

Strategic Basic Research Programs (SBRPs) - overview and international collaborations

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科学技術振興機構

About Strategic Basic Research Programs (SBRPs)

The Strategic Basic Research Programs promote challenges in basic research to overcome the problems facing our country and produce creative and innovative technology seeds based on new scientific knowledge that will lead to scientific and technological innovations to transform society and the economy.

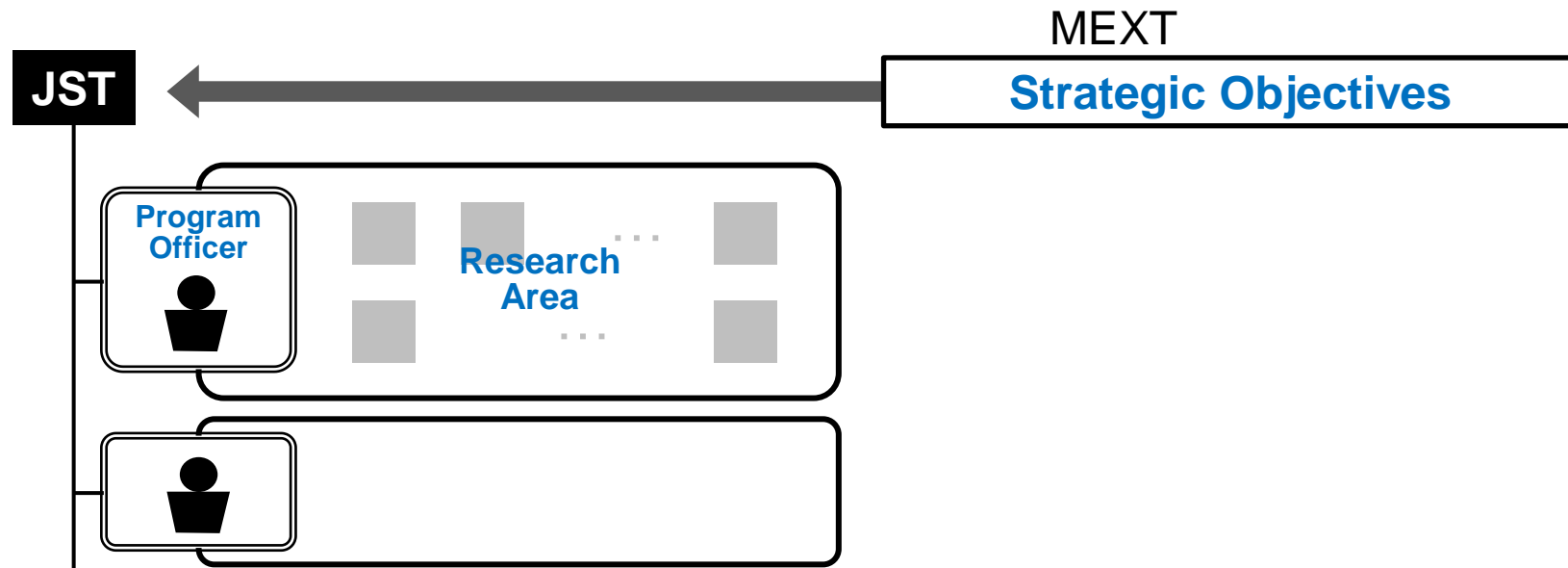
Annual budget of SBRPs : 42 billion JPY (approx. 390 million USD)

※1USD=106JPY

cf. Total annual budget of JST is about 142 billion JPY.

Strategic Objectives and Research Areas

- Ministry of Education , Culture, Sports, Science & Technology Japan (MEXT) sets up **Strategic Objectives** every year
 - To create the seeds of innovative technologies that influence future society and economy
 - Based on the science and technology policies of Japan, and social and economic needs
- JST designs **Research Areas** and designates **Program Officers** to achieve each Strategic Objectives.



System of the Programs

Strategic Objectives designated by the Government (MEXT)



Development and Operation of Virtual Networking Research Institutes

- Establishment of Research Areas and Program Officers (Research Supervisors, etc.) best suited for achieving Strategic Objectives
- Identification of researchers with exceptional pioneering qualities and originality, based on the Program Officers' judgment
- Flexible, dynamic decision-making on research plans and research funding allocation in accordance with research progress achieved and other factors.

