

# **Briefing Session for JST Strategic Basic Research Programs (CREST, PRESTO, ACT-I)**

April 2017

Department of Innovation Research  
Japan Science and Technology Agency (JST)

# Content

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## General Introduction

JST and its Strategic Basic Research Programs

CREST – Team Based –

PRESTO – Individual Based –

ACT-I – Individual Based for Young Researchers –

## Invitation for Application in 2017

CREST Research Areas

PRESTO Research Areas

ACT-I Research Areas

# Major Operations of JST

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Planning of R&D Strategy

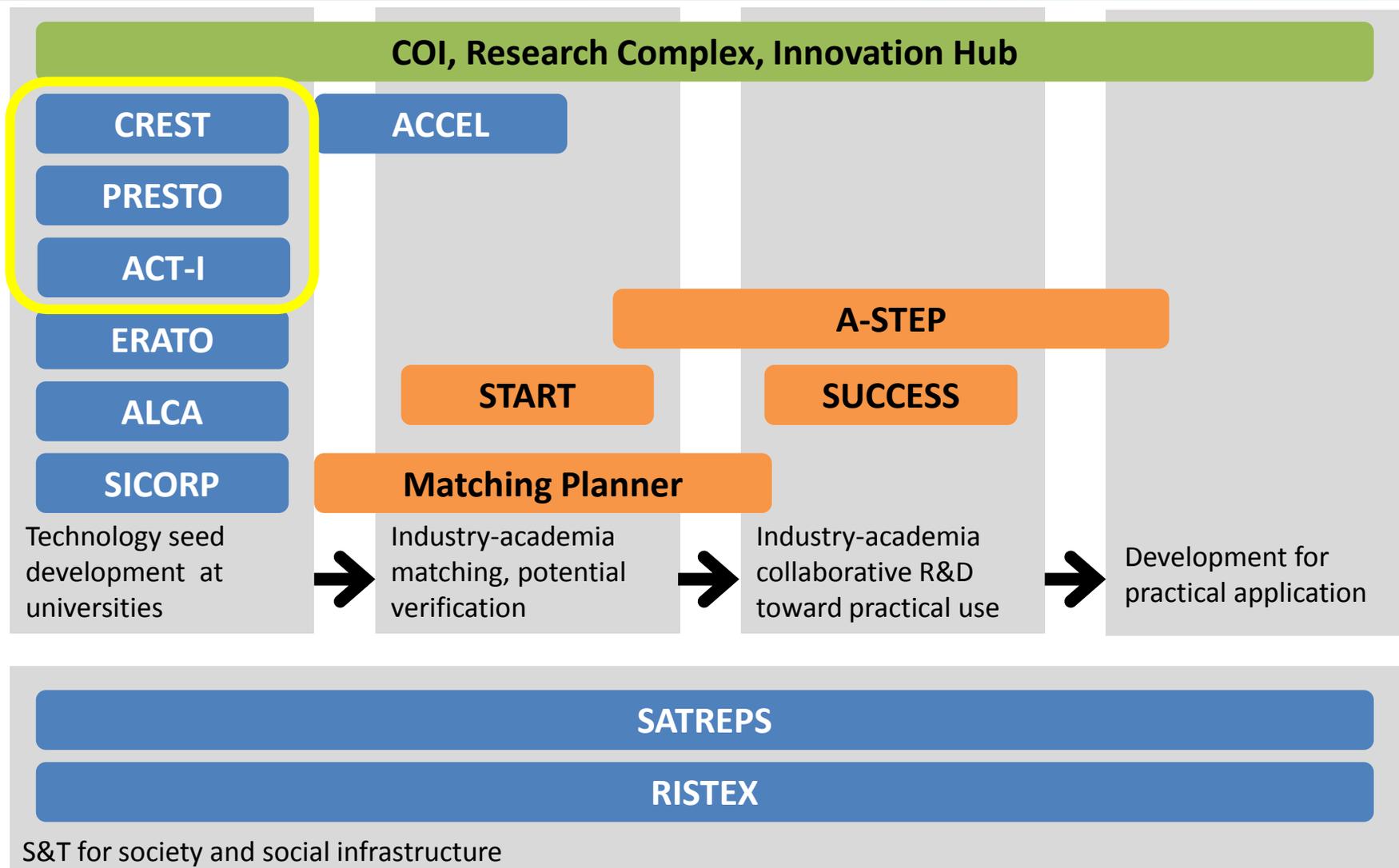
Promoting the Creation  
of Innovation

Building Infrastructure  
for the Promotion of  
Innovation

- Strategic Basic Research
- Innovation-type Research by Academic-Industry Collaboration
- International Joint Research
- Dissemination of S&T Information
- Promoting Science Education
- Promoting Communication between Science and Society

