

FY2017

STRATEGIC BASIC RESEARCH PROGRAMS

(CREST/PRESTO/ACT-I)

Invitation for Application of Research Proposals

[Application Guidelines]



Department of Innovation Research
Japan Science and Technology Agency

Introduction: In Issuing the Invitation for Research Proposals

1 Purpose and Overview of Strategic Basic Research Programs

The purpose of Strategic Basic Research Programs and an overview of the program operations aimed towards achieving their goals are as follows. We are eagerly awaiting applications to and participation in the programs from researchers valiantly undertaking challenging research that creates a wellspring of top innovation from excellent basic science.

1-1 Purpose of the Programs

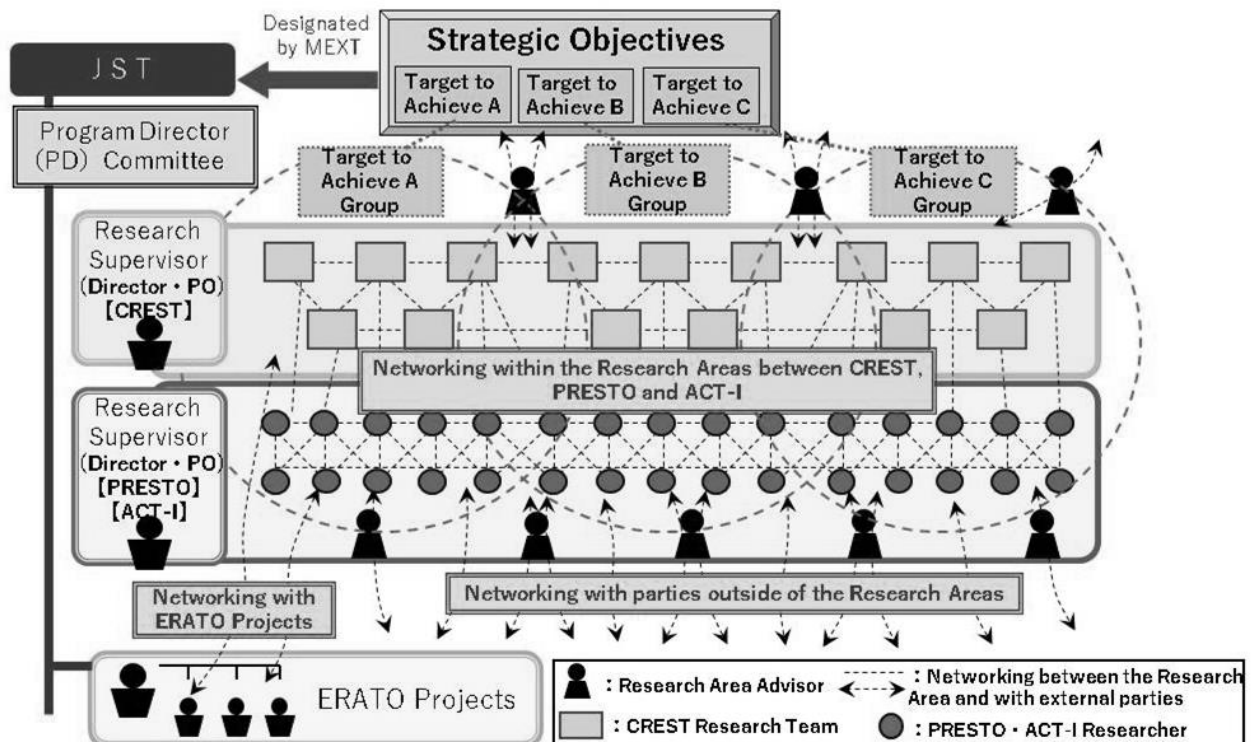
The purpose of Strategic Basic Research Programs is to advance strategic basic research under policies determined by the Japanese Government, and create the seeds of innovative technologies based on new scientific knowledge that gives rise to scientific and technical innovation leading to social and economic change.

