It is approaching 20 years since the “Declaration on Science and the Use of Scientific Knowledge” was given at the World Conference on Science in Budapest, Hungary. To the existing concept of Science for Knowledge were added Science for Peace, Science for Development, and Science in Society and Science for Society - proclaimed as new scientific responsibilities for the 21st century. The declaration came amid fears we were struggling to maintain a healthy and sustainable society, the development of science and technology (S&T) bringing with it economic benefits but also various environmental problems. It was the first time that the social responsibilities of S&T had been clarified at a world conference.

In the spirit of the Budapest Declaration, our mission at JST is the realization of a sustainable society by promoting fundamental research in cutting-edge fields alongside research generating targeted social value. Since demands on S&T and the needs of society are becoming increasingly diverse, our objective under the “Hamaguchi Plan” has been to build JST into a network-type organization at the center of world-leading S&T innovations. This includes our JST-Mirai Program, linking government, academia and industry in high-risk, high-impact projects tackling the unique social and environmental challenges of this century.

The Hamaguchi Plan is now in its mid phase, our momentum taking us to exciting new places in S&T research. Yet we cannot achieve our goals alone. The World Conference on Science was attended by a community of around 1,800, politicians, journalists, scientists, engineers and other enthusiastic contributors. Likewise, we need a wide international network of S&T innovators in order to make a sustainable and livable society for all. We at JST look forward to working with our global partners in co-creating the kind of science-supported society first imagined with the Budapest Declaration.

JST plays a central role in Japan’s Science and Technology Basic Plan. Based on science and technology targets issued by the government we fund strategic basic research, academia-industry collaboration and technology transfer, and in recent years promote international joint research and the fostering of next generation human resources. JST also provides information services supporting R&D activities. Our comprehensive contribution stimulates real progress in science and technology and helps tackle a variety of social issues.

We continue to strengthen our close relationships with universities, research institutes and industry inside and outside Japan, create collaborative science and technology innovation and ensure the sustainable development of our society.

* The Science and Technology Basic Plan, based on the Science and Technology Basic Law enacted in November 1995, aims to comprehensively and systematically advance Japan’s science and technology policy. The government formulates the basic plan based on forecasts for the next decade, putting into effect science and technology policies over a 5-year period.
Funding Programs

Strategic Basic Research

High Impact R&D Toward the Future Society

This program promotes research and development from a basic research stage to a stage where industry can decide whether they could make a business success (proof of concept: POC). To achieve it, we set goals focusing on clear targets which realize economic and social impact and challenge technological difficulties.

Creation of New Technology Seeds by Strategic Basic Research Programs

Strategic Basic Research Programs (SBRPs) are intended to advance basic research aimed at achieving solutions for key issues Japan is facing, and to produce the seeds of creative, innovative technologies from new scientific knowledge that gives rise to innovation in science and technology leading to social and economic change. As such, the SBRPs seek to build research institutes (time limited research organizations spanning organizational boundaries) consisting of networks of researchers at universities, companies, and public research institutions. Researchers pursue their work, while building networks of other researchers, industrial concerns that will benefit from the fruits of research work, and interested parties in society at large, under the leadership of a Program Officer (Research Supervisor, etc.) performing the role of the institute director.


Concepts for International Collaboration

The programs contribute to the achievement of the Strategic Objectives set by the Ministry of Education, Culture, Sports, Science and Technology. Therefore, while paying attention to securing national interests including appropriate protection and utilization of intellectual property, we are promoting internationalization as a means of maximizing output of the programs.

Achievements of International Joint Research

The SBRPs often organize joint workshops in collaboration with overseas funding agencies or research institutes to promote international joint research and networking.

For example, Research Area on “Energy Management System (EMS)” organized total of six joint workshops with NSF (U.S.), ICN (Norway), and/or DFG (Germany). Participations of prominent researchers of respective countries nominated by funding agencies made workshops attractive as excellent opportunities for fostering new international collaborations. In fact, many new research ideas came out among the participants turned real joint projects later and produced joint publications.