**Budget in FY 2016: 135 Billion Yen**

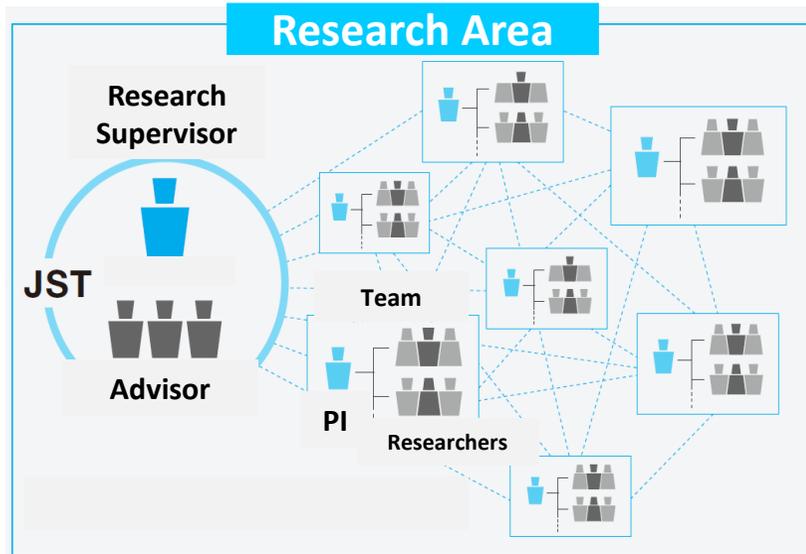
# R&D Funding Scheme



# CREST, PRESTO, ACT-I

## CREST (Team Based)

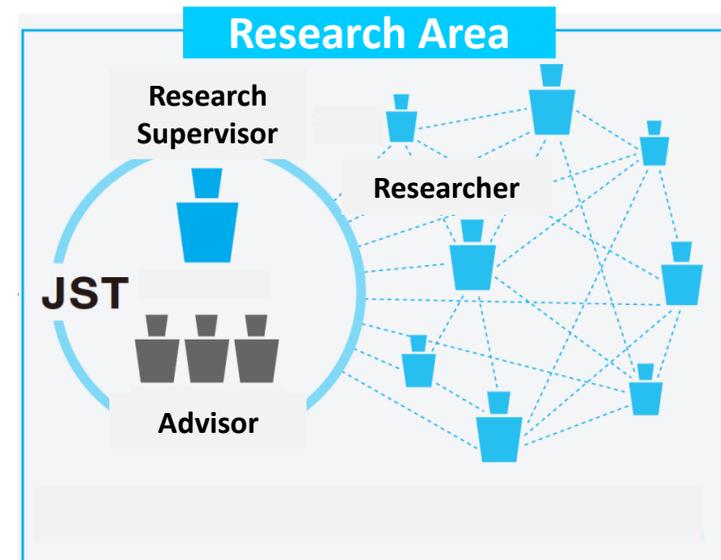
Network-type basic research that creates excellent outcomes that lead to S&T innovation



**CREST: 5.5 years,**  
**150-500 Million Yen**

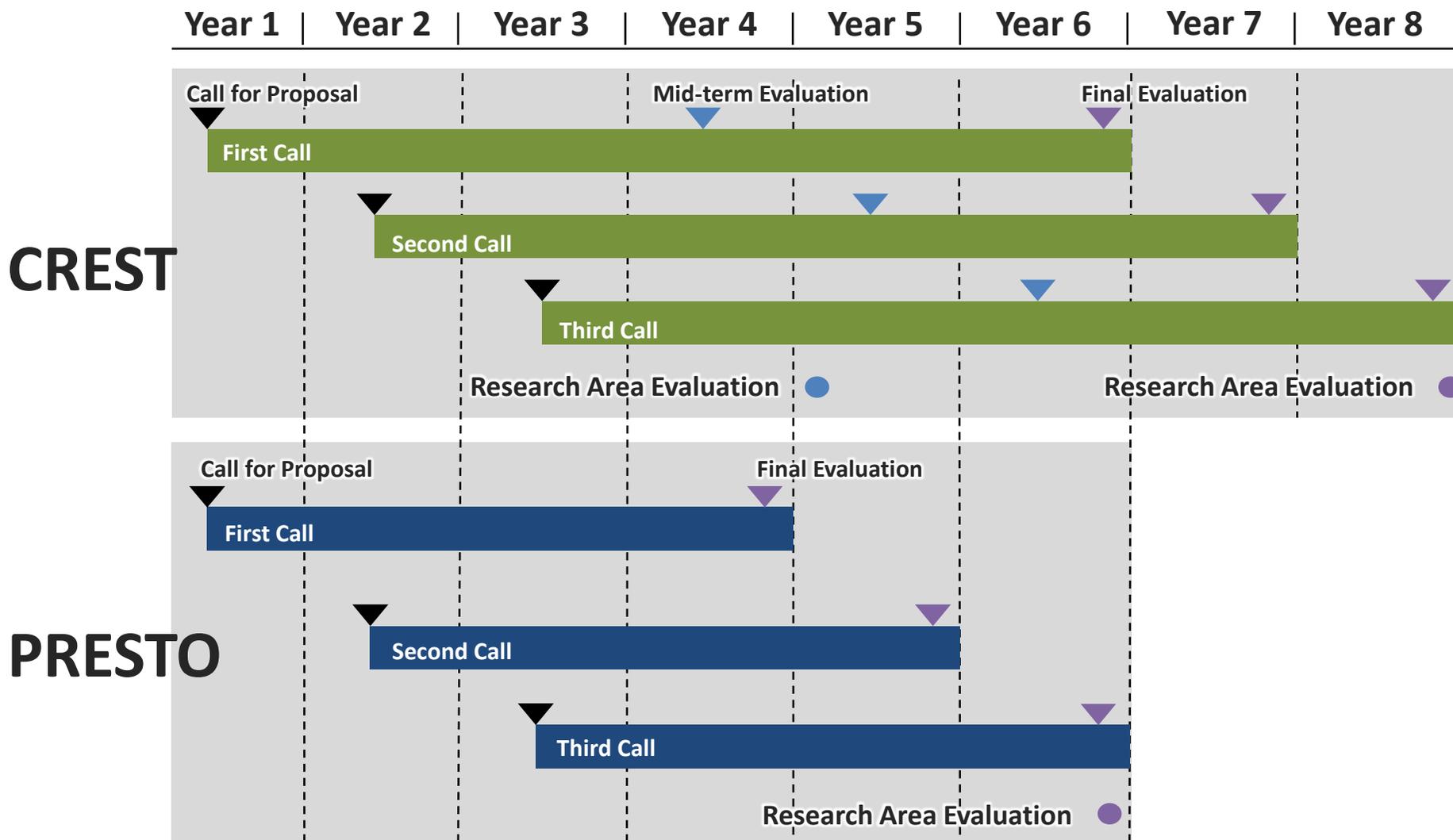
## PRESTO/ACT-I (Individual Based)