<Research Programs>



Towards the Creation of Innovation in Science and Technology

Programs Description

Research Type				
Who proceeds the project	Research Team	Individual Researcher	Individual Researcher	Research team led by Outstanding Research Leader
Total Budget	150 Million Yen - 500 Million Yen	30 Million Yen - 40 Million Yen	a few Million Yen as standard	About 1.2 Billion Yen
Research Period	No longer than 5.5 years	No longer than 3.5 years.	2 year and 6 months (Acceleration Phase : Up to 1 years)	No longer than 5.5 years

Core Research for Evolutional Science and Technology

Team-type research to produce excellent achievements leading to scientific and technological innovation

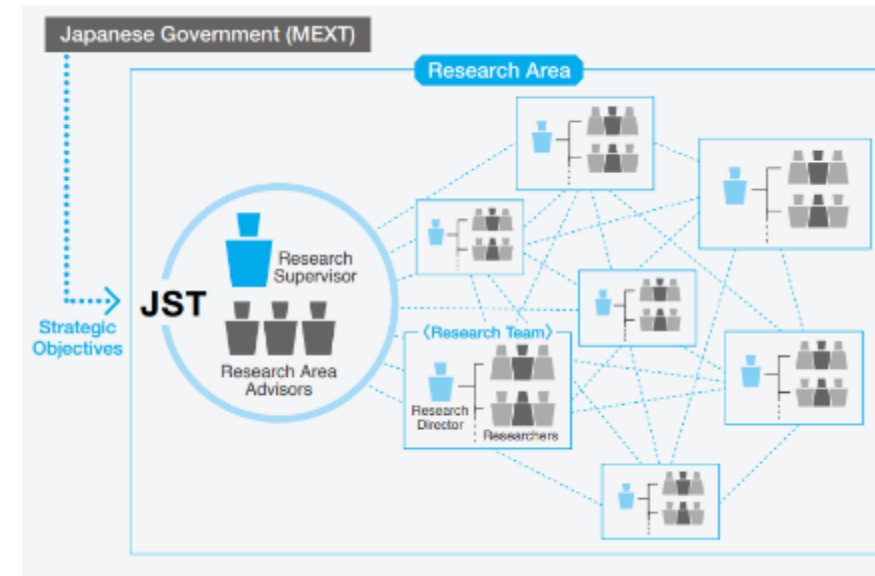
➤ Objectives

The purpose of CREST is promoting unique, internationally high-level basic research to address the important problems facing our country and to produce creative, conspicuous, and innovative technology seeds based on new scientific knowledge

that contributes to scientific and technological innovation that can transform the society and economy.

➤ Features

- Virtual networking institute by Program Officer's management
- Research Director's strong leadership
- Networking for future innovation



Total Budget	Research Period
150-500 million JPY	5 years and 6 months or less

Direct expenses

CREST Research Areas (examples)

Research Area	Research Supervisor	Year Started
[Cell Dynamics]Spatiotemporal dynamics of intracellular components	Toshiya Endo (Kyoto Sangyo University)	2020
[Precise arrangement toward functionality]Precise arrangement towards the functionality of molecular systems	Nobuo Kimizuka (Kyusyu University)	2020
[Information Carriers]Integrated Devices and Systems Utilized by Information Carriers	Toshiro Hiramoto (The University of Tokyo)	2020
[Trusted quality AI systems]Core technologies for trusted quality AI systems	Akiko Aizawa (National Institute of Informatics)	2020
Creation of a technological foundation that contributes to coexistence with infectious diseases such as the new coronavirus by fusion of different research fields	Aikichi Iwamoto (Japan Agency for Medical Research and Development)	2020

Precursory Research for Embryonic Science and Technology

Individual-type research to develop the sources of scientific and technological innovation

➤ Objectives

The purpose of PRESTO is promoting unique and challenging, internationally high-level basic research to address the important problems facing our country and to produce creative and innovative technology seeds based on new scientific knowledge as a source of scientific and technological innovation that can transform society and the economy.

➤ Features

- Strong support by Program Officer, advisors and JST staff
- Inter-disciplinary networking through research area meetings
- Life event support
- Independent researchers able to apply



Total Budget	Research Period
30-40 million JPY	3 years and 6 months or less

Direct expenses

➤ Research Area Meeting

- 2~3 days closed meeting, 2 times/year
- Research Supervisor, Advisors and researchers
- Discuss research plan & promote communication among researchers



➤ Site Visit

- Research Supervisor visits researcher's lab
- Get agreement from researcher's supervisor to let him/her to conduct independent research

➤ Support Scheme

- Supervisor, Advisors and JST support office work together
- Support from research progress, budget execution to press release & patent application

PRESTO Research Areas (examples)

