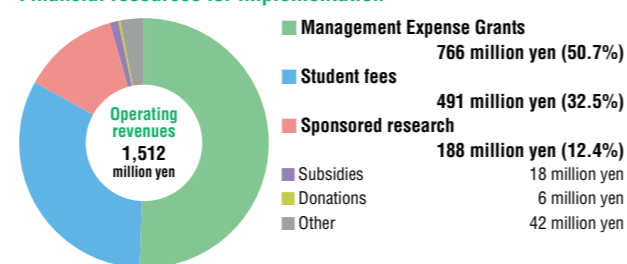
Potential of interactive art using brain waves Companies Students Alumni

Informatics covers a wide range of academic fields and is strongly linked to media art. The brain wave (ERP) measurement method using candle-type electrodes that is being carried out collaboratively between students and their advisors does not require a special magnet shielding

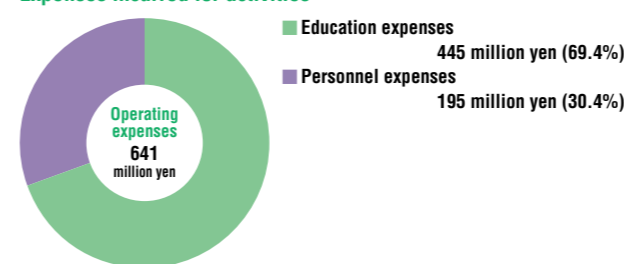
Expenses incurred for activities



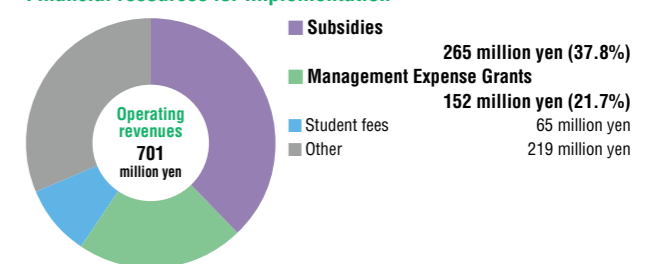
Financial resources for implementation



Expenses incurred for activities



Financial resources for implementation



University of Tsukuba Library, Centers, Etc.

University of Tsukuba Library

Expansion in public projects for the community

Companies Students Alumni Community

In AY2020, the University of Tsukuba Library opened an AY2020 special exhibition titled, "Must-see Books Displayed Again." This special exhibition looks back on the special exhibitions from the past 25 years and displays a selection of pieces from each year since 2004 on the library website.

The project was flexibly revised to accommodate circumstances in the COVID-19 pandemic, setting a new theme and displaying it electronically to maintain the quality of the project and open it to the community.

The website was viewed 4,850 times during the project period, approx. 1.4 times more than the page views for websites of in-person exhibitions in regular years.



International Institute for Integrative Sleep Medicine (IIIS)

Promoting world-class research

Companies

The IIIS is a research center specializing in sleep that was selected for the Ministry of Education, Culture, Sports, Science and Technology's world-class research center program. To implement the research findings in society, it established a company called "S'UIMIN" as a startup. In



September 2020, it launched a commercial sleep test service as its first social implementation program, collecting and analyzing big data on sleep and epidemiology to develop methods for predicting disease risk. Development of this method is one goal of the Moonshot Research and Development Program run by the Japan Agency for Medical Research and Development (AMED) that was selected in AY2020. This program is carried out by a research group centered on the IIIS, and the project titled, "Development of New-generation Medical Care Systems through Customizing Sleep and Hibernation," has a five-year budget of about 2.2 billion yen.

Center for Education of Global Communication (CEGLOC)

Measures for online education

Companies Students

CEGLOC is a university-wide joint education center with three language divisions (Foreign Language Education Division, Japanese Language Education Division for international students, and Japanese Language Division) as well as a teaching material development and support division (that also runs programs of related centers) and a planning and coordination division. Under the Joint Usage Education Center system, CEGLOC was accredited by the Ministry of Education, Culture, Sports, Science and Technology as the University of Tsukuba Center for Distance Learning of Japanese and Japanese Issues to support international

students.