Network-type basic research that creates the source of S&T Innovation



**PRESTO: 3.5 years, 30-40 Million Yen**  
**ACT-I: 1.5 years, 3 Million Yen**

# Typical Operation of CREST and PRESTO

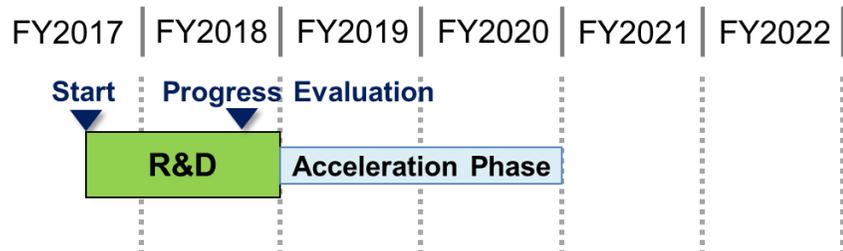


# ACT-I (ækt-ói)

Strategic Basic Research Programs “ACT-I”  
(Advanced Information and Communication Technology for Innovation)

## New Program for “Individuality Establishment” of creative young researchers

- Promote informatics researches on which new value creation is expected, whose research subjects are based on creative and challenging ideas, and with which high level of international expansion is expected in the future.
- Find and grow informatics young researchers who will come up with originative ideas to resolve present and future issues which people are and will be facing, and support to establish individuality of researchers.
- By setting an applicable age limitation, application from graduate students and young researchers at corporations is also expected.



