Global Activities of JST Strategic Basic Research Programs (CREST, PRESTO)

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JST-NSF-DFG-RCN Workshop on

Distributed Energy Management Systems

科学技術振興機構

Who we are?

On April 1, 2015, the government of Japan established the National Research and Development Agencies by transforming the former Independent Administrative Agencies for R&D, including JST.

Fundamental goal : Maximize research achievements

- greater flexibility in institutional management based on the characteristics of R&D agencies
- greater responsibility to maximize research achievements

Mission **Contribute to the creation of innovation**

Vision

I. **Achieving innovations in science and technology through creative research and development**

II. **Maximizing research outcomes by managing research resources on a virtual network**

III. **Developing Japan's infrastructure for science and technology so as to accelerate innovation in science and technology**

http://www.jst.go.jp/EN/about/message.html

Approaches of JST and JSPS (KEKEN)

JST

Top-down approach

❖R&D strategy based on S&T and socio-economic trends

❖R&D strategy aiming at creation of innovation

Socio-economic goals

▼

Ministry's policy based on the National S&T Basic Plan

▼

Determination of strategic sector

▼

Design of research areas, appointment of research supervisors

▼

Creation of innovation seeds from research results

JSPS

Promotion of a broad range of academic works

▲

Support to the creative and pioneering research with academic excellence

▲

Research proposals based on the scientists' freedom with their own goals

▲

Bottom-up approach

❖Depending on freedom and originality of researchers

❖Not necessarily relevant to socio-economic trends

Major Operation of JST

R&D Strategy | Strategic Basic Research | Innovative Research | Commercialization R&D

R&D Strategy Planning

- Center for R&D Strategy (CRDS)
- China Research and Communication Center (CRCC)
- Center for Low Carbon Society Strategy (LCS)

Promoting Creation of Science, Technology and Innovation

- **Strategic Promotion of Basic Researches**
- R&D based on University-Industry Collaboration
- Recovery and Revival from the Great East Japan Earthquake
- Promotion of International S&T Joint Projects
- R&D System Reform
- Promotion of ImPACT, SIP