Establishing induced pluripotent stem (iPS) cells

Dr. Shinya Yamanaka started his research project for the theme “Generation of Ideal Pluripotent Stem Cells for Clinical Applications” under the Strategic Basic Research Programs in 2003. The professor took an approach completely different from ES cells promoted research aimed at establishing stem cells. The professor succeeded in establishing iPS cells from mouse skin cells in 2006 and from human skin cells in 2007 ahead of his international contemporaries. The result which had surprised the world earned him a 2012 Nobel Prize.

Facts & Figures

Research Articles in 2018

5,910

Number of Citations for a Paper in 2018

15.63

*Aggregated data based on Scopus, targeting for papers published in the past 5 years

7.02 (Average of Japan)
**Funding Programs**

**International Collaborations**

Our Department of International Affairs is committed to expanding the range of collaboration opportunities for our researchers, so ensuring continuous joint innovation and contribution to global challenges.

**Global Joint Research and S&T Diplomacy**

In our world of rapidly expanding globalization, various cross-border problems are arising. For example, problems associated with the environment, energy, natural disasters, and infectious diseases cannot be tackled by any single country alone. To overcome these problems and maintain sustainable development, international cooperation is now a worldwide endeavor. Moreover, the advance of science and technology around the world is spectacular. Amid intense competition, for Japan to sustain and continue to develop its world-class science and technology capabilities, it is more important than ever before for the government to play its role in strategically supporting the international expansion of science and technology.

JST aims to contribute solutions to challenges facing the world today through collaboration with a broad range of countries.

**Research Partnership for Sustainable Development**

SATREPS is part of Japan’s “Science and Technology Diplomacy”, collaboratively pursued by JST, which provides competitive research funds for the science and technology sector, and the Japan International Cooperation Agency (JICA), which provides Official Development Assistance (ODA). The program promotes international joint research based on the needs of developing countries in fields such as environment, energy, biological resources and disaster prevention, with the ultimate aim of social implementation of research outcomes in the foreseeable future. The program supports international cooperation and the acquisition of new knowledge to tackle global issues, advance science and technology, and create innovations. The program also contributes to capacity development of Japan and its partner countries.

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1. Social implementation of research outcomes: the research projects should lead to future social and economic benefits, achieved by using newly obtained knowledge and technology to enhance government services or develop products that can be deployed in the market.

2. Global issues: those that are difficult to resolve by a single country or region alone and must be handled by the international community as a whole.

3. Capacity development: boosting self-reliant R&D capacity in developing countries, constructing sustainable research systems that can contribute to resolving issues, coordinating networking between researchers, and training future human resources in partner countries and Japan.

**Facts & Figures**

- **Projects with 50 Countries and Regions since 2008**
- **Projects with 40 Countries and Regions since 2003**

For further information: [https://www.jst.go.jp/global/english/index.html](https://www.jst.go.jp/global/english/index.html)

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**Representative programs** include SATREPS, SATREPS, e-ASIA, EIG-CONCERT-Japan, Bilateral Collaboration Program etc.

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**Number of international research projects and its collaborating countries**

- **135** Projects with 50 Countries and Regions since 2008
- **555** Projects with 40 Countries and Regions since 2003

under the partnership between counterpart countries of official development assistance (ODA) and Japan, based on the sustainable development needs of developing countries.
Funding Programs

Industry—Academia Collaboration and Technology Transfer

Returning the research results of universities and research institutes to industry and society, and creating an environment for them to continuously generate innovation. In addition, we contribute to the establishment of a virtuous cycle system of human resources, knowledge and funds for the practical application of seeds.

R&D Support

- **Support for Formulation of Innovation Platforms**: Aiming to create an environment where research results are bridged to companies that generate innovation and where diverse challenges occur continuously, we bring together the human resources, knowledge and funds of industry, academia and government and support the formation of co-created fields.

- **Promotion for Technology Transfer and Support for University Start-ups**: We support R&D for the practical application of technology seeds that can be the sprouts of new industries and the creation of venture companies that can take quick and bold challenges. In addition, we invest in venture companies that put the R&D results of institutes to practical use.

Intellectual Property and Matching Supports

By comprehensively supporting universities’ intellectual property management and funding operations, we contribute to the creation of innovation through utilization of intellectual property such as licensing and joint research and promote the increase of private investment. In addition, we offer industry-academia matching opportunities and nurture technology transfer personnel. We contribute to the development of academia-industry collaboration and technology transfer activities.

