

Advancing science and human wellbeing

We find our purpose through the advancement of science and human wellbeing.

Progress requires a convergence of knowledge and technology
that bridges organizations, academic disciplines, and fields of research.

We celebrate individuality to foster a rich culture of learning and creation,
seeking to constantly reinvent ourselves in order to bring change for a better future.

As pioneers opening new worlds of exploration,
we expand the possibilities of science and create value for and with society.

Mission

Advancing science and human wellbeing to create value for and with society.

Core values

Explore and freely integrate knowledge and technology,
without constraint of preconceptions.

Celebrate individuality to foster a rich culture of creation.

Continuously challenge existing assumptions and approaches
to enable bold reinvention.

Science Tokyo — Leading the world through the power of science

Messages from President & CEO Ohtake and President & CAO Tanaka

Believing in the transformative power of science to create a better, brighter future

Naoto Ohtake

President and Chief Executive Officer (CEO)

Science Tokyo set sail in October 2024 as a new university with “science” at its core. In these uncertain times, the Institute firmly believes in the power of science and envisions a future where science enables the achievement of a better life, a better society, and a better planet. Science Tokyo is developing and nurturing professionals capable of realizing this threefold vision.

To achieve its goal of becoming a world-leading university, Science Tokyo has defined two tiers of university management — the foundational tier and the original tier. The foundational tier is about building a global-standard governance structure. To realize a high level of diversity, fairness, and inclusiveness for all stakeholders, the Institute aims for a free and flat environment where everyone is respected equally and empowered to speak up. The original tier focuses on continued promotion of education and research based on practical science, and cooperation with various universities at home and abroad to formulate a world-class research structure. Science Tokyo’s aim is to cultivate homegrown talent while openly welcoming leading researchers from around the globe.

As the chief executive officer in charge of the national university corporation’s management, I intend to devise simple yet bold initiatives to determine what is needed to create positive impact in society, and what is required to develop talented professionals.



Vision-driven interdisciplinary research

One specific action is the introduction of the Visionary Initiatives (VIs), which form a vision-driven interdisciplinary research framework encompassing diverse research fields and stages. This Institute-wide approach for implementing research and education across disciplines goes beyond solving societal challenges to help realize a “better, brighter future.” As of August 2025, approximately 360 researchers in total are participating in the activities of six VIs, and more VIs are being planned. Going forward, Science Tokyo will advance research and education further by inviting researchers from domestic and international universities and companies, as well as all Science Tokyo researchers, to participate in the VIs. The Institute is committed to creating positive outcomes that contribute to Japan and the world by generating real societal impact through its VIs.

Using platforms such as the Institute of Biomedical Engineering to channel VI efforts for enhanced societal impact, Science Tokyo will advance a global innovation ecosystem through collaboration with domestic and international stakeholders. Domestically, Science Tokyo is promoting teamwork through endeavors such as the Future Leading Innovation Partnership (FLIP), which also

includes Ochanomizu University, Tokyo University of Foreign Studies, and Hitotsubashi University. On the global stage, Science Tokyo is fostering researcher recruitment, student exchange, and industry-academia collaboration with Imperial College London in the UK, RWTH Aachen University in Germany, Massachusetts Institute of Technology and Harvard University in the US, partner universities primarily in Asia, and other universities that share the VI vision. As an open-system university, Science Tokyo will continue to explore opportunities for collaboration and co-creation with all stakeholders worldwide.

Threefold *esprit* that defines Science Tokyo

The predecessor universities of Science Tokyo — TMDU and Tokyo Tech — both pursued the “creation of new industries and medical treatments” since their founding. Both institutions also consistently centered their approach on “education through advanced research.” TMDU accepted the largest number of critically ill patients in Japan during the COVID-19 pandemic, while Tokyo Tech provided technical support for recovery efforts following the Fukushima nuclear accident caused by the Great East Japan Earthquake, demonstrating the “proactive attitude when facing crises” of both predecessors. Science Tokyo intends to cherish these three forms of *esprit* as it pioneers the next frontier.

Profile Ohtake earned his doctoral degree in mechanical engineering from Tokyo Tech in 1992. He became a professor of the Department of Mechanical Sciences and Engineering, Graduate School of Science and Engineering, Tokyo Tech in 2010. He was appointed the director-general of the Institute of Innovative Research, Tokyo Tech in 2022. He assumed his current position in October 2024. Ohtake specializes in functional materials and thin film technology.

Science Tokyo was established following the merger between Tokyo Medical and Dental University (TMDU) and Tokyo Institute of Technology (Tokyo Tech), two institutions with a long history of promoting science in Japan. A global open-system university, Science Tokyo embraces its mission of advancing science and human wellbeing to create value for and with society.

Fostering innovation rooted in convergence science through the circulation and exchange of intellect

Yujiro Tanaka

President and Chief Academic Officer (CAO)

Society faces many challenges, such as climate change, natural disasters, poverty, infectious diseases, and international conflicts. Attempts to solve all these problems in today’s zero-sum society will lead to inequalities and divisions. That is why a change in the direction of our society, from zero sum to positive sum, is needed. Innovation is paramount in this context. Science Tokyo’s duty is to spawn innovations in diverse fields to overcome numerous societal issues.

As the academic head of the organization, I aim to create an environment where intellect is circulated, exchanged, and mixed among all stakeholders, including faculty, students, medical personnel, technical and administrative staff, and university research administrators. Such an environment is required to create innovations. To ensure that these innovations make a real contribution to people’s wellbeing, Science Tokyo must stay connected with society from the early stages of research, listen to what people have to say, and work together. I want Science Tokyo to be a university that is truly open to society.

Cycle of intellect born from autonomy and collaboration

The president and CEO envisions the overall framework of the national university corporation, while I create the

university organization through both autonomy and collaboration. Intellect can only be seamlessly circulated and exchanged among stakeholders when each person embraces autonomy and the spirit of collaboration. Science Tokyo aims to foster a culture of autonomy and collaboration, and an organization that promotes such culture.