Total budget of FY2015 about **106.5 billion yen**

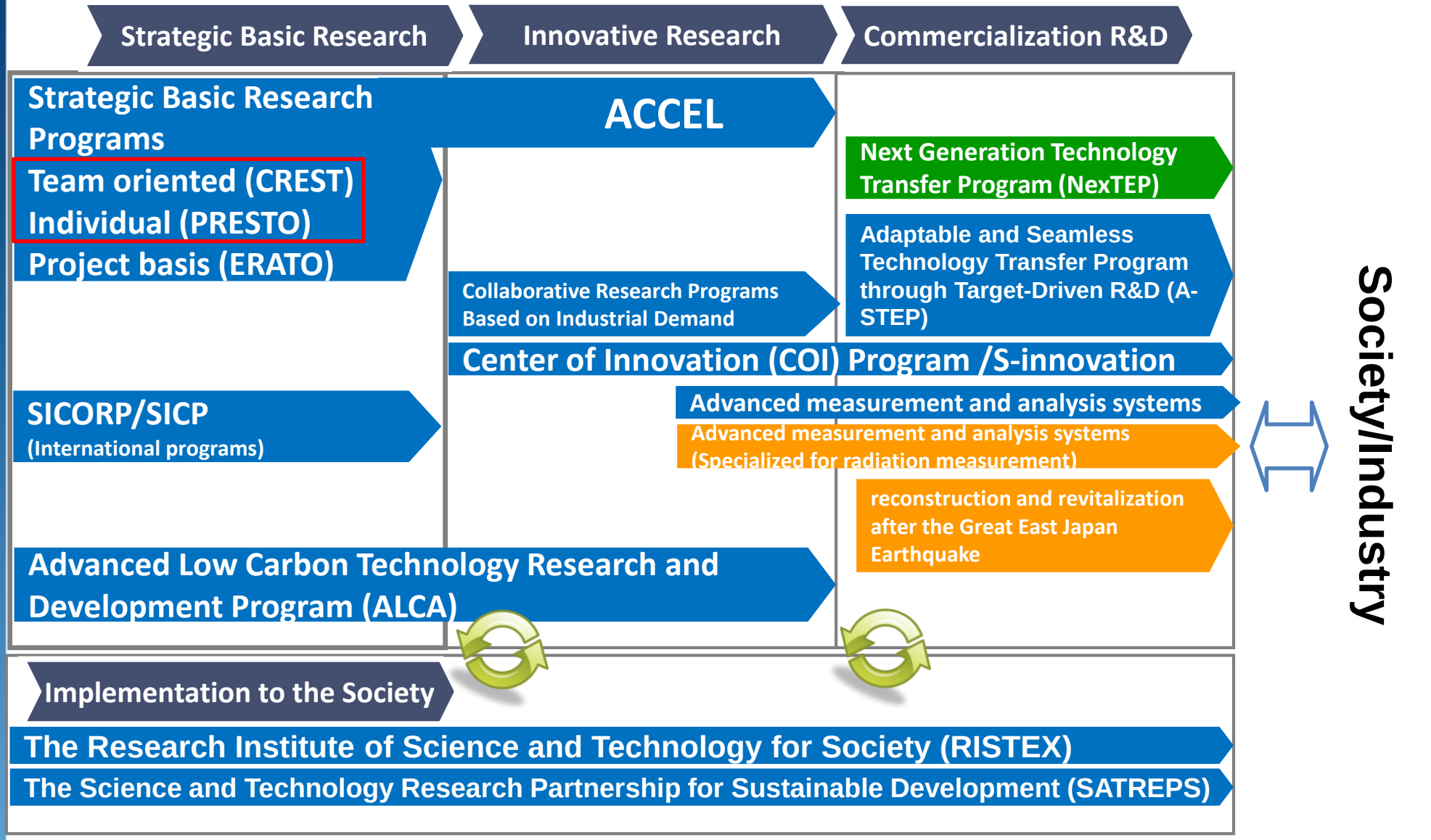
S&T Infrastructure

Establishing an infrastructure to drive the generation of innovation
- Soft infrastructure to support innovation -

- Knowledge Infrastructure
- Next-Generation Development
- Science Communication

CREST さきがけ JST 国立研究開発法人 科学技術振興機構 Japan Science and Technology Agency

Overview of Major Funding Programs of JST



Global Activities of JST

Promote Science &Technology Diplomacy

Bilateral Joint Funding (SICP)
More than 400 projects
since 2003 with 23 countries/area

Satreps
Science and Technology For the Earth, for the Next Generation Official Development Assistance
e-ASIA JRP

BELMONT FORUM
CONCERT JAPAN
Connecting and Coordinating European Research and Technology Development with Japan
SAKURA SCIENCE

Maximize R&D outcomes through global activities

Bilateral Joint Funding (SICORP)
23 projects since 2009
with 6 countries and area

Globalization of Strategic Basic Research program
CREST
さきがけ PRESTO

Contribute to global platforms of funding agencies

GLOBAL RESEARCH COUNCIL

Funding Agency Presidents' Meeting In Kyoto

About Strategic Basic Research Programs

Strategic Objectives designated by the Government

Development and Operation of Virtual Networking Research Institutes

- Program Director oversees the overall system and considers management direction
- Establishment of Research Areas and Program Officers (Research Supervisors, etc.)best suited for achieving 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＞

Creating the Seeds for New Technology (CREST, PRESTO, ERATO, ACCEL)

Advanced Low Carbon Technology Research and Development Program (ALCA)

Research Institutes of Science and Technology for Society (RISTEX)