In AY2020, as a Joint Usage Education Center, CEGLOC continued stable operation of remote education content. The Tsukuba Japanese e-learning course scheduled to end at the end of AY2019 was extended to the end of August 2020 given the need for online Japanese education resources in the COVID-19 pandemic. The Tsukuba Japanese Test Collection (TTBJ), a collection of online Japanese tests, is often used by other institutions as well to test Japanese language proficiency, for example, for accepting potential international students applying to other universities, for determining exemption from the Japanese language section of the entrance examinations for universities in other countries, and for conducting surveys held by the National Institute for Japanese Language and Linguistics. It has been used 5,777 times by 142 institutions.

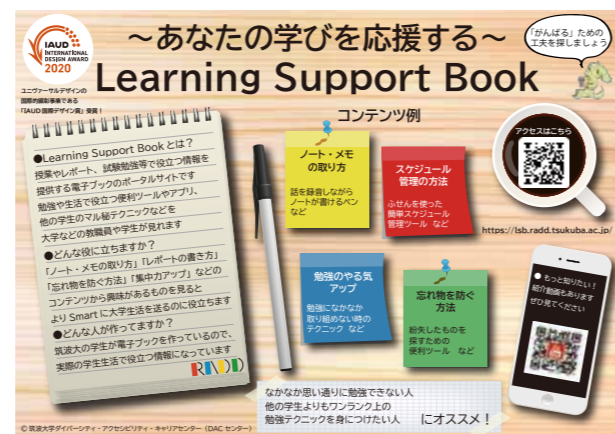
Center for Diversity, Accessibility and Career Development

Activities to support students with developmental disabilities

Students

In AY2020, the Educational Center for Human Resources Supporting Students with Varied Developmental Profiles, part of the Joint Usage Education Center, carried out various activities, such as holding online FD/SD workshops for other universities related to support for students with developmental disabilities (total of 1,699 participants), launching the RADD Consultation Network as a closed social media network (101 participants from 70 schools across Japan), and launching joint use of the LSB support information delivery service (used by 28 schools across Japan).

It also created lecture videos by professionals from inside and outside the university, incorporating them into the e-learning system to allow free access to university faculty around the country (16 videos).



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

Focus on research related to health and aging

Companies

The center conducted research on health and longevity with a focus on six projects. Dr. Akira Shibuya won an AY2020 Commendation from the Minister of Education, Culture, Sports, Science and Technology (science and technology category) for his research on immunoreceptors. The center published 37 peer-reviewed original articles in English (of which 19 were head author or corresponding author articles), and articles on aneurysm formation (PNAS) and on aging of skin stem cells (Aging Cell) received particular attention. The center also won competitive funding from private organizations and others, greatly increasing its funds from 16 million yen in the previous year to 59.4 million yen in AY2020.

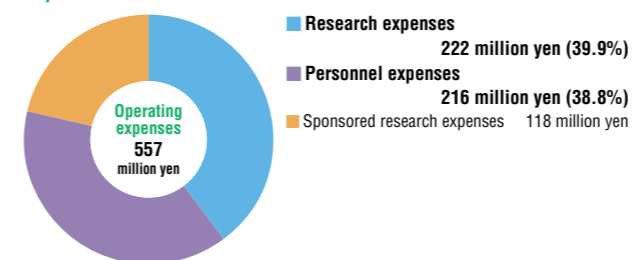
Improvement in facilities centered on structural biology research