- **Budget for Industry-Academia Collaboration Programs**

  Representative programs include COI, OPERA Research Complex, iHub, A-STEP, START, SUCCESS, etc.

For further information: [https://www.jst.go.jp/EN/programs/index.html](https://www.jst.go.jp/EN/programs/index.html)

Facts & Figures

- **12.9 billion (JPY)** Provided by Private Sector for Industry-Academia Collaboration

- **1.1 billion (JPY)** Royalty Income from Patents owned by JST

R&D Support

- **Support for Formulation of Innovation Platforms**
  - Center of Innovation (COI) Program
  - Program on Open Innovation Platform with Enterprises, Research Institute and Academia (OPERA)
  - Research Complex Program
  - Support Program for Starting up Innovation Hub (Hub)

- **Promotion for Technology Transfer**
  - Adaptable and Seamless Technology Transfer Program through Target-Driven R&D (A-STEP)
  - Development of Advanced Measurement and Analysis Systems
  - Newly extended Technology transfer Program (NextEP)

- **Support for University Start-ups**
  - Project for Creating Start-ups from Advanced Research and Technology (START)
  - Support program of Capital Contribution to Early-Stage companies (SUCCESS)

Intellectual Property Utilization Support Program

Converting Research Output to IP

JST supports the acquisition of foreign patents by universities for applications for patents with a high likelihood of technology transfer activities or patent utilization in the future. JST provides comprehensive support for PCT applications and transfers to designated countries, including assistance with expenses and expert opinions from JST intellectual property specialists.

Licensing

In order to facilitate commercialization of the research output originating from universities, public research institutions and JST programs, JST undertakes licensing activities.

Supporting intellectual property management for R&D

By involving intellectual property management personnel in JST’s R&D operations we can properly patent and plan the implementation of research results, leading to swifter commercialization.

Innovation JAPAN

To provide opportunities for matching high-quality technology seeds with the needs of industry, JST organizes a national-scale university knowledge fair named “INNOVATION JAPAN: University Exhibition Fairs”
Public Engagement

Promotion of “Science in/for Society”

JST promotes activities such as constructive discussions involving various stakeholders, in order to support the co-creation of policy-making and novel solutions to societal challenges using Science, Technology and Innovation (STI).

Promotion of co-creation with various sectors

In association with six partner organizations, JST launched the “CHANCE” Initiative, an open platform for co-designing future society through open discussions. Through this network, JST aims to reflect social needs in R&D and create social innovation.

New! “STI for SDGs” Award

JST assigns the “STI for SDGs” Award to activities in a region which solve societal challenges with the outcomes of Science, Technology and Innovation (STI). Through the award JST aims to contribute to the attainment of the SDGs, support and accelerate these award-winning activities, and spread good practices to other regions.

Fostering the Next Generation Human Resources

This program promotes students’ interest and ability in science, technology, and mathematics and fosters future scientists and engineers at international levels.

As the part of this program, International Science Olympiads are continuously going to be held in Japan from 2020 the International Biology Olympiad, 2021 the International Chemistry Olympiad, 2022 the International Physics Olympiad, and 2023 the International Mathematics Olympiad.

Miraikan - The National Museum of Emerging Science and Innovation

Miraikan is a place where we can understand the things happening in our world today from a scientific point of view, and have discussions while considering the future that awaits us. In addition to exhibitions that provide people with a chance to enjoy hands-on contact with science and technology, Miraikan’s colorful line-up of offerings includes experienced based classes, and talks. Visitors can experience the technological progress of today, from simple day-to-day questions, to the latest technologies, the global environment, space exploration and life science.

https://www.miraikan.jst.go.jp/en/

R&D Strategy Planning

Center for Research and Development Strategy (CRDS)

CRDS aims to serve as a public think tank, by providing analyses of domestic and international trends in science and technology and proposals for policy-making in our country.