Prioritized Area

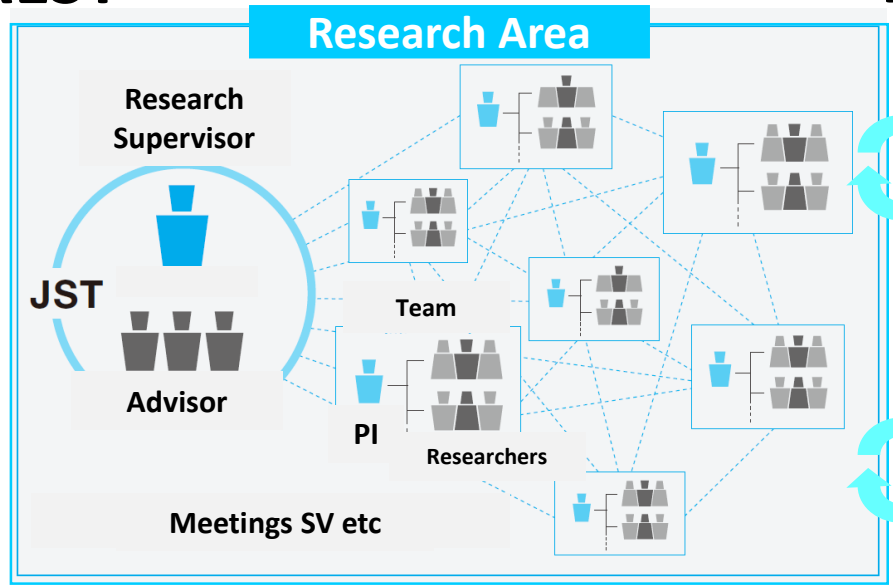
- Green Innovation
- Life Innovation
- Nanotechnology and Materials Science
- ICT
- S&T for Society and Social Infrastructure

Towards Science and Technology Innovation

CREST and PRESTO

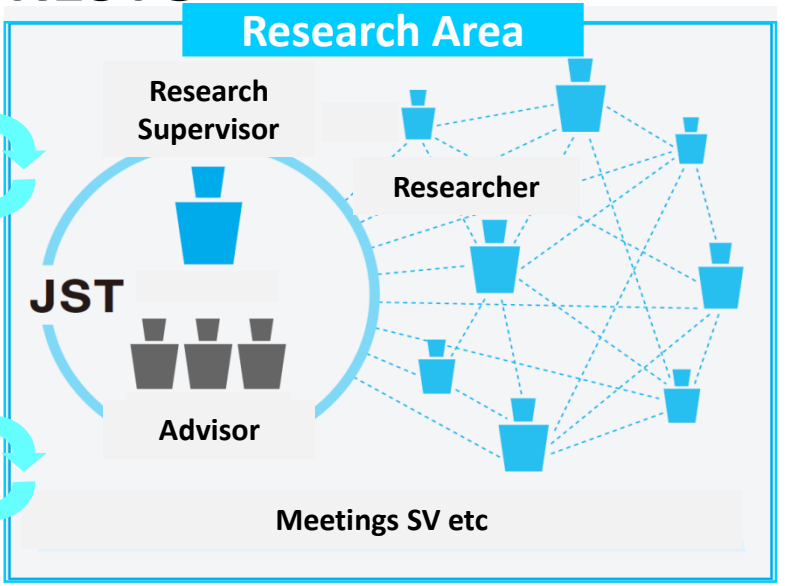
Strategic Objectives by MEXT

CREST Team Oriented



On-Going Research Area: 37
On-Going Research Projects: 431
As of March 2015

PRESTO Individual Basis



On-Going Research Area: 27
On-Going Research Projects: 692
As of March 2015

Research Type	Budget per year	Total Budget	Research Period
CREST	\30 - 100 Million /yr	\150 - 500 Million	~ 5.5 years
PRESTO	\10 Million /yr	\30 - 40 Million	~ 3.5 years

Promotion of Global Activities

Supplemental Funding for Global Activities

Goal:

Improve and expand CREST and PRESTO Research to accelerate the achievement of Strategic Objectives

Implementation:

- In FY2014, supplemental funding supported about 30 international symposiums and about 50 research exchanges/joint research projects.
- Further more, JST has collaborated with FA through supplemental funding scheme.

Promotion of Global Activities

Allocation of Supplemental Funding through the international collaborations with Funding Agencies

In FY2013, JST supported 12 research projects conducted by CREST researchers and NIH researchers under the framework agreement between JST and NIH

JST-CREST and ANR (France) have joined DFG Priority Program "SPPEXA" Software for Exascale Computing.
In FY 2014, JST-CREST, DFG, ANR opened joint call and proposals are now under selection process.