To this end, Science Tokyo has established three new research institutes: the Institute of Integrated Research, which promotes research in various fields; the Institute of Future Science, which is dedicated to innovative research for future society; and the Institute of New Industry Incubation, which consolidates industry-academia collaborations that promote joint research and the development of future talent. A fourth research institute, the Institute of Biomedical Engineering, was launched in 2025. It fully utilizes the hospital as a platform for co-creation and implementation, while also serving as an “intellectual crossroads.” Here, medical and dental sciences researchers collaborate from the outset in the same space with science and engineering researchers. This environment is expected to foster innovative new medical technologies through the integration of the medical and dental sciences, and science and engineering disciplines.



Developing doctoral students who lead innovation

We can apply engineering and medical science to create surgical robots, or science and medicine to develop new drugs. However, this integration is no longer limited to science and engineering, or the medical and dental sciences. The removal of boundaries that separated these scientific fields encourages free collaboration and unlimited integration across these fields.

Science Tokyo strives to actively develop and nurture doctoral students who will lead innovation. The Institute is leveraging its networks with industry to create a framework for developing doctoral graduates together with society. International perspectives and startup strategies are particularly important in terms of talent acquisition, and Science Tokyo is forming comprehensive partnership agreements with highly active universities outside Japan to promote exchange of students and researchers. The Institute is also formulating a system for supporting business startups by doctoral students, allowing them to freely come and go between labs and their startup companies. In the near future, Science Tokyo will see the birth of some amazing innovations.

Profile Tanaka completed the doctoral program at the Graduate School of Medicine, TMDU in 1985. He became a professor of the Department of General Medicine, TMDU Medical Hospital in 2001. He was appointed the president of TMDU in 2020. He assumed his current position in October 2024. Tanaka specializes in gastroenterology and medical education.

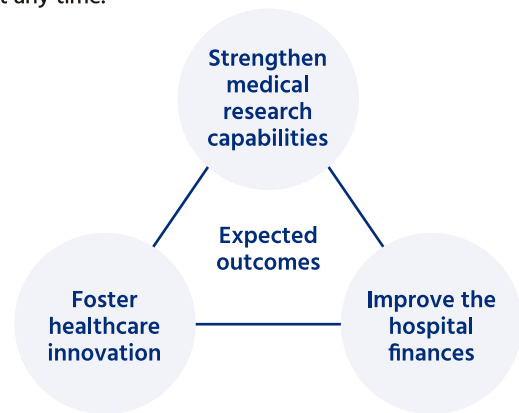
Cross-disciplinary synergy

..... Through a merger of medical, dental, and engineering sciences, Science Tokyo transforms the hospital into a research hub

—accelerating interdisciplinary collaboration in clinical settings and driving innovation in biomedical science to shape the future of healthcare.

About the Institute of Biomedical Engineering

The Institute of Biomedical Engineering (BME) provides a shared space where biomedical and engineering researchers can co-create from the initial stages of research projects. BME aims to generate synergistic outcomes through the integration and co-creation of medical and dental sciences, and the science and engineering. As a field for demonstration, co-creation, and dissemination, BME will promote innovation in medical technology by applying cutting-edge science and technology. It collaborates with research institutions and companies to implement research results in society. BME aims to realize a society where everyone can receive optimal medical and dental care at any time.



The launch of the Institute of Biomedical Engineering is expected to resolve the long-standing issue of insufficient medical research capabilities at Japanese universities. It's also anticipated to create groundbreaking innovations in the healthcare field, reduce labor costs, and improve the hospital finances.

Institute of Biomedical Engineering

Center for Brain Integration Research

Center for Stem Cell and Regenerative Medicine

Nucleotide and Peptide Drug Discovery Center

Oral Science Center

⋮

Science Tokyo Hospital

Department A
Department B
Department C
⋮

Co-creation between biomedical and engineering researchers in clinical settings



Collaboration with universities at the core of the global healthcare ecosystem

- Harvard University (Surgical Planning Lab)
- MIT (iMES: Institute for Medical-Engineering and Science)
- RWTH Aachen University (Strategic partnership)
- Imperial College London (White City Bio-Health Ecosystem)

Spotlight: Leading-edge biomedical-engineering synergies



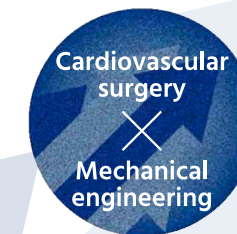
Small-data AI for early detection of oral cancer

In Japan, it is more challenging than in other foreign countries to collect big data due to the difficulty of collaboration among medical institutions. On the other hand, Japanese medical institutions acquire and hold a large volume of high-quality imaging data. Science Tokyo has developed a massive-training artificial neural network (MTANN), an AI technology capable of learning from small datasets. While its performance has already been validated through collaborative research with the National Cancer Center, Science Tokyo, which has the largest number of clinical cases of oral cancer, is now applying MTANN in the field of oral cancer.



Using magnetism for early detection of dysphagia and heart disease

Through collaborative research between biomedicine and engineering teams, the project team conducted a quantitative assessment of swallowing function using a magnetic test agent. This assessment enables the early detection of dysphagia. Furthermore, a high-sensitivity MR magnetic sensor array is used to enable the measurement of cardiac activity within the hospital to perform non-invasive testing for arrhythmias, as well as risk assessment and early detection of ischemic heart disease.