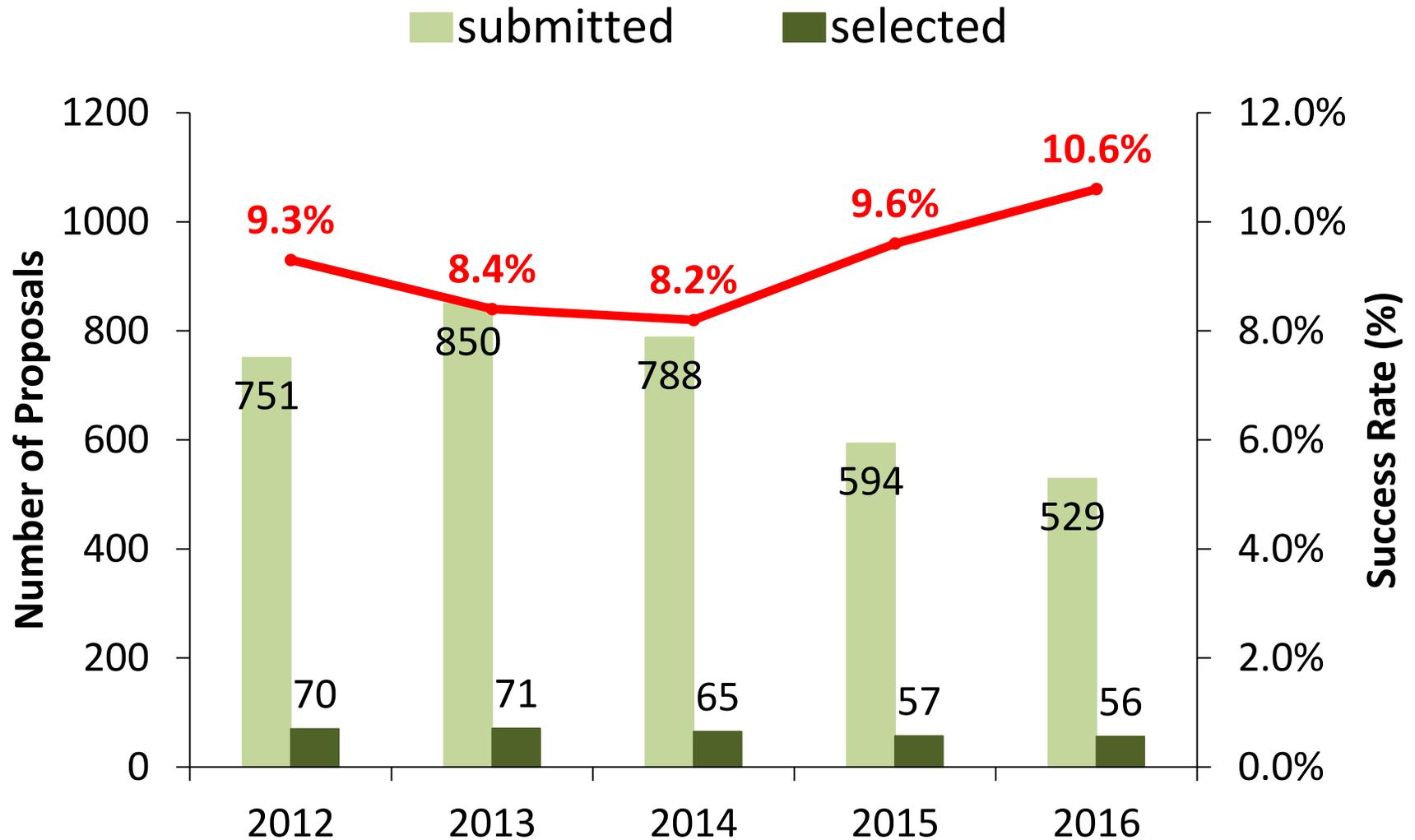
- ✓ under the age of 35 on April 1 in the year of application
- ✓ Research and Development for Future and Value Creation

Research Period    One (1) year and Six (6) months

Research Cost    3 million yen as standard (Max. 5 million yen)

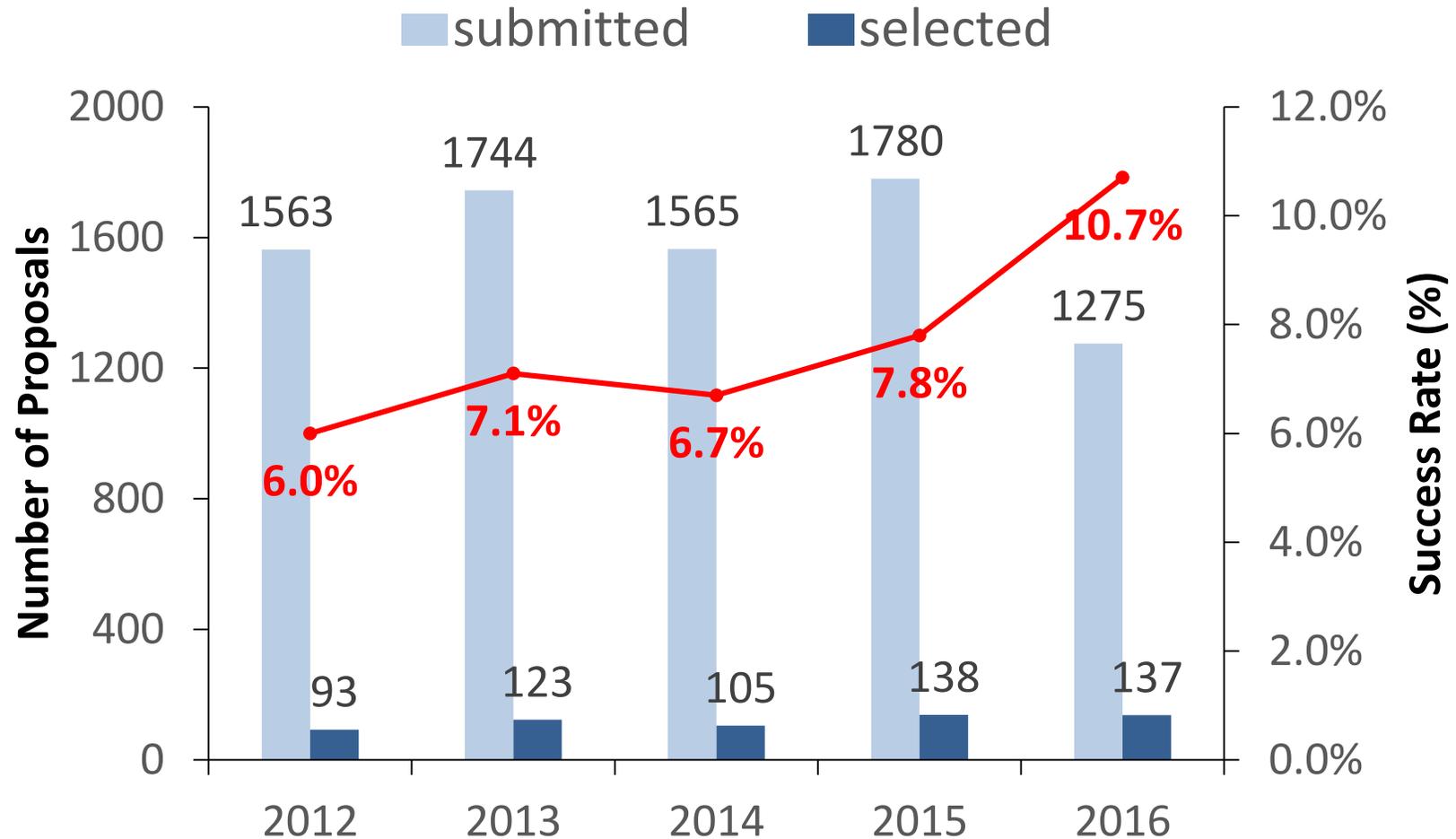
Max. 30 research subjects will be adopted from proposals. If the applicant wishes to provide additional support (accelerating phase) after the research and development period of 1 year and 6 months, apply before application of progress that is aimed at one year after the start of the research, so that the number of researches at the time of adoption about 1/3 of the research expenses of up to 10 million yen per year (direct expenses) can be received