JST-CREST and JST-PRESTO have joined NSF PIRE2014.
Proposals are now under selection process.

Conclusion

- The fundamental concept of CREST and PRESTO is "Virtual Research Institution."
- CREST and PRESTO encourage global activities do maximize their research outcomes.
- "Supplemental Funding Scheme" is one of the most effective tools to promote global activities.

We are waiting for proposals through this workshop!

Thank you for your attention

FY 2015 (Term 1) **Call for Proposals**

Application deadlines:

CREST: **Tuesday, May 19, 2015 at 12:00 noon, Japan time**

PRESTO: **Tuesday, May 12, 2015 at 12:00 noon, Japan time**

For more information:

http://www.senryaku.jst.go.jp/teian-en.html

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

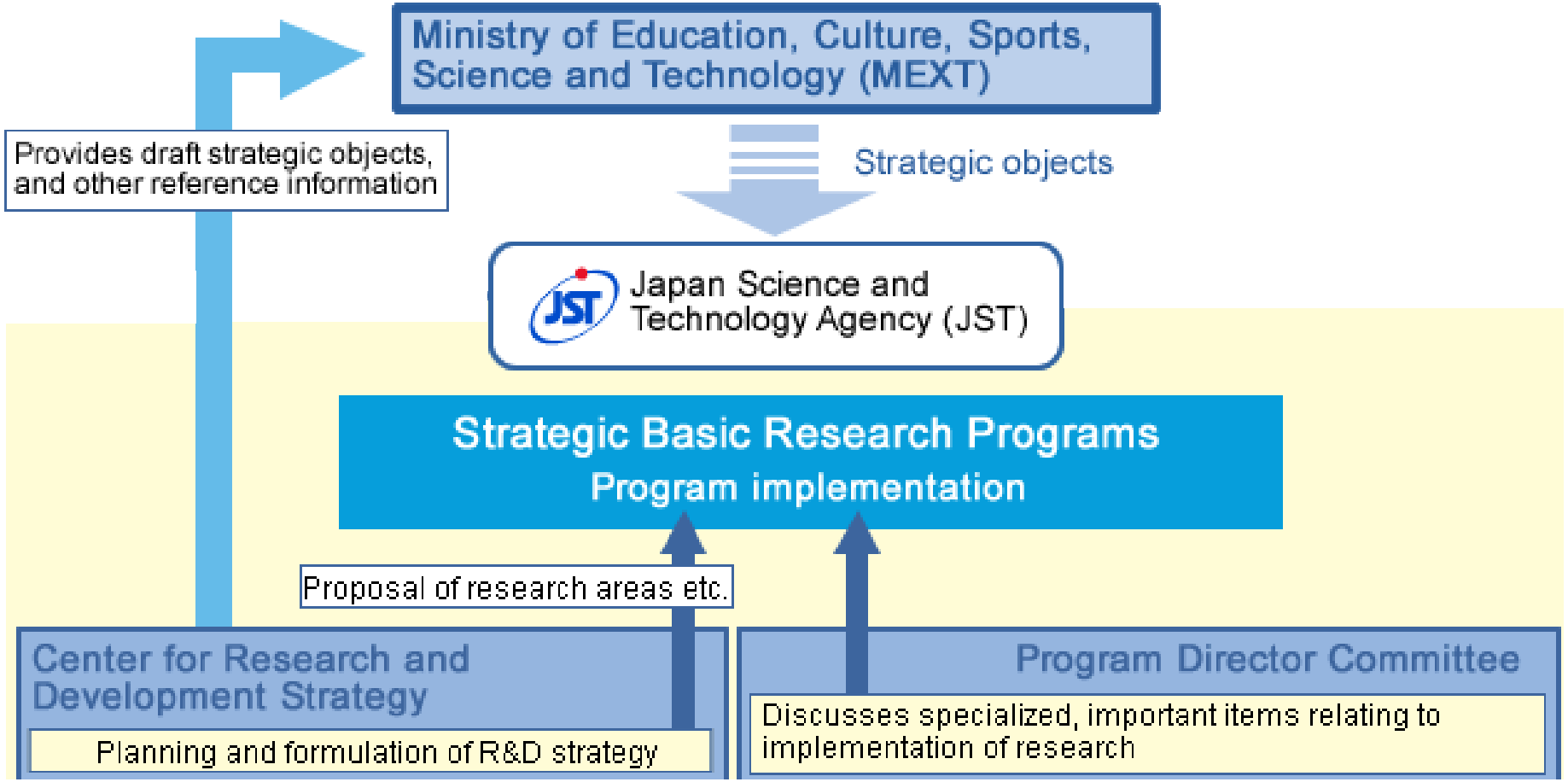
E-mail (preferred): rp-info@jst.go.jp

Telephone (for urgent matters): 03-3512-3530

(Office hours: 10:00-12:00/13:00-17:00, except Saturdays, Sundays, and National Holidays)