Development of next-generation ECMO equipped with artificial intelligence

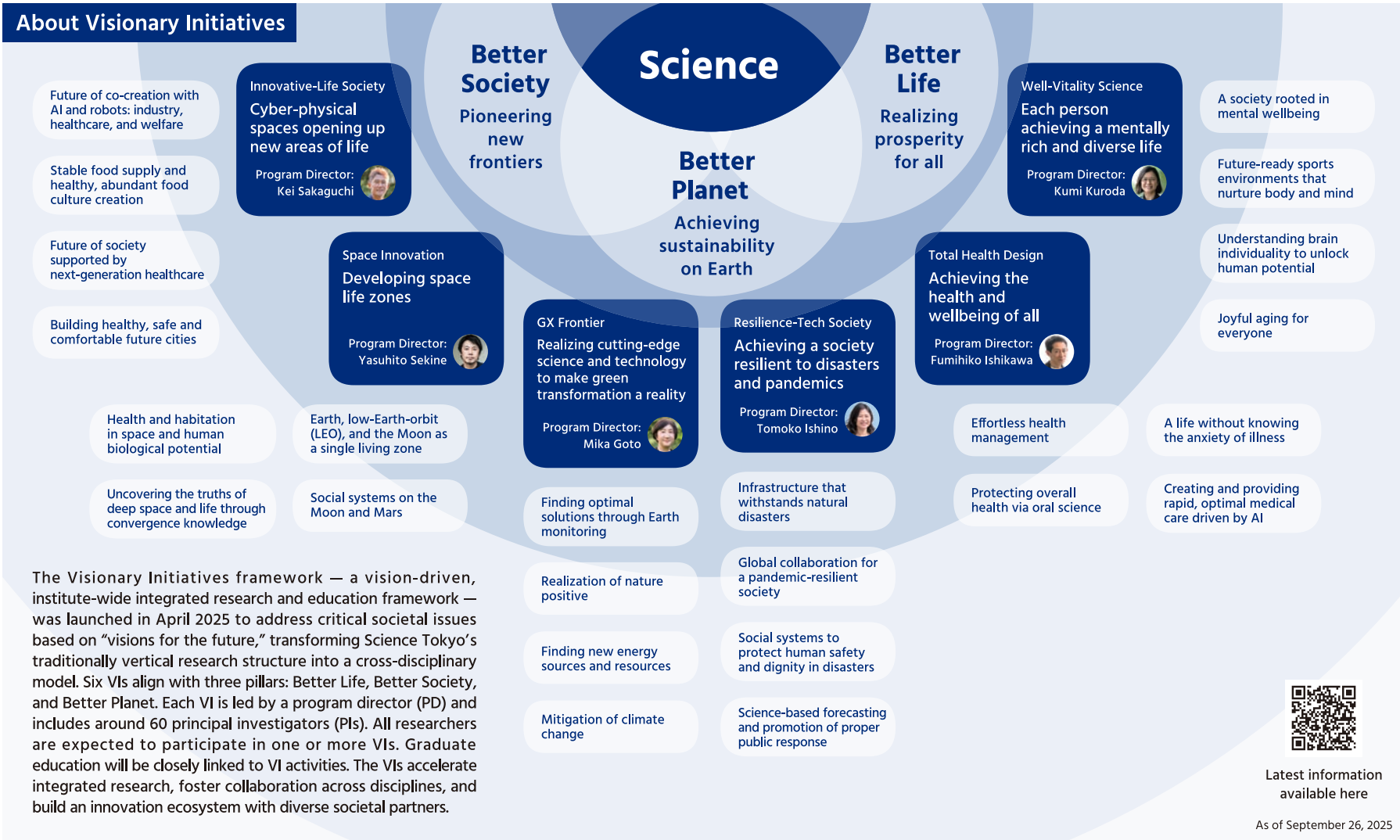
In response to the strong tendency toward thrombosis observed in patients with severe COVID-19 during the pandemic, the development of a next-generation extracorporeal membrane oxygenation (ECMO) system has been begun. This new ECMO incorporates technology to suppress thrombus formation within the circuit by introducing "pulsatile flow," as well as technology that uses artificial intelligence to estimate a patient's own cardiac function and automatically adjust support levels. It also features heart rate synchronization control to promote the recovery of the patient's own heart function.



Development of medical nanomachines for applications from disease detection to treatment

Smart medical nanomachines, which are nanoscale medical devices equipped with sensors, drugs, and other functions, autonomously patrol the microenvironments inside the body and perform in vivo detection, diagnosis, and treatment. This enables more advanced pathological diagnosis, highly sensitive detection of microcancers, and pinpoint treatment of diseased sites.





Messages from program directors



Innovative-Life Society
PD: Kei Sakaguchi

With the rapid advancement of AI, quantum science, and robotics, we stand on the threshold a new era—Super Smart Society. In this emerging society, physical and cyber spaces will merge, and collaboration between humans and AI/robots will generate unprecedented industries and new value. This Visionary Initiative outlines a bold vision of a future shaped by science and technology, spanning food, industry, cities, and healthcare. By working together with researchers and partners who resonate with this vision, we aim to co-create a future where: 1) Sustainable economic growth and innovation thrive, 2) A healthy, rich food culture is supported by stable supply, 3) Autonomous driving eliminates traffic accidents, and 4) Everyone can live an active 100-year life. Let us bring this future to life—together.



GX Frontier
PD: Mika Goto

My field of expertise is energy economics. To efficiently utilize clean and sufficient energy, we need technological innovation grounded in engineering and the natural sciences. At the same time, realizing the full societal benefit of these technologies depends on advancing research in economic and social systems. Science Tokyo is home to many researchers with proven excellence across these domains. Through our Visionary Initiative, we unite diverse expertise under a shared vision to pioneer the frontier of green transformation—building a society where people can live healthy, comfortable lives in harmony with the planet.



Total Health Design
PD: Fumihiko Ishikawa

Looking back over the past decade, science and technology have brought us convenient and rich lives. Yet, there are some diseases that we are still unable to defeat. As a physician-scientist specializing in leukemia, I believe and also have learned from my colleagues and collaborators that the key to developing curative treatments for such difficult-to-treat diseases lies in collaborative effort across disciplines and wish to save lives that are shared across generations. With the momentum of the Science Tokyo launch, we stand at the dawn of a new era. Here, we find a unique convergence of compassionate commitment to patients and the sharp expertise of professionals across fields. Under the Visionary Initiative “Total Health Design,” we are committed to achieving the health and well-being of all. Together, we will continue to move forward in pursuit of this vision.



Space Innovation
PD: Yasuhito Sekine

Since ancient times, humanity has sought to understand the universe to shape our worldview and ask who we are. Today, science explores the origins of the universe and the possibility of extraterrestrial life, while humanity begins expanding its presence to the Moon and Mars—a leap akin to life’s ancient move from sea to land. With the vision of “Space Innovation,” we aim to explore not only the technologies that answer how we can live in space, but also the deeper question of why humanity seeks to expand beyond Earth. What societies might emerge on the Moon and Mars? How might the discovering extraterrestrial life reshape our view of life? By leading innovation in space, we will return its value to people on Earth.



Resilience-Tech Society
PD: Tomoko Ishino

Each year, nearly 600,000 children around the world still lose their lives to malaria. The COVID-19 pandemic reminded us how easily microscopic pathogens can cross borders and disrupt our lives—and how difficult it is for individuals or even nations to face such threats alone. To respond to both current and future infectious diseases, we must work together globally to develop effective technologies and systems. Japan, a country prone to natural disasters, also has much to contribute. By applying lessons learned from past disaster damage, we can develop systems to minimize harm to lives and livelihoods—and share those insights with the world. This Visionary Initiative reflects a strong desire: to protect lives and everyday life on Earth from pandemics and natural disasters by nurturing basic research and strengthening collaboration across disciplines and borders. Together with society, we aim to turn that vision into reality.