1-2 Overview of the Programs

Based on the national government's science and technology policies and social and economic needs, under "Strategic Objectives" prescribed by the Ministry of Education, Culture, Sports, Science and Technology, JST specifies Research Areas to pursue and Research Supervisors (Program Officers) to lead them. The Research Supervisor pursues strategic basic research aimed at creating the seeds of innovative technologies that will give rise to science and technology innovations that lead to the achievement of solutions in Strategic Objectives.

Program Directors consider and propose management policies and system reforms for each Strategic Basic Research Program. For "CREST" (Research projects pursued by research teams led by Research Directors), "PRESTO" and "ACT-I" (Research projects pursued by individual researchers) within Strategic Basic Research Programs, JST specifies Research Areas and Research Supervisors (Program Officers) based on prior evaluations by Program Directors.

The Research Supervisor oversees Research Areas as a "virtual research institute". More specifically, the Research Supervisor acts as the lab director, builds a time-limited system for conducting research by organizing a research project and assembling an optimal organization of researchers from existing institutions and research fields—from industry, academia, and government— and, enlisting the cooperation of Research Area Advisors and others, oversees work in the Research Area to accomplish Strategic Objectives. CREST Research Directors, PRESTO and ACT-I individual researchers, while receiving support from Research Supervisors in accordance with their operating policies, actively build and utilize communication networks through dialogue with Research Area Advisors and others and connections with participating researchers, as well as through relationships with others inside and outside the country, and apply these networks in advancing the research projects they have proposed to achieve innovations in science and technology.



Standard Model for CREST/PRESTO/ACT-I “Virtual Research Institute”

- Strategic Objectives
 - The National Government (Ministry of Education, Culture, Sports, Science and Technology) prescribes Strategic Objectives based on national science and technology policies and social/economic needs.
 - Approx. 3 “Targets to Achieve” for realizing the Strategic Objectives are presented
- Program Director Committee
 - Presentation and sharing of virtual research institutes’ cross-program operational policies
 - Preliminary evaluations of new Research Areas and Research Supervisors
 - Most appropriate distribution of resources and promotion/coordination of collaboration across Research Areas

*Set the research area within the coverage of CREST, PRESTO, or ACT-I (include two or more or compound areas).

- Research Supervisor (Program Officer)

With the aims of generating innovation and achieving Strategic Objectives,

- Formulates and shares operational policies for Research Areas and manages the Research Area with the cooperation of Research Area Advisors (including selection/evaluation of research projects).
- Provides leadership and support in the formation of networks inside/outside the Research Area with eyes to the advancement of science and technology innovation

2 For Researchers Considering Applying for /Participating in the Programs

2-1 Regarding the Proactive Participation in/Contribution to the Programs by Young Researchers

For those Considering Applying for PRESTO, ACT-I or CREST

The intent of these programs is to generate excellent new technological seeds that lead to science and technology innovation in the future. For Japan to continue with scientific and technological innovations in the coming decades, it is critical for its academia and industry to lead the country's scientific and technological explorations and provide young researchers like you with greater opportunities to innovate new businesses based on original technologies.

Many young researchers have carried out their researches in the PRESTO in the past. With Research Supervisors and Research Area Advisors playing the role of so-called “mentors” and research areas providing young researchers with a forum for mutual communication, opportunities are provided to enable young researchers to tackle their own research themes as principal investigators. We are eagerly awaiting applications to and proactive participation in the PRESTO program from even more younger-generation researchers than ever before.

ACT-I is a new solicitation program, commenced FY2016, to identify and train younger researchers including students in master's programs. We urge you all to use this opportunity to challenges in your own research proposals especially for those students seeking to become researchers, younger researchers already on this career path, and researchers at business in all business size and industry.

In addition, under CREST, multiple young researchers participate in each research project. The Research Directors (PIs) are requested to make efforts to nurture the young researchers in order to enable them to play active roles in diverse fields in industry, academia and government sectors after the project has concluded. JST, too, will create more opportunities for young researchers to interact than ever.

We strongly expect that young researchers to unflinchingly take on the challenge of innovative research, broadening their activities and achieving tremendous breakthroughs through our programs.