# Statistics of CREST



# Statistics of PRESTO, ACT-I

## PRESTO:



**ACT-I:** 30 or 144 (20.8%) are selected in 2016.

# Requirements for Research Project Applicants: CREST

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Research project applicants must be **affiliated with a domestic Japanese research institution**, where they will organize and pursue the proposed research (**The nationalities are not considered.**)

Researchers who are able to **bear overall responsibility for a research project as a whole** throughout the entire research period.

The applicant must either: Have already completed the educational program for research integrity at his/her affiliated research institution; or complete the JST-provided educational program by specified period.

The following two items must be verifiable upon submission.

- If the research proposal is accepted, the Research Director and research participants must not engage in misconduct in their research (fabrication, manipulation, and plagiarism) nor in inappropriate usage unlawful use of research funds.
- The research project applicants and research participants must not have engaged in misconduct in the past to achieve the research results that are mentioned in the submitted research proposal

# Selection Standards: CREST

**Contributes to the achievement of Strategic Objective.**

Consistent with the **Research Area intent**.

**Basic research** that is **unique, highly appreciated internationally**, and expected to produce **outstanding results** that contribute greatly to science and technology innovation.

Meets all of the following conditions

- The research project applicant has produced research results for accomplishing research objectives.
- Promising preliminary results have been obtained for pursuing the research initiative.
- The research proposals must separately and clearly specify: (i) the background to the research initiative (its necessity and importance); (ii) the actual research record of the research project applicants; and (iii) the research initiative and plan.
- An optimal research organization is in place. The research project applicant will exercise strong leadership and bear responsibility for the entire research team, and, if there will be Lead Joint Researchers, they are essential for pursuing the research project applicant's research initiatives, and a collaboration framework sufficient for enabling significant contributions toward the achievement of research objectives will be constructed.
- Research budget planning necessary and sufficient for pursuing the research project applicant's research initiatives has been performed.
- The research institutions with which the research project applicant and Lead Joint Researchers are affiliated have R&D capabilities and other technical foundations in the subject research field

# Requirements for Research Project Applicants: PRESTO

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A research project applicant must be the person himself/herself who is going to be the **individual researcher**.

A research project applicant must be the proposer of the subject research initiative and be the researcher who will **independently perform research work** in pursuit of the research initiative.

Research project applicants **must hold Japanese citizenship** or be **a foreign researcher who will pursue research work within Japan**.

The researcher **must take responsibility for his/her PRESTO research project throughout the entire research term** and be capable of overseeing it to its completion.

The applicant must either: Have already completed the educational program for research integrity at his/her affiliated research institution; or complete the JST-provided educational program by specified period.

The following two items must be verifiable upon submission.

- If the research proposal is accepted, the Research Director and research participants must not engage in misconduct in their research (fabrication, manipulation, and plagiarism) nor in inappropriate usage unlawful use of research funds.
- The research project applicants and research participants must not have engaged in misconduct in the past to achieve the research results that are mentioned in the submitted research proposal

# Selection Standards: PRESTO

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**Contributes to the achievement of Strategic Objective.**

Consistent with the **Research Area intent**.

**Basic research** that is **unique, challenging, internationally expected to develop at an advanced level**, and can be expected to produce **groundbreaking results** that lead to science and technology innovation.

The research project applicant can be expected to contribute to the development of the subject overall PRESTO Research Area and to the ongoing development of related research fields through the content of the proposed research, the applicant's research approach, and the applicant's efforts to engage with other researchers in discussions and activities that mutually inspire.