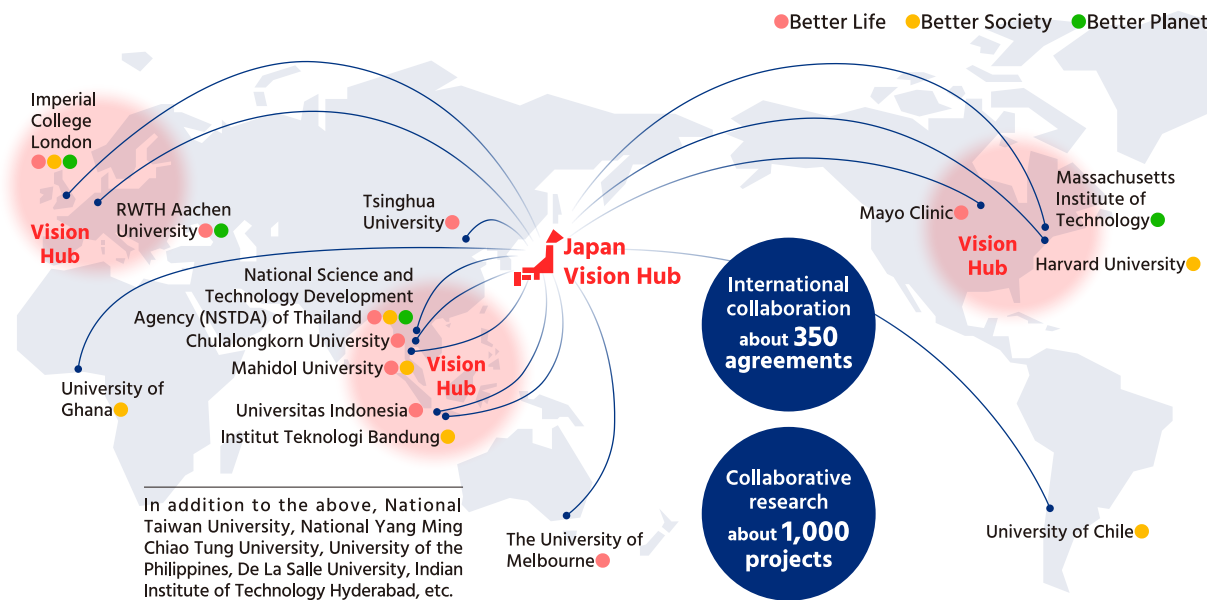
Well-Vitality Science
PD: Kumi Kuroda

Everyone begins life as a baby, growing up under family care. As we grow, we support one another in families, workplaces, and communities, and eventually grow old. To support diverse forms of fulfilling lives throughout these stages, researchers from various fields have come together under the Visionary Initiative “Well-vitality.” Their work spans diverse areas—from extending cognitive capacities in aging brains to creating advanced technologies that help even those less physically inclined enjoy sports and foster mental and physical well-being. My goal is to provide real-life childcare support through neuroscience and information technology. By bringing together these efforts, we aim to help realize the future envisioned by this initiative. Please look forward to what’s to come.

Global co-creation platforms

Science Tokyo has entered into over 350 agreements with universities and research institutions, promoting meaningful, multi-level exchanges among students, faculty, staff, and researchers. While ensuring responsible openness, the Institute takes the lead in creating ecosystems for a better, brighter future.

The Institute has signed a strategic partnership agreement with RWTH Aachen University in Germany and is building strategic relationships with MIT in the US and Imperial College London in the UK. In addition, by positioning partner universities—primarily in Asia—as hub institutions, the Institute promotes the circulation of people, knowledge, and funding through researcher recruitment, student exchange, industry-academia collaboration, and startup creation. Vision Hubs are also being established at global locations to address worldwide challenges and to foster international mobility and attract diverse talent.



● Record of research-oriented student exchange at major universities (past 5 years)
 Imperial: 33 students, RWTH Aachen: 40 students, MIT: 20 students, Harvard University (before COVID-19 suspension): 7 students per year

Global education as a foundation for co-creation: programs with Imperial College London

Science and Engineering Imperial-Science Tokyo Global Fellows Programme for doctoral students

Students develop leadership and communication skills through activities such as group discussions and field trips. The programme also aims to foster collaboration with researchers from diverse fields and to help students gain perspectives beyond their own areas of expertise.



Medical and Dental Sciences Intercalated Bachelor of Science programme

Students participate in systematic science education and discussions at a world-class university. Through an intensive year-long study abroad program, they perse a Bachelor of Science (BSc) degree at Imperial.



Domestic co-creation platforms

The Future Leading Innovation Partnership (FLIP)—comprising Ochanomizu University, Tokyo University of Foreign Studies, Science Tokyo, and Hitotsubashi University—brings together the wisdom of four universities. As a core platform for co-creation that connects knowledge from Tokyo to the world, FLIP contributes to the sustainable development of human society by nurturing future talent and deepening research.