Companies

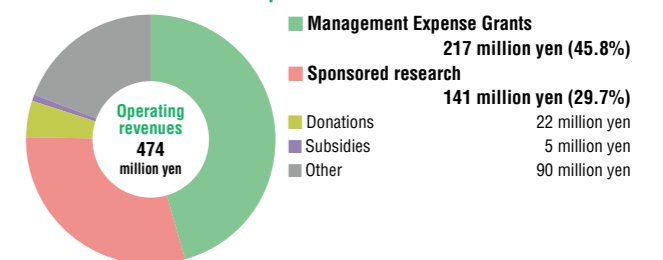
In recent years, the importance of molecular structure analysis technology with cryogenic electron microscopy has been increasing in research fields such as infection control. To meet these research needs, the center's research facilities in the field of structural biology were upgraded and expanded for improved safety and efficiency, and joint research activities are being expanded.



Expenses incurred for activities



Financial resources for implementation



Center for Computational Sciences

Research results from a multidisciplinary center for computational science

Companies

The Center for Computational Sciences (CCS) has published a total of 149 peer-reviewed papers based on the construction and application of an ultra-high-performance system in collaboration with six basic and applied science fields (elementary particles, astrophysics, atoms, physical properties, life science, and global environment) and two information science fields (high-performance computing systems, informatics).

235 original articles. CCS also acquired various funds (totaling 382.92 million yen) for research and development on the Cygnus system and other projects.

Use of Cygnus and OFF in research on COVID-19 measures

Companies Students Alumni Community

The Cygnus and Oakforest-PACS supercomputers at the center were used in COVID-19 research projects selected by the High Performance Computing Infrastructure (HPCI). (one Cygnus project and three Oakforest-PACS projects)

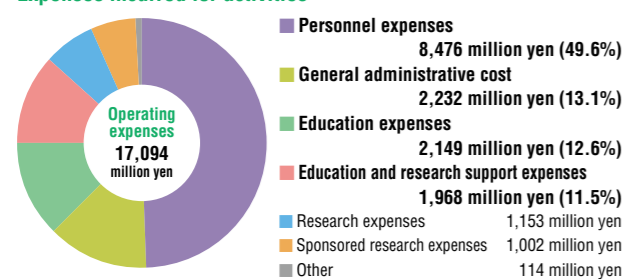


Construction of an unparalleled multi-hybrid accelerated supercomputer and contribution to interdisciplinary computational science through nationwide joint use

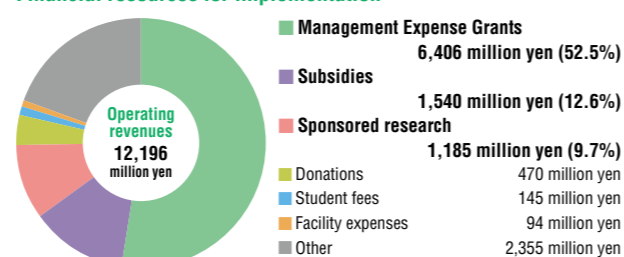
Companies Community

The Oakforest-PACS many-core supercomputer (performance: 25 PFLOPS) jointly built and operated with the University of Tokyo has the highest storage volume in the world in the IO500 band category. Launched by the CCS in AY2019, Cygnus (PACS-X) has been used to build and operate the world's first multi-hybrid accelerated computing system. These systems were provided as nationwide joint-use facilities for computational science and computer science research inside and outside Japan. Partly as a result, CCS was able to publish a total of