Yoshiko SHIROKIZAWA

Executive Director

Japan Science & Technology Agency (JST)

2-2 Promotion of Diversity

JST Promotes Diversity!

JST promotes diversity by not only encouraging mutual respect between a diversity of human resources as they each demonstrate their abilities to the maximum, but also emphasizing the diversity of each individual's career and working style. JST generates innovation through diversity, resolving problems for future society and contributing to the strengthening of Japan's industrial competitiveness and spiritual enrichment.

Furthermore, with regard to the "Childbirth, Child-raising, Nursing Care Support System" (renamed the "Childbirth, Child-raising, and Other Support System" from FY2015), based on the voices of researchers who are users of this system, JST is contributing to the generation of innovation in Japan through the creation of an environment that enables researchers who have taken leave to return to research while also revising and improving the support system.

When inviting applications for new research projects and during the screening process, applications are also considered from the perspective of diversity. We look forward to researchers actively applying to join these programs.

Michinari HAMAGUCHI

President

Japan Science & Technology Agency (JST)

We Are Waiting for Your Application!

JST promotes diversity under the concept that diversity is a tool for understanding people who think differently from yourself and fusing your thinking with that of the other person to create new value.

While the role of women in diversity is very important, JST's diversity policies are also aimed at young researchers and researchers who have foreign citizenship. To ensure that each individual researcher is able to fully exercise their skills, JST provides continual support for researchers' childbirth, child-raising, and nursing care (for elderly relatives), and also endeavors to maintain a balanced membership composition in committees, etc.

JST diversity is aiming to open the way to a new future by responding flexibly to various problems in cooperation with many people with a diverse range of experiences and ways of thinking. JST promotes diversity for not only JST employees but for all people utilizing the JST system. We look forward to receiving your proactive application to the programs.

Miyoko WATANABE
Deputy Executive Director and Director of Office for Diversity and Inclusion
Department of Personnel
Japan Science and Technology Agency (JST)

JST is implementing supportive measures for assisting researchers to achieve balance between their research work and life events (gender equality expenses assistance that can be used to advance the R&D being carried out by the researcher in question or to reduce their financial burden) with the aim of enabling researchers to continue their R&D work without interrupting their careers due to a life event (childbirth, child-raising, nursing of elderly relatives, etc.) or in the case that the researcher must put their career on hold temporarily, enabling them to resume their R&D activities as soon as it becomes possible for them to do so and continue their career from that point onwards. JST also presents role models for female scientists. For details, please refer to the websites below.

JST's Diversity Activities

<http://www.jst.go.jp/diversity/research/index.html>

Activities to promote diversity in CREST and PRESTO

<http://www.jst.go.jp/kisoken/crest/nadeshiko/index.html>

2-3 Bilateral communications activities with the public

Concerning the bilateral communication activities with the public, based on the decision (titled “Concerning the Promotion of Dialogue on Science and Technology With the Public, a Basic Approach Policy”) of the Minister in charge of science and technology policies and diet members with expert knowledge on June 19, 1010, it is considered essential for a research and development project, which has been provided with a minimum of JPY 30 million per year of public research fund (competitive or project research fund), to fulfill the following objectives: 1) achieve continued excellent results in the field of science and technology “scientific and technological dialogue with the public;” 2) obtain the public’s understanding and support; 3) maintain a standpoint on promoting science and technology jointly with the public; and 4) return the achievements in the development of science and technology to the public for the further development of the

field in Japan. In addition, the Fifth-term Basic Plan for Science and Technology, as decided by the cabinet on January 22, 2016, requests the deepening of relationship for dialogue and collaboration among various stakeholders, such as researchers, the public, media, industries, and policy makers. Such relationship is considered as a “joint creation,” and is contrary to the conventional relationship in which science and technology and society stand opposite each other. From these viewpoints, an approach is requested to explain the contents and achievements of research activities to society and the public in the most widely understandable manner possible. To this end, researchers are requested to actively undertake the continual releases of research achievements, through lectures, symposia, and the internet, and full activities involving the participation of diverse stakeholders in a roundtable process.