We follow, overview and analyze the trends in the society and STI (science, technology and innovation) policies in Japan and abroad, extract issues to be tackled and formulate R&D and/or policy strategies. We strongly interact with public, academic and private sectors and other stakeholders in the society in order to bring the strategies into reality. https://www.jst.go.jp/crds/en/index.html

China Research and Sakura Science Center (CRSC)

The primary missions of the China Research and Sakura Science Center (CRSC) are to build up a powerful network in Japan and China of people and information in the fields of science and technology and education, and contribute to the creation of innovation in both countries. CRSC also works to resolve common issues such as the environment, energy, the aging of society with a declining fertility rate, and resources and food problems.

Center for Low Carbon Society Strategy (LCS)

LCS proposes social scenarios and strategies toward realizing “affluent low carbon society.” In response to the Paris Agreement, effective in 2016, science and technology based “affluent low carbon society,” which brings about sustainable economic and social development as well as CO2 emission reductions in Japan, should be realized. LCS draws up the vision of such a desirable society and proposes social scenarios and strategies that show pathways to the society through LCS’s social scenario research. https://www.jst.go.jp/lcs/en/index.html
**Information Platform and Database Service**

**Japan Information Platform for S&T**

JST provides information services supporting R&D activities. JST collects and organizes information on research articles, researchers, patents etc., and develops an infrastructure for providing access to the information. JST is also involved with Open Science activities aligned with the international trend.

**Promotion of Open Science**

JST has pioneered the implementation of the Open Science policies in Japan: An Open Access policy in 2013, a Data Management policy in 2016, and an Open Science policy in 2017. JST is also involved with Open Science activities both nationally and internationally in cooperation with other institutions. JST recently organized the Japan Open Science Summit with NIL, NIMS, NISTEP, NICET, Re:poN, and has developed a global network with the Research Data Alliance, CHORUS, GLOALL, and others.

**J-STAGE**

J-STAGE is an electronic journal platform for Japanese learned societies providing access to 4.8 million articles of more than 2,800 titles in the fields of medicine, life sciences, engineering, basic sciences, humanities and social sciences. Approximately 90% of the full-text articles are available for free.

https://www.jstage.jst.go.jp/browse/char/en

**JaLC**

JaLC is a DOI Registration Agency (RA), officially authorized by the International DOI Foundation in March 2012 and the only organization providing DOI services in Japan. JaLC provides services assigning DOI to various digital contents including academic papers, books, research data etc. and managing the contents’ information. By collecting data about academic content published in Japan, JaLC contributes not only to dissemination and use of the content domestically but also to expanding Japan’s presence in the international academic community by providing global access to research results.

https://japanlinkcenter.org/top/english.html

**National Bioscience Database Center (NBDC)**

NBDC promotes the integrated use of life science database resources and provides a database portal website, with an aim to maximize the value of research data. NBDC aims to promote the widespread sharing of results of life science research across the researcher community, enabling researchers to pursue their research effectively and efficiently.

**Latest News**

**Moonshot Research and Development is about to begin.**

**Outline of Moonshot Research and Development**

With Moonshot Research and Development, the Japan Science and Technology Agency (JST) is driving high risk, high impact R&D towards ambitious and attractive targets (Moonshot targets) to solve issues facing future society. In addition, Moonshot Research and Development is based on R&D concepts set by Japan’s Ministry of Education, Culture, Sports, Science and Technology (MEXT) to achieve Moonshot targets.


**Science, Technology and Innovation for the Sustainable Development Goals (STI for SDGs)**

In order for science and technology innovation to contribute to the SDGs (STI for SDGs), various stakeholders from universities, R&D institutes, NGOs and the private sector should work with policymakers and the market to create shared value and a new social trend of responsibility. The “Office of STI for SDGs” plans basic policies on STI for SDGs at JST, cooperates with related organizations inside and outside Japan, distributes relevant information worldwide, and holds events to strengthen cooperation with a range of stakeholders. JST will throughout its organization contribute to achieving the SDGs with a wide range of functions including think tank, R&D funding, academia-industry collaboration, next-generation human resource development, and science communication.

**JST’s STI for SDG activities**

Please visit our website to learn more about activities including our strategy on STI for SDGs and research outcomes.

Science, Technology and Innovation for the Sustainable Development Goals (STI for SDGs):


JST Channel:

https://www.youtube.com/playlist?list=PLvA0BcCz14u7hW8XRJAM0xuJlULwD8G

Example of research outcome.