Meets all of the following conditions

- The uniqueness of the research project applicant is based on the original ideas of the research project applicant.
- Promising preliminary results have been obtained for pursuing the research initiative.
- The proposed research project is of a scale appropriate for pursuit by an individual researcher.

# Requirements for Research Project Applicants: ACT-I

A research project applicant must be the person himself/herself who is going to be the **individual researcher**.

Applicants are required to be less than **35 years' old** as of April 1, 2017. **Students in graduate programs** are also able to apply this program.

A research project applicant must be the proposer of the subject research initiative and be the researcher who will **independently perform research work** in pursuit of the research initiative.

Research project applicants **must hold Japanese citizenship** or be **a foreign researcher who will pursue research work within Japan**.

The researcher **must take responsibility for his/her ACT-I research project throughout the entire research term** and be capable of overseeing it to its completion.

The applicant must either: Have already completed the educational program for research integrity at his/her affiliated research institution; or complete the JST-provided educational program by specified period.

The following two items must be verifiable upon submission.

- If the research proposal is accepted, the Research Director and research participants must not engage in misconduct in their research (fabrication, manipulation, and plagiarism) nor in inappropriate usage unlawful use of research funds.
- The research project applicants and research participants must not have engaged in misconduct in the past to achieve the research results that are mentioned in the submitted research proposal

# Selection Standards: ACT-I

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**Contributes to the achievement of Strategic Objective.**

Consistent with the **Research Area intent.**

**Proposals are original, challenging, innovative and are expected to attain high quality developments** by the international standards over the coming decades and generate new values necessary for scientific and technological innovations.

The research project applicant can be expected to contribute to the development of the subject overall ACT-I Research Area and to the ongoing development of related research fields through the content of the proposed research, the applicant's research approach, and the applicant's efforts to engage with other researchers in discussions and activities that mutually inspire.

Meets all of the following conditions

- The uniqueness of the research project applicant is based on the original ideas of the research project applicant.
- The proposed research project is of a scale appropriate for pursuit by an Individual Researcher.

# Each Research Area's direction

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- Application Guideline includes Plans of Research Areas, and please see and confirm the each direction.
- Research Supervisors explanation meetings (in Japanese) are planned and documents and movies will be up on home page.

<http://www.senryaku.jst.go.jp/teian/top/setsumeikai.html>

# Promotion of Diversity

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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.

- When inviting applications for new research projects and during the screening process, **applications are also considered from the perspective of diversity.**
- JST has the **“Childbirth, Child-raising, Nursing Care Support System”**.

# Schedules

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## CREST

Application Deadline:  
6th June 12:00

## PRESTO

Application Deadline:  
30th May 12:00

## ACT-I

Application Deadline:  
30th May 12:00

Notification of document  
screening results:

Middle of June – Middle of July

Interview period:

Late July - Middle of August

Research begins:

October, 2017

For more information: <http://www.senryaku.jst.go.jp/teian-en.html>

**NOTE: After the deadline, Application will “NEVER” be accepted strictly!**

# Invitation of Application in 2017

## CREST New Research Areas

Research Area	Research Supervisor
Elucidation of biological mechanism of extracellular fine particles and the con	Yoshinobu Baba (Nagoya University)
Creation of Innovative Core Technologies for Nano-enabled Thermal Management	Yuji Awano (Keio University)
Revolutional material development by fusion of strong experiments with theory / data science	Hideo Hosono (Tokyo Institute of Technology)
Symbiotic Interaction: Creation and Development of Core Technologies Interfacing Human and Information Environment	Kenji Mase (Nagoya University)

# Invitation of Application in 2017: CREST

Research Area	Research Supervisor	Year Started
Development and application of optical technology for spatiotemporal control of biological functions	Ryoichiro Kageyama (Kyoto University)	2016
Development and application of intelligent measurement-analysis methods through coalition between measurement technologies and informatics	Yoshiyuki Amemiya (CREST) (The University of Tokyo) Genshiro Kitagawa (PRESTO) (Research Organization of Information and Systems)	2016
Creation of an innovative quantum technology platform based on the advanced control of quantum states	Yasuhiko Arakawa (The University of Tokyo)	2016
Development and Integration of Artificial Intelligence Technologies for Innovation Acceleration	Minoru Etoh (NTT DOCOMO)	2016
Advanced core technology for creation and practical utilization of innovative properties and functions based upon optics and photonics	Ken-ichi Kitayama (Osaka University)	2015
Scientific Innovation for Energy Harvesting Technology	Kenji Taniguchi (NAIST) Hiroyuki Akinaga (AIST)	2015
Innovative catalysts and creation technologies for the utilization of diverse natural carbon resources	Wataru Ueda (Kanagawa University)	2015
Creation of fundamental technologies contribute to the elucidation and application for the robustness in plants against environmental changes	Satoshi Tabata (Kazusa DNA Reseach Inst.)	2015

# Invitation of Application in 2017

## PRESTO New Research Areas

Research Area	Research Supervisor
Creation of Life Science Basis by Using Quantum Technology	Mitsutoshi Setou (Hamamatsu University School of Medicine)
Function and control of fine particles in a living body	Akihiko Nakano (The University of Tokyo)
Thermal Science and Control of Spectral Energy Transport	Katsunori Hanamura (Tokyo Institute of Technology)
The Future of Humans and Interactions	Junichi Rekimoto (The University of Tokyo / Sony Computer Science Laboratories, Inc.)