Please also check “5.2.5 (5) Concerning the preparation and implementation of the data management plan” and the following:

(Reference) Concerning the “Promotion of Dialogue on Science and Technology With the Public, a Basic Approach Policy”: <http://www8.cao.go.jp/cstp/output/20100619taiwa.pdf>

(Reference) Concerning the “Fifth-term Basic Plan for Science and Technology”:
<http://www8.cao.go.jp/cstp/kihonkeikaku/5honbun.pdf>

2-4 Open Access and Data Management Plan

JST announced the basic policies for handling research achievements toward the promotion of open science in April 2017. The policies stipulate the basic concepts for allowing one’s access to papers on research achievements and archiving, as well as on managing and disclosing research data.

In principle, researchers participating in CREST, PRESTO, or ACT-I are mandated to produce documents on research achievements available to the public via the repository organizations or publications for open access.

Researchers, whose proposals have been adopted in the newly set research areas after the 2016 fiscal year, are

also requested to prepare a data management plan. This plan will contain details on policies and plans for archiving, managing, and publishing, or the non-disclosure of research data, which are developing as achievements. Researchers must also submit the plan, along with the research plan document to JST. It is also mandatory for them to undertake archiving, managing, and publication of research data based on this plan.

Please see the following for details:

- JST's basic policies for handling research achievements toward an open science promotion

<http://www.jst.go.jp/pr/intro/openscience/index.html>

- Policies for undertaking data management in a strategic creative research promotion project

http://senryaku.jst.go.jp/teian/koubo/data_houshin.pdf

- 5.2.5 (5) Concerning the preparation and implementation of the data management plan

2-5 Registration at Researchmap

JST Strategic Basic Research Programs (CREST, PRESTO, ACT-I) plans to utilize a database operated by JST for researcher information (researchmap*). This database is a master database on achievement information in various scenes, including achievement reports in the future. In addition, a community function of researchmap will be used in project operation to distribute various files and event guides. For that, it is essential for the representative and main joint researcher of an adopted CREST research and an individual researcher of PRESTO or ACT-I at researchmap. Those who have not yet registered are recommended to register as soon as possible.

The information registered in researchmap is utilized effectively for surveying national plans on academic, science and technology or statistical use purposes. Registration at researchmap and updating of achievement information are requested.

Please confirm the specific registration method, “8.13 Regarding Registration with researchmap.”

(*) Researchmap (the obsolete designation was Read&Research <http://researchmap.jp/>) is the largest Japanese database of researcher information to partially look at Japanese researchers nationwide. As of January 2017, approximately 256,000 researchers are registered. A public organization operates the services in a stable and sustainable manner as to make information on registered profiles and achievements available to the public via the internet. Moreover, researchmap collaborates with e-Rad, and several databases of college professors so that registered information can be used through other systems. Researchers do not need to register repeatedly using the same achievement in various applications and databases. In short, researchmap makes the researcher become more efficient and pay for incidental tasks entailed in a research activity.

3 Towards the Promotion of Fair Research

Towards the Promotion of Fair Research

The recent incidents involving misconduct and dishonesty in research activities have resulted in an alarming condition that threatens the relationship of trust between science and society, and hinders the healthy development of scientific technologies. To prevent misconduct in research activities, autonomous self-purification of the scientific community must function. Each researcher must strictly discipline him/herself and work to create new knowledge and inventions that are useful for society, based on a high moral standard to meet the expectations of society.

As a funding agency for research, the Japan Science and Technology Agency (JST) considers research misconduct a grave issue and makes every effort to prevent it in cooperation with relevant organizations, thereby aiming to regain public trust.

1. JST believes that honesty in research activities is extremely important for Japan, which seeks to develop itself through science and technology.
2. JST supports honest and responsible research activities.
3. JST strictly condemns any misconduct in research activities.
4. JST will promote education in research ethics and reform its research funding programs in cooperation with relevant organizations, in order to prevent misconduct.