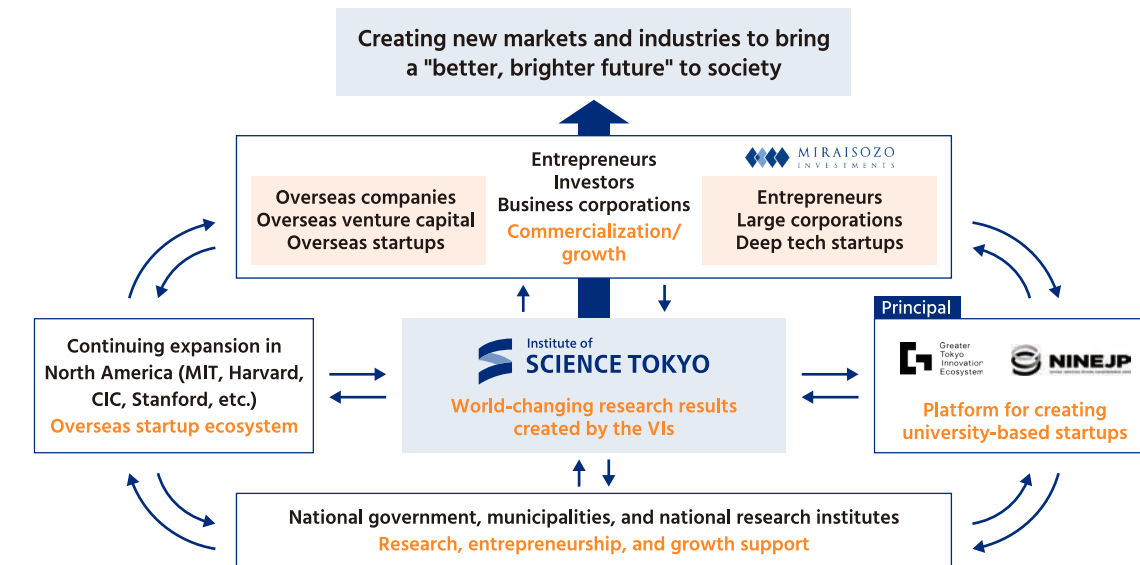
Strengthening collaboration with overseas universities

To bring the world-changing research outcomes generated by the Visionary Initiatives to society, new markets must be created in addition to existing markets.

Science Tokyo has led the Greater Tokyo Innovation Ecosystem (GTIE)—a university-based startup ecosystem in the Tokyo area—and the National Innovation Network for Entrepreneur Japan (NINEJP), which connects nine university-based startup ecosystems nationwide, thereby helping to build Japan’s startup ecosystem originating from universities.

Going forward, the Institute will connect these domestic ecosystems with overseas startup ecosystems and incorporate cutting-edge knowledge. It will also work to create opportunities for university-based startups to engage with overseas markets.

Startup ecosystem centered on Science Tokyo



Startup international collaboration

Strengthening collaboration with the Boston ecosystem

The Institute strengthens international collaboration with the Boston ecosystem, centered on MIT and Harvard University, which continuously drive innovation through startups.

with **MIT**

In addition to collaborating with the MIT System Design and Management program, Science Tokyo will invite Professor Michael Cusumano of the MIT Sloan School of Management as Co-Dean at the launch of the Innovation Design School.

with **Harvard University**

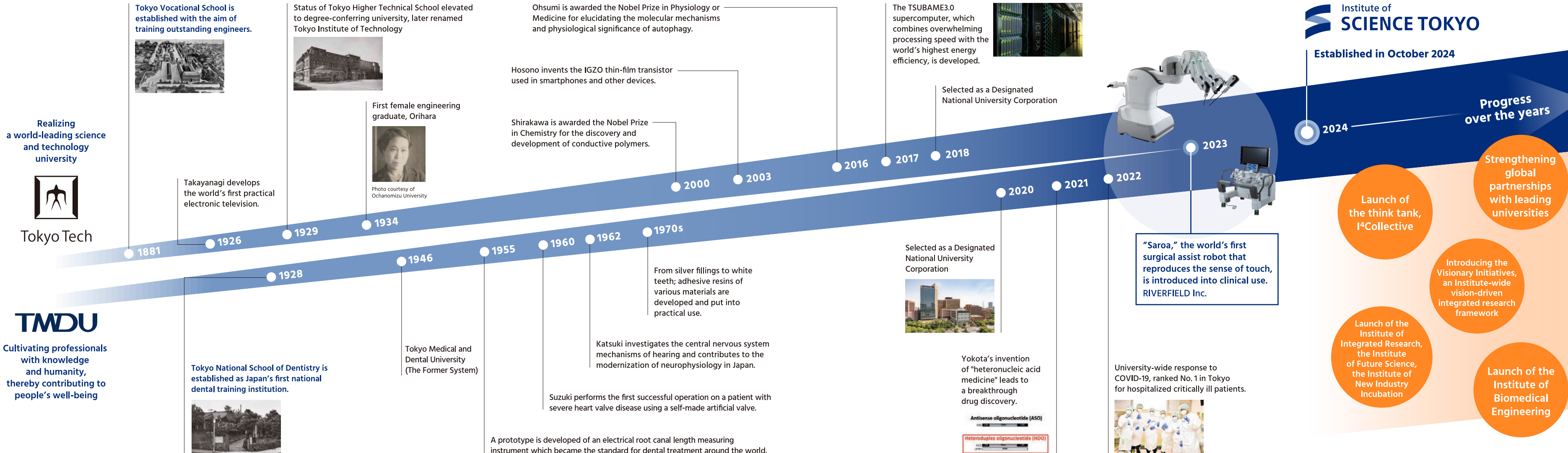
In addition to promoting a memorandum of understanding with the Harvard Tokyo Hub, Science Tokyo will initiate collaboration in the medical field in Tokyo and establish an environment for developing medical devices. The Institute will build an ecosystem through the Boston area network.