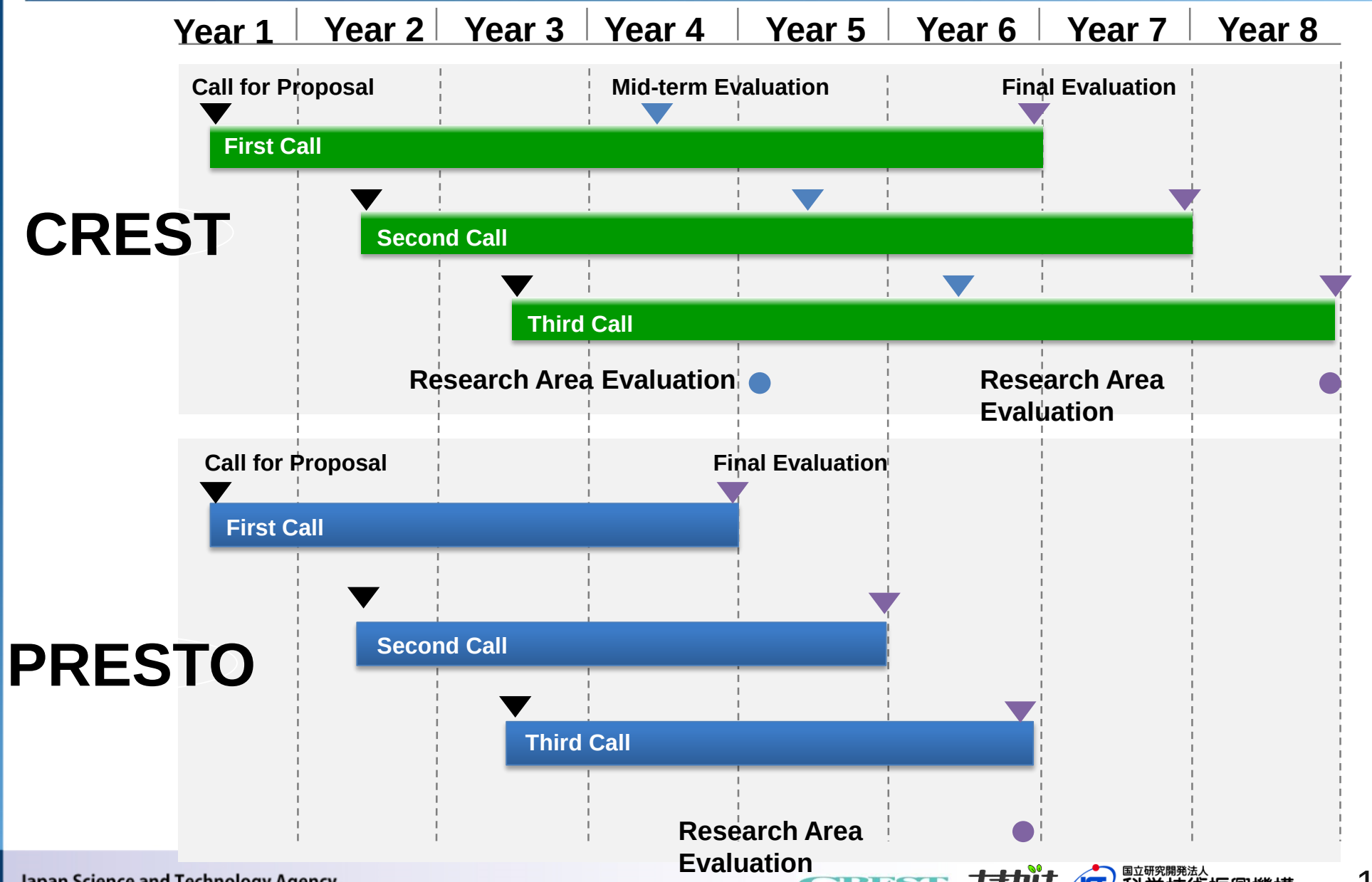
Reference

Governing System of Strategic Basic Research Programs

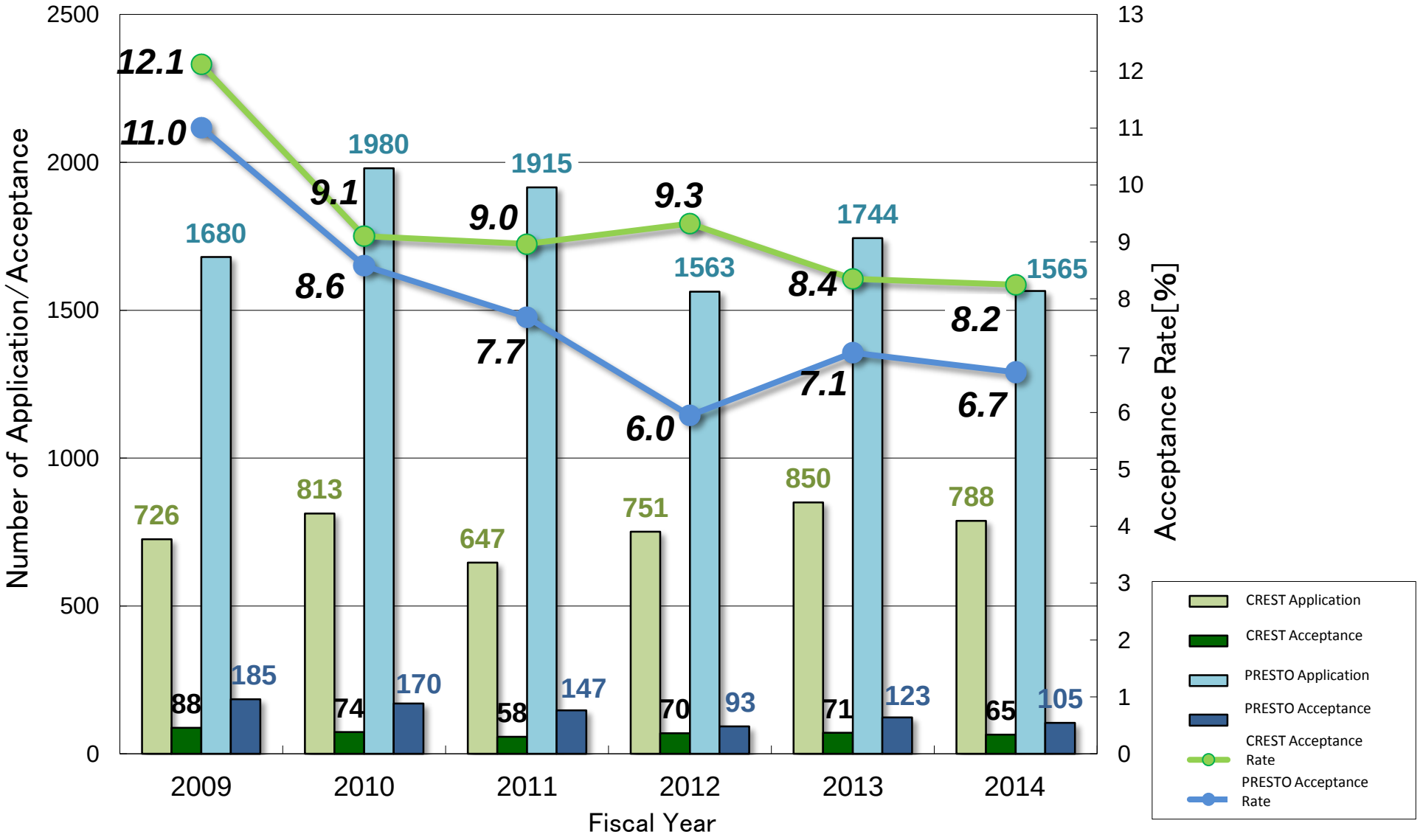


http://www.jst.go.jp/kisoken/en/about/index.html

Typical Operation of CREST and PRESTO



Statistics of CREST and PRESTO



On-going Research Areas

Research Areas 37 Research Themes 431

Research Area	Research Supervisor Deputy Research Supervisor	First Year	Projects
Creation of Innovative Core Technology for Manufacture and Use of Energy Carriers from Renewable Energy	Koichi Eguchi Professor, Graduate School of Engineering, Kyoto University	FY2013	5
Phase Interface Science for Highly Efficient Energy Utilization	Nobuhide Kasagi Professor Emeritus The University of Tokyo / Principal Fellow, CRDS, JST	FY2011	32
Creation of Essential Technologies to Utilize Carbon Dioxide as a Resource Through the Enhancement of Plant Productivity and the Exploitation of Plant Products	Akira Isogai Professor Emeritus, Nara Institute of Science and Technology	FY2011	31
Establishment of Core Technology for the Preservation and Regeneration of Marine Biodiversity and Ecosystems	Isao Koike Professor Emeritus, The University of Tokyo	FY2011	28