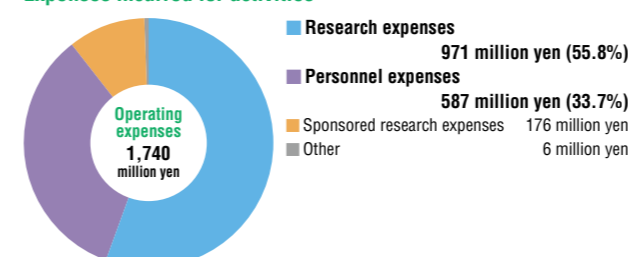
Expenses incurred for activities



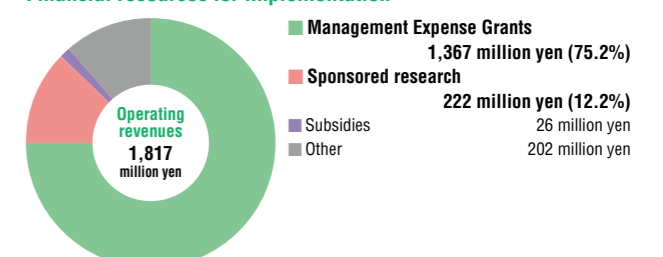
Financial resources for implementation



Expenses incurred for activities



Financial resources for implementation



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 Tsukuba Plant Innovation Research Center (T-PIRC) carries out translational research linked from basic, through applied, to practical research. It has produced many research achievements linked to the development of world-leading genetic transformation technology and the development of new industries, such as the development of a high-efficiency genetic modification vector that enables gene transfer to various plants. In AY2020, T-PIRC published 85 papers. Also, as a joint-use research center accredited by the Ministry of Education, Culture, Sports, Science and Technology, T-PIRC planned and carried out 44 joint-use/joint research projects to boost Japan's research capabilities in the field of transformed plant design.

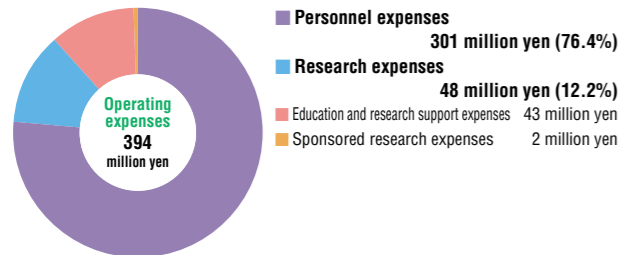
- **Approval of distribution of genome-edited high GABA tomato (Sicilian Rouge High GABA)** Companies Community

T-PIRC used genome-editing technology to develop a new tomato, and the genome-edited high GABA tomato (Sicilian Rouge High

GABA)—the first domestic genome-edited crop in Japan—was approved by the Ministry of Agriculture, Forestry and Fisheries for distribution as a regular food product. This made international headlines as the world's first genome-edited direct food, has had a large impact on the genome-edited crop guidelines and policies in Western countries, and made a big mark on progress in related fields worldwide. Also, as the core center for the National BioResource Project, T-PIRC aided in obtaining germplasm from overseas and worked on the development of new products using germplasm, advancement of new breeding technologies, and social implementation. It carried out projects such as JST/OPERA's Creation of Innovative Advanced Technology for the Future of Food program as well as special collaborative research projects and strategic zone projects.

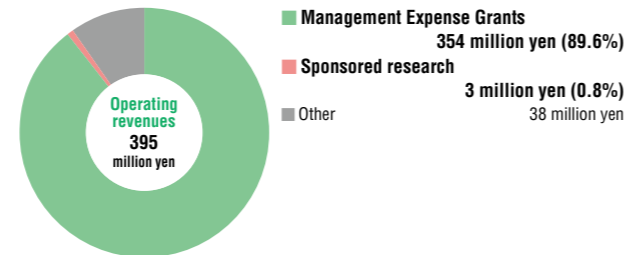


Expenses incurred for activities



* 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.