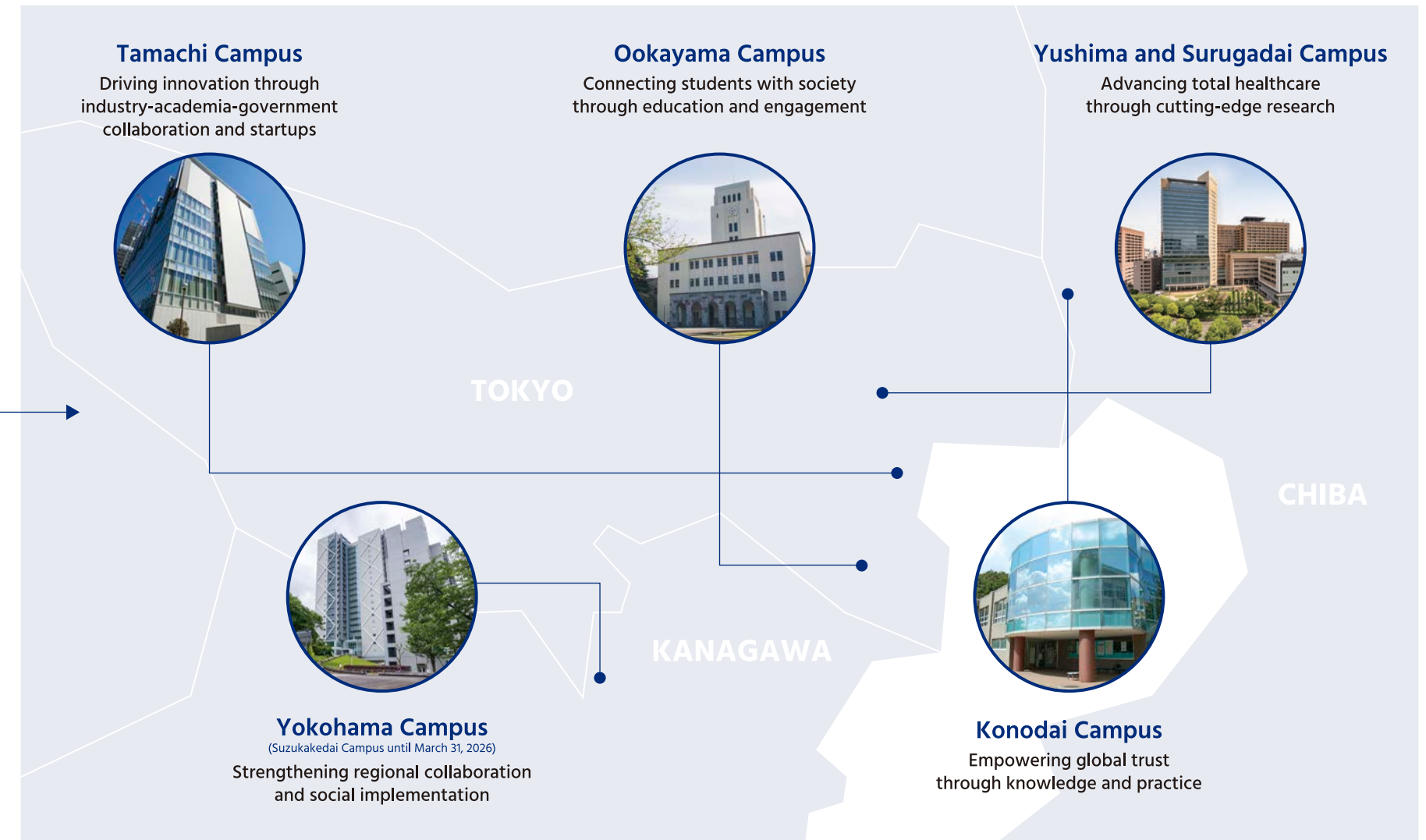
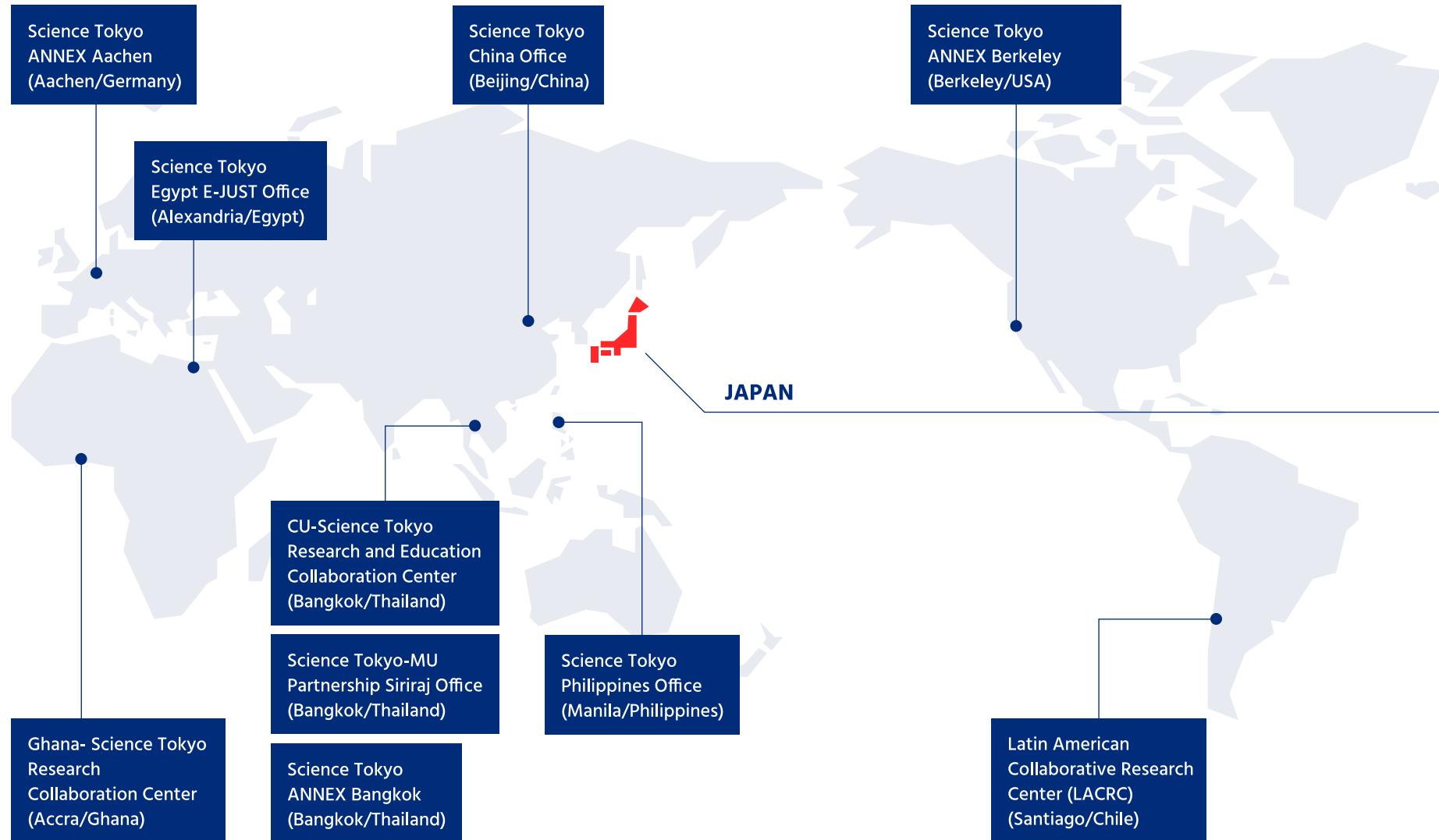
Message from Professor Cusumano, MIT Sloan School of Management

Science Tokyo and MIT share a common recognition of the importance of interdisciplinary collaboration. By combining strengths in science, engineering, and management, we can accelerate innovation, support deep-tech startups, and address global challenges. I look forward to expanding our partnership and building a dynamic ecosystem for transformative research and entrepreneurship.