Research Area	Research Supervisor	Year Started
[Plant molecules]Function and regulation of plant molecules	Kazuhiko Nishitani (Kanagawa University)	2020
[Supra-assembly of biomolecule]Dynamic supra-assembly of biomolecular systems	Hiroyuki Noji (The University of Tokyo)	2020
[Precise Molecular Arrangement]Precise Arrangement of Atoms and Molecules and Its Properties and Functions	Hiroshi Nishihara (Tokyo University of Science)	2020
[Information Carriers]Information Carriers and Their Integrated Materials/Devices/Systems	Hitoshi Wakabayashi (Tokyo Institute of Technology)	2020
[Trustworthy AI]The fundamental technologies for Trustworthy AI	Hiroki Arimura (Hokkaido University)	2020

Individual-type research that supports "the establishment of an individual,"
i.e., young researchers with unique and challenging ideas

➤ Objectives

The purpose of ACT-X is finding and developing superior young researchers to address important problems facing our country. Under the management principles of the Research Area defined by the Research Supervisor, we find researchers who have challenging ideas and support their research aimed at creating new value that leads to scientific and technological innovation.

➤ Features

- Young researchers (Less than 8 years after achieving a Doctoral degree, including graduate students)
- Acceleration phase system (2 years and 6 months + Acceleration Phase 1 year)
- Supported with Advisor Assignment System

➤ On going Research Areas

Research Area	First Year	Projects
Life and Chemistry	2019	30
Frontier of mathematics and information science	2019	21

Total Budget	Research Period
Several million JPY*	3 years and 6 months

Direct expenses

Including acceleration phase

*In the acceleration phase, maximum research funds of approximately 10 million JPY / year

ACT-X Research Areas(examples)

Research Area	Research Supervisor	Year Started
Environments and Biotechnology	Nobuhiko Nomura (University of Tsukuba)	2020
AI powered Research Innovation / Creation	Yasuo Kuniyoshi (The University of Tokyo)	2020

Exploratory Research for Advanced Technology

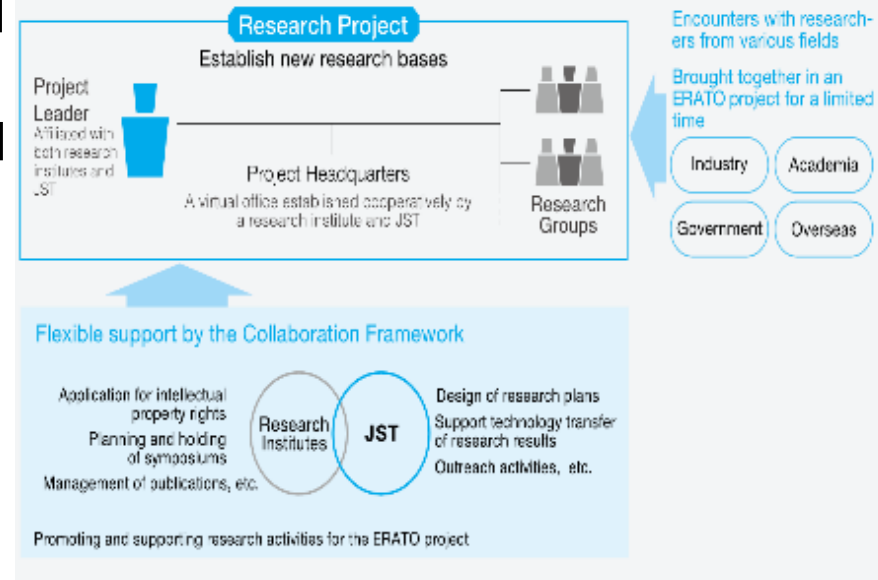
Large-scale group research led by excellent leaders toward creating new tides of science and technology

➤ Objectives

The program aims to promote challenging basic research through the integration of different fields across existing research areas and/or on new approaches with a large amount of research funds, and thus promote the formation of the new tides of science and technology that lead to scientific and technological innovation in the future and contribute to the accomplishment of Strategic Objectives.

➤ Features

- The Research Directors design Research Areas based on unique concepts and deal with the development of new fields.
- Uniqueness and leadership of Research Directors
- Together researchers from various fields, backgrounds, organizations, and nationalities