Financial resources for implementation



Affiliated Schools

- **Group for Cooperative Promotion of Special Needs Education receives AY2020 Distinguished Teacher Award from the Minister of Education, Culture, Sports, Science and Technology** Students

The Group for Cooperative Promotion of Special Needs Education that manages the teaching material and instruction method databased in a Program to Create a Tsukuba-type Inclusive Education System received an AY2020 Distinguished Teacher Award from the Minister of Education, Culture, Sports, Science and Technology. Continuing from the previous year, the group created a book of data from a database developed by five affiliated school for special needs education called, "Teacher material advisor for school for special needs education affiliated with

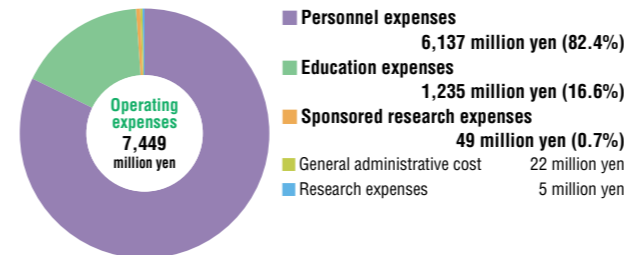


the University of Tsukuba to enrich classes: Independent activity version." In March 2021, it widely shared the practical achievements of each affiliated school for special needs education that created the data for the database in a seminar.

- **International exchange using online platforms** Students

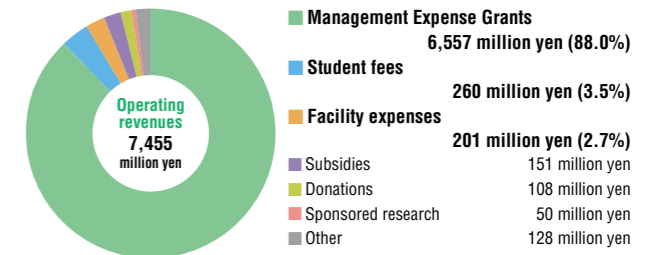
All movement of students to and from Japan came to a halt in the COVID-19 pandemic, and online international exchange was carried out with a focus on the Senior High School International ESD Symposium. In addition to the 17 SDGs, global activities during the pandemic were discussed, and the number of participating countries and overseas schools increased. International joint field work by high school students (Australia) was suspended until the pandemic eases, and students collaborated with the Faculty of Life and Environmental Sciences, the Faculty of Humanities and Social Sciences, and the Faculty of Engineering, Information and Systems as well as the Office of Global Initiatives, joining a Southeast Asia Ministers of Education Organization high school network and expanding the scope of their international exchange.

Expenses incurred for activities



* Besides the above, details of activities at affiliated schools in AY2020 are provided on Page 33.

Financial resources for implementation



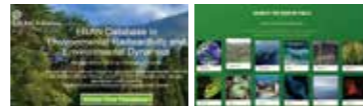
Center for Research in Isotopes and Environmental Dynamics (CRIED)

- **Research on the status of environmental recovery in Fukushima led by the Collaborative Network Center Project** Community

A little more than 10 years have passed since the nuclear accident in Fukushima, and CRIED published its general review in AY2020. First, it compared data from Japan with data from other cases around the world and published a TECDOC as an official IAEA document showing the factors that impacted the environment. Next, it reviewed over 210 relevant research articles and published its findings on contamination and environmental recovery in Nature Reviews. The conclusion that environmental recovery in Fukushima advanced more quickly than recovery after the Chernobyl disaster received great attention by newspapers and other media.



the nuclear accident in Fukushima, assigned Digital Object Identifiers (DOI), translated it into English, and published it online in a format that enables consolidated searches. All the data is free for anyone to view and will contribute to the further advancement of research. This database is one of the largest in the world.



- **Cooperation with an International Atomic Energy Agency survey** Companies Community

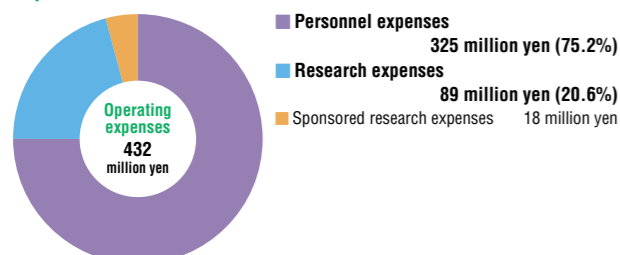
Dr. Onda, director of CRIED, participated in the ILC 2020 sampling mission offshore of Fukushima Prefecture. This mission was held to increase reliability and transparency of ocean monitoring data in the sea near the Fukushima Dai-ichi Nuclear Power Station.