# Invitation of Application in 2017: PRESTO

Research Area	Research Supervisor	Year Started
<b>Optical control of biological functions for the elucidation of biological systems</b>	Yoshinori Shichida (Kyoto University)	2016
<b>Development and application of intelligent measurement-analysis methods through coalition between measurement technologies and informatics</b>	Yoshiyuki Amemiya (CREST) (The University of Tokyo) Genshiro Kitagawa (PRESTO) (Research Organization of Information and Systems)	2016
<b>Quantum state control and functionalization</b>	Kohei Itoh (Keio University)	2016
<b>Fundamental Information Technologies toward Innovative Social System Design</b>	Sadao Kurohashi (Kyoto University)	2016

# Invitation of Application in 2017: PRESTO

Research Area	Research Supervisor	Year Started
<b>Fully controlled photons and their proactive usage for new era creation</b>	Ken-ichi Ueda (Univ. of Electro-Communications)	<b>2015</b>
<b>Scientific Innovation for Energy Harvesting Technology</b>	Kenji Taniguchi (NAIST) Hiroyuki Akinaga (AIST)	<b>2015</b>
<b>Science and Creation of Innovative Catalysts</b>	Hiroshi Kitagawa (Kyoto University)	<b>2015</b>
<b>Advanced Materials Informatics through Comprehensive Integration among Theoretical, Experimental, Computational and Data-Centric Sciences</b>	Shinji Tsuneyuki (The University of Tokyo)	<b>2015</b>
<b>Creation of Next-generation fundamental technologies for the control of biological phenomena in field-grown plants</b>	Kiyotaka Okada ( Ryukoku University /NINS)	<b>2015</b>
<b>Innovational technical basis for cultivation in cooperation with information science</b>	Seishi Ninomiya (The University of Tokyo)	<b>2015</b>

# Invitation of Application in 2017: ACT-I

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Research Area	Research Supervisor	Year Started
Information and Future	Masataka Goto (National Institute of Advanced Industrial Science and Technology)	2016

# Application Submission

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Proposals should be submitted via **e-Rad system**

<http://www.e-rad.go.jp/>

Researchers who do not have a login ID and password should immediately complete the researcher registration procedure. As the application deadline approaches, heavy demands on the e-Rad system could slow the application process and even cause the application deadline to be missed. Please give yourself plenty of time to complete submission of proposal.

# Conflict of Interest with Research Supervisor

Research project applicants **shall be excluded from selection consideration** when involved in a relationship involving a Research Supervisor, as described in 1) through 4) below.

- 1) The research project applicant is a **relative** of the Research Supervisor
- 2) The research project applicant and the Research Supervisor are **both affiliated with the same smallest organizational unit** (e.g. same research lab) of a university, national or other national government-funded research and experiment institution. Or, the research project applicant and the Research Supervisor are affiliated with the same company
- 3) The research project applicant and the Research Supervisor are presently working in **close cooperation on the same joint research project**. Or, have done so within **the past five years**
- 4) The research project applicant and the Research Supervisor were in a **close teacher-student relationship** for a total of more than 10 years (not necessarily continuous), or were in a **direct employer-employee relationship**.

In case that judgment is difficult, please ask it to JST with the following form.

<http://www.senryaku.jst.go.jp/teian/en/top/koubo.html>

If asked by Mon. 8 May, JST will answer until the dead line date.

If after Tue 9 May, answer from JST may be after the dead line date.

# Points of Concern in Preparing Proposal

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## Preliminary Selection

- Depending on the number of applicants and other factors, preliminary documentation-based selections may be performed for Individual Research Areas.
- This preliminary selection is performed with the viewpoint whether proposals are suited to the purpose of the subject Research and to the CREST/PRESTO/ACT-I program.
- It will NOT be published whether Preliminary Selection is performed or not.

# Points of Concern in Preparing Proposal

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## ■ Promotion of Fair and Honest Research

- Enrolling in Educational Programs on Research Integrity
- Measures Regarding the Inappropriate Usage of Research Funds
- Measures Regarding the Implementation of Research Funding Management/Auditing Systems and Responses to Misconduct at Research Institutions
- Measures Regarding Misconduct in Research Activities