Total Budget	Research Period
1.2 billion JPY	Approximately 5 years

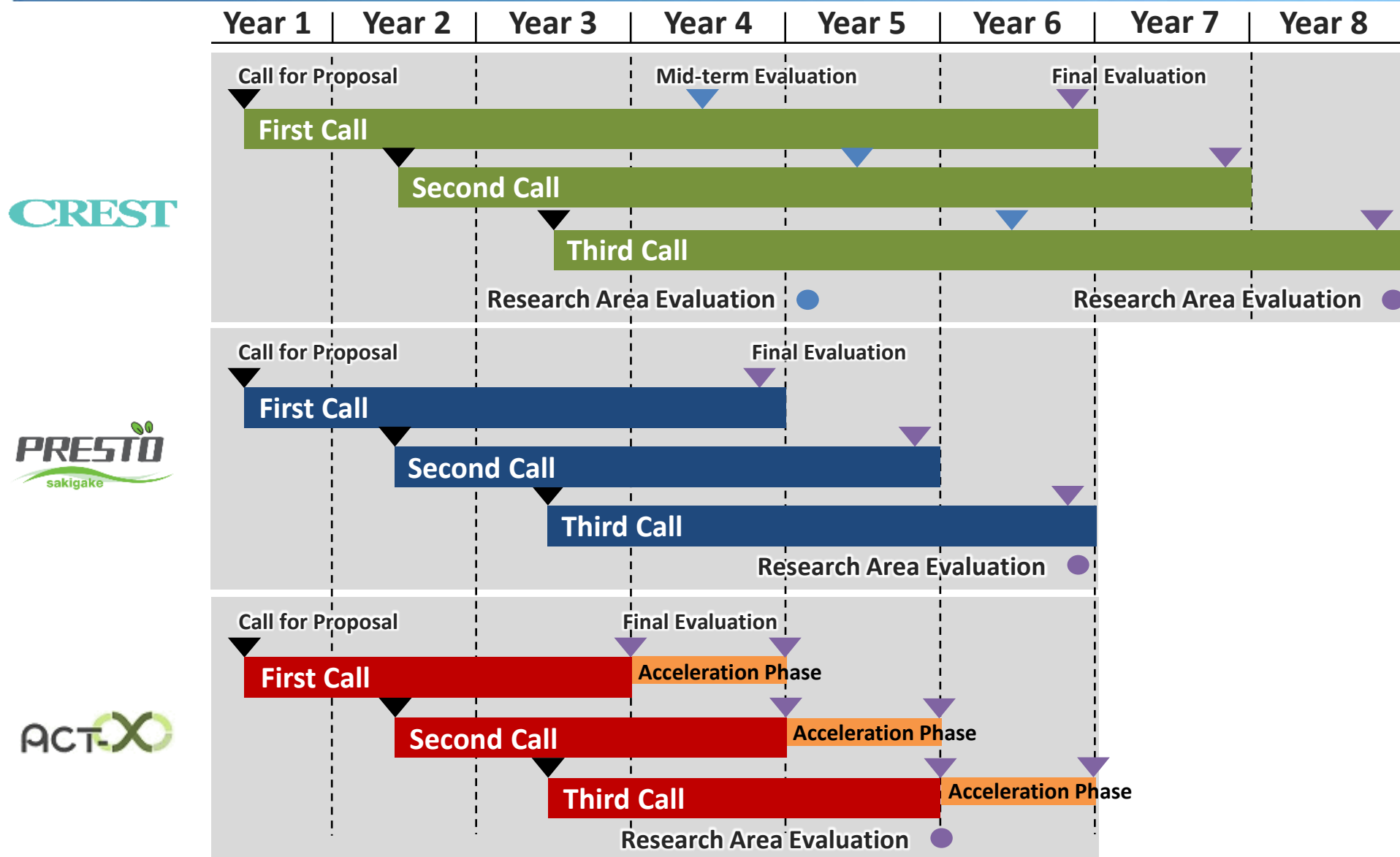
Direct expenses

ERATO Research Project (examples)

ERATO

Research Project	Research Supervisor	Year Started
SUZUKI RNA Modification	Tsutomu Suzuki (The University of Tokyo)	2020
UEDA Biological Timing	Hiroki R. Ueda (The University of Tokyo / RIKEN)	2020
YAMAUCHI Materials Space-Tectonics	Yusuke Yamauchi (University of Queensland / Waseda University)	2020

Time schedule of CREST, PRESTO and ACT-X



Annual schedule of CREST, PRESTO and ACT-X in FY2021

Provisional notification from MEXT on next fiscal year's budget and Strategic Objectives:	Late December,2020
setting up Research Areas by JST :	Early of January - Late of March, 2021
Official decision of budget and Strategic Objectives	Late of March,2021
Call for proposals(Term1) <Existing Research Areas> Invitation Period:	Late March - Middle of May, 2021
Call for proposals(Term2) <FY2021 New Research Areas> Invitation Period:	Middle of April - Early June, 2021
Decisions of adopted projects :	September, 2021
Research Start :	October 1st, 2021

Features of Strategic Basic Research Programs

In accordance with the characteristics of each Research Area / issue, extensive management is implemented and organized