Facts Merging scientific heritage for global impact Building on their rich scientific legacies, the two pioneering universities have united to establish a new global center of excellence in research and education.





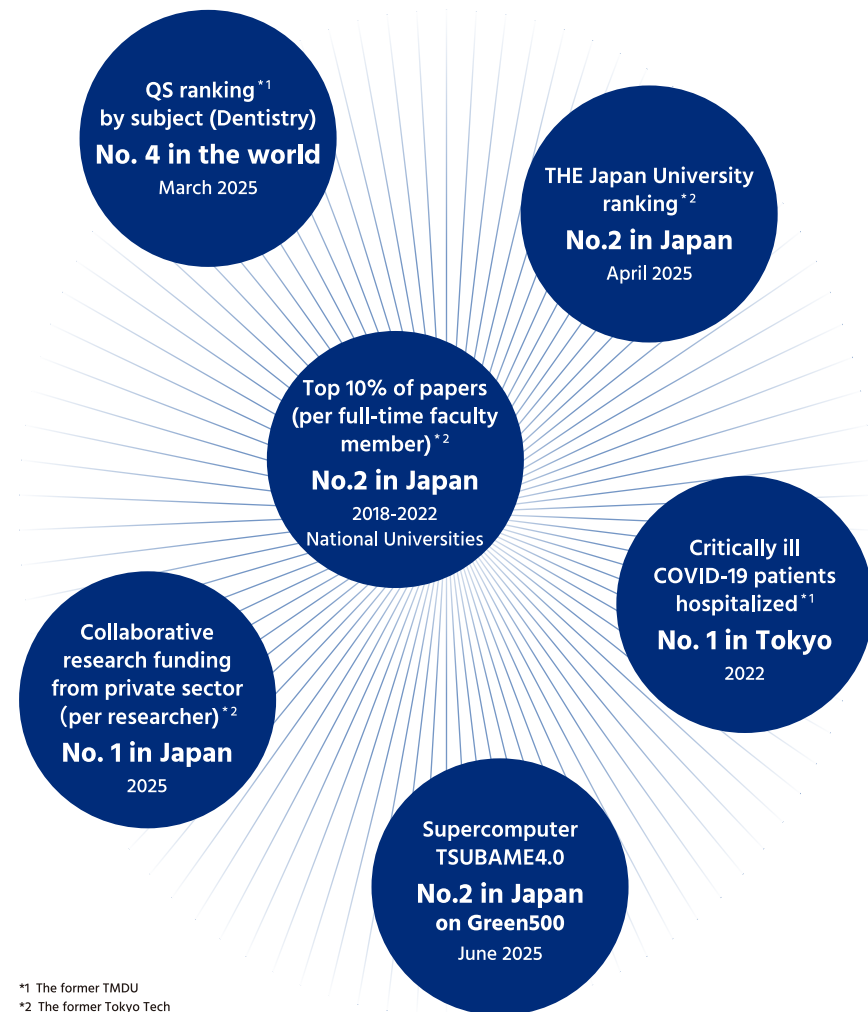
School of Science	Mathematics Physics Chemistry Earth and Planetary Sciences	Faculty of Medicine	School of Medicine School of Health Care Sciences (Track of Nursing Science / Track of Medical Technology)	Institute of Integrated Research	Promotes cutting-edge research and leading the world's academic network. Aims to solve the diverse social issues. <ul style="list-style-type: none"> • Pioneers innovative science and technology with the expertise from multiple disciplines. • Creates research results that can lead to the development of future industrial and medical infrastructure in response to social issues.
School of Engineering	Mechanical Engineering Systems and Control Engineering Electrical and Electronic Engineering Information and Communications Engineering Industrial Engineering and Economics	Faculty of Dentistry	School of Dentistry School of Oral Health Care Sciences (Track of Oral Health Care Sciences / Track of Oral Health Engineering)	Institute of Future Science	Develops interdisciplinary social impact research. Discovers novel issues, challenges their resolution, and presents a vision for the future to society. <ul style="list-style-type: none"> • Creates new research areas through initiatives, presents alternative visions for the future, the work towards their realization. • Explores solutions to social issues through the convergence of scientific knowledge.
School of Materials and Chemical Technology	Materials Science and Engineering Chemical Science and Engineering	Graduate School of Medical and Dental Sciences	Medical and Dental Sciences Biomedical Sciences and Engineering Health Sciences and Biomedical Engineering	Institute of New Industry Incubation	Builds an innovation ecosystem in collaboration with society that leads to the creation of new industries and the development of future human resources. <ul style="list-style-type: none"> • Conducts joint research with companies, and leads to the creation of new industries. • Develops doctoral-level human resources through research. • Builds and implements a new industry-academia collaboration model for innovation.
School of Computing	Mathematical and Computing Science Computer Science	Graduate School of Health Care Sciences	Nursing Innovation Science	Institute of Biomedical Engineering <small>(Launched in July 2025)</small>	Promotes advances in biomedical science achieved through problem-solving and innovation in medical technology developed through collaboration among clinical practitioners, biomedical and engineering researchers, and industrial labs. Realizes a society where everyone can receive optimal medical and dental care at any time. <ul style="list-style-type: none"> • Enables biomedical and engineering researchers to co-create in the same space from the initial stages of a research project. • Applies cutting-edge science and technology, such as quantum, AI, biomaterials, and semiconductors and communications. • Leverages the hospitals as a research hub, connecting research directly to social implementation.
School of Life Science and Technology	Life Science and Technology	Institute for Liberal Arts	—		
School of Environment and Society	Architecture and Building Engineering Civil and Environmental Engineering Transdisciplinary Science and Engineering Social and Human Sciences Innovation Science Technology and Innovation Management (Professional master's degree program)	Institute of Science Tokyo Hospital	Division of Clinical Medicine Division of Clinical Dentistry		
		Institute of Science Tokyo High School	Applied Chemistry / Information Systems / Mechanical Systems Engineering / Electrical and Electronics / Architectural Design		