We must develop a healthy scientific culture based on social trust toward building a society filled with hopes and dreams for a bright future. We therefore request the continued understanding and cooperation of the research community and related institutions.

Michinari HAMAGUCHI

President

Japan Science & Technology Agency (JST)

JST takes the following measures in response to misconduct in research activities and inappropriate usage etc.¹ of research funds. Researchers participating in the Strategic Basic Research Programs and their affiliated research institutions are asked to comply with these measures.

¹ “Misconduct in research” means fabrication, falsification and plagiarism of data or results of survey published in research papers etc. caused by intent or a gross negligence of basic duty of care as a researcher in the course of research and development activities.

“Inappropriate usage” means usage of competitive research funds etc. according to a false invoice in research and development activities, for other purposes or in violation of laws and JST’s proposal submission requirement, contract etc.

“Fraudulent receipt” means cases in which research is adopted as a subject for a research program through dishonesty or any other fraudulent means.

“Misconduct etc.” means misconduct in research, inappropriate usage of fund and fraudulent receipt.

(1) Enrolling in Educational Programs on Research Integrity

JST requires as a condition of application for the program that the research project applicant has completed an educational program on research integrity (beginning with the Invitation for Research Proposals for FY2015).

In addition, in the case that the research proposal is accepted, the Research Director, Individual Researcher and participants in the research project are required to take a JST-designated e-learning program on research integrity.

For details regarding the above, please refer to “8.1 Enrolling in and Completing the Educational Programs on Research Integrity” and comply with the measures promptly.

(2) Measures Regarding the Inappropriate Usage of Research Funds

In the case of inappropriate usage of research funding provided under this program, the research project in question will be cancelled and all or part of the project’s research funding, etc. must be returned.

Furthermore, depending on the details of the misconduct, limitations may be placed on the eligibility of those involved to apply for or participate in these programs or other Ministry of Education, Culture, Sports, Science and Technology (MEXT) competitive funding systems, competitive funding systems allocated by independent administrative agencies under the auspices of MEXT (hereinafter referred to as “MEXT-related competitive funding systems”), or competitive funding allocated by independent administrative agencies under other ministries and agencies..

(3) Measures Regarding the Implementation of Research Funding Management/Auditing Systems and Responses to Misconduct at Research Institutions

Research institutions need to take responsibility, implementing a system for managing and auditing research funds, ensuring that research funding is spent appropriately, and taking measures against misconduct etc. including compliance education. Furthermore, in the case that an accusation of misconduct is leveled at a research institution, a prescribed investigation must be conducted and the findings reported to JST. In the case that the actions taken by the institution are found to be inadequate, funding for indirect costs may be reduced.

For details, please refer to “8.6 Regarding implementation of systems based on the “Guidelines of Management and Audit of Public Research Funds in Research Institutes (Implementation standards)””.

(4) Measures Regarding Misconduct in Research Activities

In the case that misconduct in research activities (fabrication, falsification, plagiarism, etc.) is discovered, the research project in question may be cancelled; all or part of the project’s research fund etc. returned, and measures taken to publicize the facts of the matter. Furthermore, depending on the details of the misconduct, limitations may be placed on the eligibility of those involved to apply for or participate in these programs or other MEXT-related or national government ministry competitive funding systems.

For details, please refer to “8.7 Regarding implementation of systems based on the “Guidelines for Responding to Misconduct in Research Activities””.

References

The above measures shall be implemented in accordance with these application guidelines and the contract research agreement concluded between the research institution in question and JST based on related national government guidelines. The main related national government guidelines are as follows.

- “Guidelines for the Appropriate Implementation of Competitive Research Funding” (decided by the Liaison Conference among Relevant Ministries on Competitive Funds on September 9, 2005; revised October 17, 2012)
- “Guidelines on Management and Audit of the Public Research Expenses in Research Institutions (Implementation standards)” (decided by the Minister of Education, Culture, Sports, Science and Technology on February 15, 2007; revised February 18, 2014)
- “Guidelines for Responding to Misconduct in Research Activities” (decided by the Minister of Education, Culture, Sports, Science and Technology on August 26, 2014)