Three pillars of JST’s strategy on STI for SDGs.
Overseas Branch Offices

The JST overseas offices are strategically located to capture the latest science and technology trends in their respective regions, actively promote the global activities of JST-funded Japanese researchers and leverage global networks to enhance and internationalize Japan’s S&T.

Paris Office  (Established in 1984)

Address
48, rue de Bern, Paris, 75008, France
Tel. +33-5-3935-8383, Fax. +33-1-5395-3881
https://www.jst.go.jp/inter/paris/index.html

We are JST’s first-established overseas office, responsible for a wide range of countries within Europe and Africa. We negotiate and coordinate with relevant organizations and support the growth of JST’s European operations, where science cooperation is often multi-layered and complex. We also play a vital role in transmitting local information back to JST headquarters, and are actively expanding our network of related organizations in order to improve Japan’s S&T presence in Europe.

Beijing Office  (Established in 2002)

Address
Beijing Fortune Bldg., No. 5, Sheng Tai Huan Bei Lu, Chaoyang District, Beijing, 100004 China
Tel. +86-10-6590-8273, Fax. +86-10-6590-8270
https://www.jst.go.jp/inter/beijing/index.htm

The Beijing office communicates with Chinese government agencies in the coordination of international joint research proposals, and supports activities such as the Japan-China University Fair & Forum. We run the website “Objective Japan”, providing information about Japan in Chinese language, and cooperate to hold the China-Japan Science and Technology Forum. We are also working to enhance JST’s presence by participating in local government events.

Washington, DC Office  (Established in 2004)

Address
2001 L Street NW, Suite 1050, Washington, D.C. 20036 U.S.A.
Tel. +1-202-728-0007, Fax. +1-202-728-0707
https://www.jst.go.jp/inter/washington/index.html

At the Washington, DC office our mission is to strengthen scientific cooperation between JST and our counterpart organizations, scientists and researchers in the United States, as well as to study and analyze local STI policies and R&D trends. We also support various scientific collaborative arrangements with other countries in the Americas. Our office plays a key role when the JST president and contingent visit the US for important events such as the AAAS annual meeting.

Singapore Office  (Established in 2009)

Address
11 Biopolis Way, #07-12 Helios, Singapore 138667
Tel. +65-6478-9707, Fax. +65-6478-9708
https://www.jst.go.jp/inter/singapore/index.html

South and Southeast Asia, home to more than 2 billion people, have achieved remarkable growth in recent years. Located among areas of diverse culture and history, the Singapore office strives to connect Japanese universities, research institutes and companies with these areas for the promotion of JST’s operations in Asia. We are actively promoting student exchange program Sakura Science in addition to collaborative research programs offered by JST including e-ASIA, SATREPS, and CHIRP.

October 2018 : October 2018, JST and the European Commission’s DG Research and Innovation signed an Implementing Arrangement for research exchange between JST and the European Research Council (ERC). We are creating collaboration opportunities between top researchers in Japan and Europe.

October 2018 : October 2018, in collaboration with the China Science and Technology Association (CAST), JST held a China-Japan Science and Technology Forum on the theme of ICT solutions to an aging society. The forum was held in cooperation with the local government and several academic institutions, and attracted a large number of visitors including Japanese government officials and JST project participants as well as academia and industry representatives. The impressive presentations and booths made it a very successful event.

January 2019 : January 2019, JST president Dr. Hamaguchi visited with the US DOE Under Secretary for Science Mr. Dabbar and exchanged opinions on areas of common interest and possibilities for future collaboration. February 2019, Dr. Hamaguchi met with NSF director Dr. Córdova to discuss potential collaboration based on the recently signed Memorandum of Cooperation. March 2019, we participated once again in the annual National Cherry Blossom Festival, holding a joint booth about the Sakura Science exchange program and other JST activities.

May 2019 : May 2019, we held a workshop and mid-term evaluation meeting for our international collaborative projects at India’s IIT Hyderabad lab, with both Japanese and Indian PIs participating to present their research results. The event was a valuable opportunity to explore the possibility of collaboration with the SATREPS research for development program. May 2019, we held a briefing session for 10 Singaporean middle-school students scheduled to visit Japan in June 2019 through Sakura Science.