About Science Tokyo

Staff / Students (as of May 1, 2025)			
Undergraduate students	Graduate students	Faculty	Staff
6,313	7,179	1,808	4,747
Research			
Papers published *1 (2024)	Grants for commissioned research (FY2024)	Grants-in-aid (FY2024)	Shared research equipment (as of July 17, 2025)
5,600	18.2 billion yen	7 billion yen	1,087
Industry-academia collaboration			
Joint research projects (FY2024)	Grants for collaborative research (FY2024)	University-launched ventures (FY2024)	Intellectual property income (FY2024)
1,025	4.8 billion yen	196	189 million yen
International engagement			
International students (as of May 1, 2025)	International faculty (as of May 1, 2025)	International co-authored papers *2 (2024)	International agreements (as of May 1, 2025)
2,091	106	1,989	358

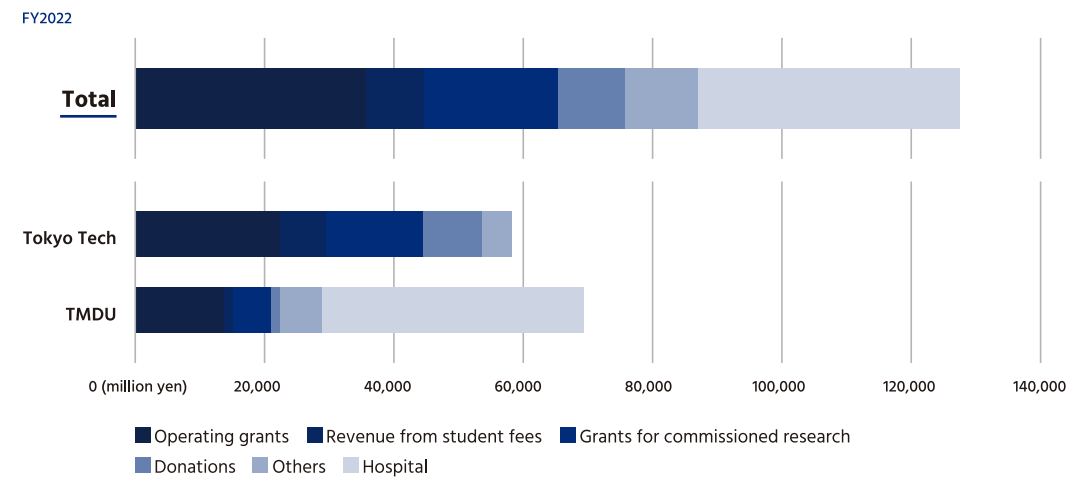
*1 (Source) SciVal: Data source: Scopus/Scholarly Output: 2024
 *2 (Source) SciVal: Data source: Scopus/International Collaboration: 2024

Key rankings

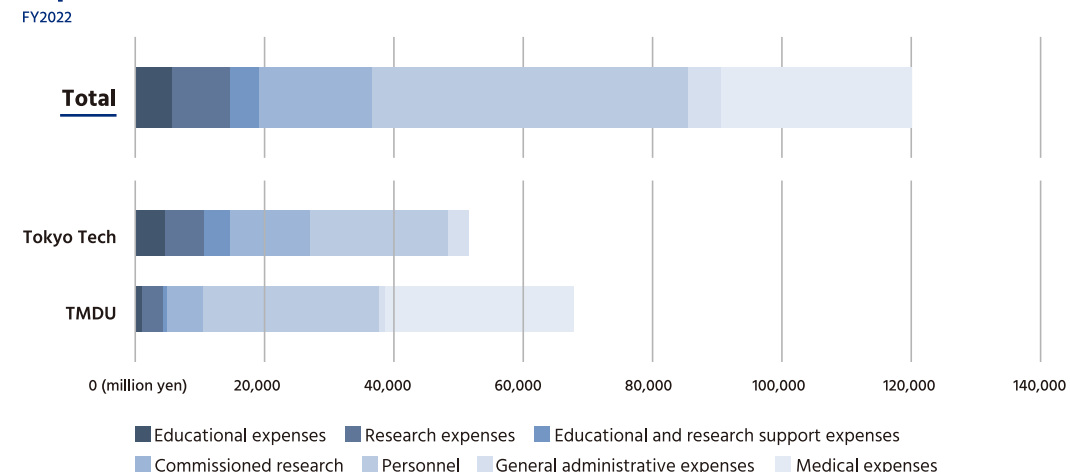


*1 The former TMDU
 *2 The former Tokyo Tech

Revenue



Expenditure



Institute of Science Tokyo Hospital: FY2024 highlights

Division of Clinical Medicine	
Number of beds	758
Total number of inpatients	243,428
Average number of days in hospital	10.8
Total number of outpatients	502,682
Average number of patients per day	(Outpatient) 2,068.7
Total number of surgeries	9,247
Division of Clinical Dentistry	
Number of beds	55
Total number of inpatients	12,429
Average number of days in hospital	5.7
Total number of outpatients	327,260
Average number of patients per day	(Outpatient) 1,346.8
Total number of surgeries	3,647

Facts **Harmony of diverse knowledge** Science Tokyo promotes the integration of diverse knowledge through mutual understanding and interaction among students from various fields. It nurtures future leaders with international awareness and broad perspectives.



Activities connecting students in science and engineering and medical and dental fields with each other and with society

On Ookayama Day, all new undergraduate students gather weekly from April to May at the Ookayama Campus to take part in special programs such as the Visionary Project. Through lectures and group work, students learn communication and presentation skills.

Science Tokyo also has distinctive student clubs, including the Science Tokyo Child Care Club, which organizes volunteer activities for children; the Science Tokyo Rowing Club, which won five titles in the Five Universities' Regatta; and "aile", which facilitates exchanges between students and peers of the same generation with severe physical and intellectual disabilities.



Diverse and inclusive campuses bringing together international students

The International Exchange Team of Science Tokyo's Peer Life Coaches conducts activities such as operating multilingual chats and the international student help desk, assisting with new student guidance, and organizing international exchange support events. In addition, Student Ambassadors on campus introduce student and research life in Japan to prospective students overseas through activities such as writing English blogs.

Science Tokyo also offers the Accessibility Leader Program, an on-demand program that fosters individuals who promote accessibility in a diverse society.