Outreach activities

- Symposiums
- Open seminar for young researchers
- Joint events with academic conference
- Press releases
- Newsletter publications
- Publication of feature articles in academic journal

Fusion of multidisciplinary fields

- Joint meeting across multiple Research Areas
- Networking meetings / study meetings / seminars
- Supplementary support for integrated researches

For social implementation - Practical development

- Appointing Industry backgrounded Advisers
- Evaluation based on technical readiness level (TRL)
- Patenting support
- New Technology Presentation Meeting
- Strengthening cooperation with companies
- Bridging to various technology transfer funding programs

Progress support

- Research Area meetings
- Site visits
- Monthly / Quarterly / half-yearly progress report
- Support for life-events

International collaboration

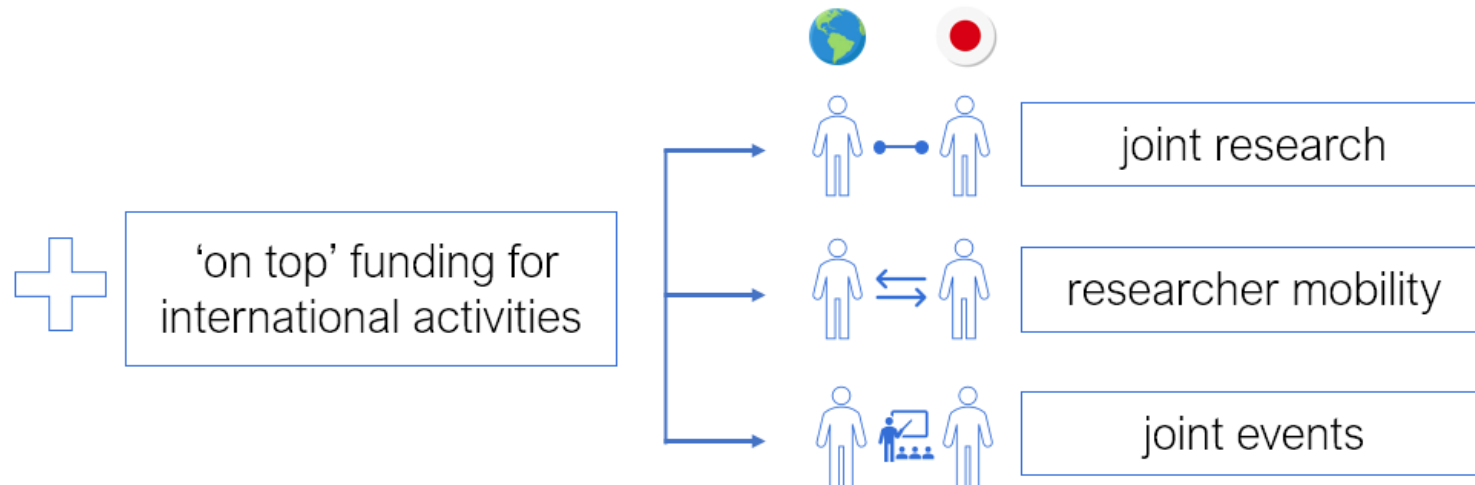
- Appointing international Advisers
- Cooperation with overseas FA
- Cooperation with JST international collaboration funding program (SICORP)
- Joint symposium with various overseas organizations
- Invitation and dispatch of researchers

Human resource development

- Award system
- Researcher networking events
- Overseas dispatch training
- Young researcher camp
- SciFoS program
- Start-up support for PRESTO researchers

International Collaboration in SBRPs

We support the acceleration of joint research with overseas researchers and maximize research results such as writing co-authored papers.



International Collaboration in SBRPs

CREST「Energy Management System」Research Area



The Research Council
of Norway

Held an international workshop in collaboration with overseas FAs (US NSF, German DFG, Norwegian RCN) . As a result, We Utilized the established international research network, we promoted joint research.

Japan-US-Europe Joint Symposium in the Field of Quantum Technology

JST held a Japan-Europe joint workshop in collaboration with the EU's Quantum Flagship. JST Expands Japan-Europe Cooperation Framework and Holds EU-USA-Japan International Symposium on Quantum Technology in Kyoto from December 16th to 17th ,2019.

Cooperation with JST SICORP

JST SICORP is the program in which bilateral joint recruitment and selection are conducted, and joint proposals from researchers in both countries are adopted and promoted. By sharing the research supervisor of SICORP's PO and CREST / PRESTO research supervisor, we build an international research network.

  「Molecular Technology」Research Area

  「Big Data」Research Area

For more information, please visit :
<https://www.jst.go.jp/kisoken/en/index.html>

THANK YOU