## ■ Proactive Participation in and Contribution to the Programs by Young Researchers

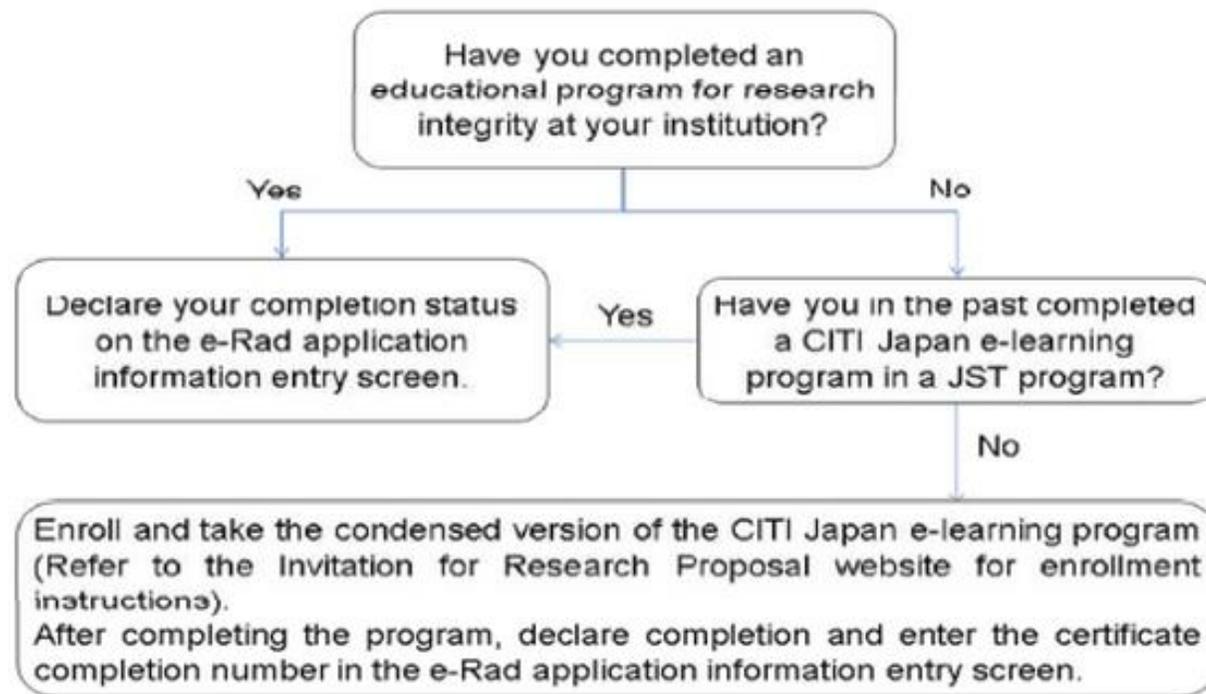
## ■ Equipment and Apparatuses Sharing

## ■ Implementation of “Data Management Plan”

## ■ Human Rights Protection, Laws & Regulations Compliance

# Promotion of Fair and Honest Research

The research project applicant **must complete the educational program for research integrity as a prerequisite for application.** Note that if completion of the program cannot be confirmed, the application will be disqualified for failing to meet the requirements



For detail, please see the Application Guideline

## Proactive Participation in and Contribution to the Programs by Young Researchers

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We have strong expectations that young researchers will **take on the challenge of innovative research, broadening their activities and achieving breakthroughs** using our programs.

See “Introduction” in the application guidelines

# Equipment and Apparatuses Sharing

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In accordance with the policy of Japan Government, it is necessary to operate "shared system of research equipment and apparatuses of research organization" (hereinafter referred to as research equipment and apparatuses sharing system) in universities and national research institutes, etc. It is especially considered appropriate to share large equipment and apparatuses on competitive research funds in principle.

Based on these, please make the following points at the time of application.

1. Purchase and sharing by combining multiple research expenses of research equipment and apparatuses.
2. Sharing by other research etc. within the range not impeding the promotion of the proposed research subject.
3. Utilization of research equipment and apparatuses purchased by other research expenses etc.
4. Aggressive utilization of commonly available devices and confirmation of redundancy with existing devices that can be utilized
5. Proactive registration in purchasing research equipment and apparatuses sharing system etc.

**JST may check the usage situation of equipment and apparatuses sharing system.**

# Implementation of “Data Management Plan”

JST decided that researchers should **formulate and implement data management plans after approval** if the research areas are expected to generate research outcomes or novel goods, services and market through sharing and utilizing the research data.

## Items to be included in the Data Management Plan

1. Policy for storage and management of the research data
2. Policy for open/close of the research data
3. Method and system for distribution of the open research data
4. Expected usage of the open research data
5. Action for the promotion of utilization of the open research data
6. Others

※ This policy is basically applied to all research areas that start in or after 2016

# Human Rights Protection, Laws & Regulations Compliance

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- In the case that research requires procedures based on laws and regulations is included, please proceed necessary procedures such as obtaining approval from the ethics committee inside and outside of the research organization.
  - In implementing the research concept, research that requires consent and cooperation of the other party
  - In the case of Studies that need consideration of handling of personal information
  - Research requiring efforts for bioethics and safety measures
- In conducting on-site research activities overseas and joint research with overseas research institutions, please check in advance and comply with relevant laws and regulations of the related countries.

# Thank you.

HP: <http://senryaku.jst.go.jp/teian-en.html>

Email: [rp-info@jst.go.jp](mailto:rp-info@jst.go.jp)