- **Operation of the world's top environmental radioactivity database** Community

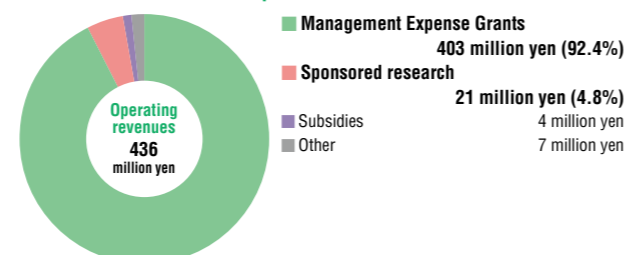
CRIED collected environmental radiation data including data from

Expenses incurred for activities



* 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.

Financial resources for implementation



University of Tsukuba Hospital

- **Activities to improve management and become a magnet hospital** Community

In AY2018, the Hospital shifted from getting on track with good management to aiming to enhance its true function. While continuing to improve its management (its ability to profit), it invests the profits generated to boost its functions, aiming to become a magnet hospital.

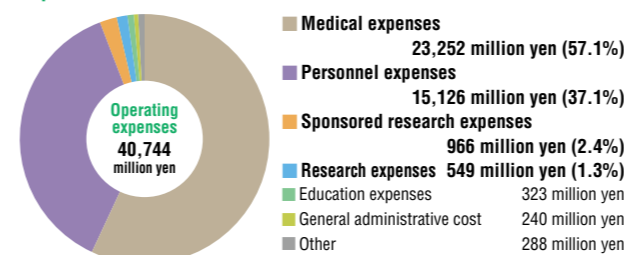
In AY2020, necessary investments were made, for example, to open the Advanced Critical Care Center, to upgrade advanced medical equipment, and to develop and maintain Building B, and cost-effectiveness of past investments was maximized. To achieve profitability on a cash basis, the Hospital focused on priority issues such as thorough information sharing, increase in the bed occupancy rate, increase in the number of surgeries, increase in inpatient treatment unit prices, and increase in the number of proton beam therapy patients.

- **Excellent hospital for non-Japanese patients** Community

The first edition of the manual for assisting non-Japanese patients was revised into a second edition and shared with hospital staff. In addition, tools for communicating with foreign nationals are consistently updated and English is being added to signs throughout the hospital.

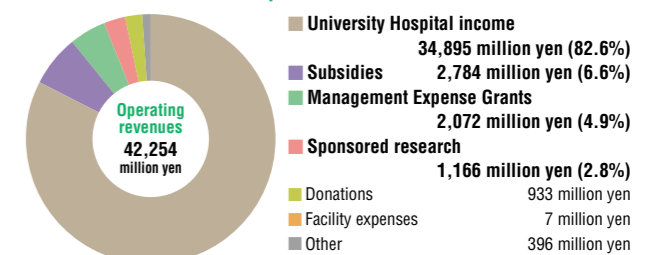


Expenses incurred for activities



* Besides the above, details of activities at the university hospital in AY2020 are provided on Page 32.

Financial resources for implementation



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:

AY2020 (17th Term) Financial Statements, etc.

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

University of Tsukuba Third Mid-term Plans

https://www.tsukuba.ac.jp/public/publicity_term.html



Report Concerning Business Results of the University of Tsukuba

https://www.tsukuba.ac.jp/public/publicity_report.html



→Tsukuba Futureship

<https://futureship.sec.tsukuba.ac.jp/>



→Crowd Funding Business

https://readyfor.jp/lp/university_of_tsukuba/



University of Tsukuba Integrated Report 2021

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