Creation of Basic Technology for Improved Bioenergy Production through Functional Analysis and Regulation of Algae and Other Aquatic Microorganisms	Tadashi Matsunaga President, Tokyo University of Agriculture and Technology	FY2010	28
Creative Research for Clean Energy Generation Using Solar Energy	Masafumi Yamaguchi Distinguished Professor, Toyota Technological Institute	FY2009	36
Innovative Technology and System for Sustainable Water Use	Shinichiro Ohgaki President, Japan Water Research Center Miiko Yoda Senior Chief Engineer, Information & Control Systems Company, Hitachi Limited	FY2009	39
Creation of Innovative Technologies to Control Carbon Dioxide Emissions	Haru Yasui President, National Institute of Technology and Evaluation/ Vice Rector Emeritus, United Nations University	FY2008	—
Innovative Technology Platforms for Integrated Single Cell Analysis	Sumio Sugano Professor, Graduate School of Frontier Sciences, The University of Tokyo	FY2014	7
Creation of Innovative Technology for Medical Applications Based on the Global Analyses and Regulation of Disease-Related Metabolites	Takao Shimizu Director-General, Research Institute, National Center for Global Health and Medicine	FY2013	26
Innovation for Ideal Medical Treatment Based on the Understanding of Maintenance, Change and Breakdown Mechanisms of Homeostasis among Interacting Organ Systems	Ryozo Nagai President, Jichi Medical University	FY2012	23
Structural Life Science and Advanced Core Technologies for Innovative Life Science Research	Keiji Tanaka Director, Tokyo Metropolitan Institute of Medical Science	FY2012	39
Development of Fundamental Technologies for Diagnosis and Therapy Based upon Epigenome Analysis	Masayuki Yamamoto Professor, Tohoku University Toshikazu Ushijima Chief of Division, National Cancer Center Research Institute	FY2011	37
Creation of Fundamental Technologies for Understanding and Control of Biosystem Dynamics	Tadashi Yamamoto Professor, Okinawa Institute of Science and Technology (OIST)	FY2011	45
The Creation of Basic Medical Technologies to Clarify and Control the Mechanisms Underlying Chronic Inflammation	Masayuki Miyasaka Professor, Osaka University	FY2010	40
Elucidation of the Principles of Formation and Function of the Brain Neural Network and Creation of Control Technologies	Seiji Ozawa Professor, Takasaki University of Health and Welfare	FY2009	30
Fundamental Technologies for Medicine Concerning the Generation and Regulation of Induced Pluripotent Stem (iPS) Cells	Toshio Suda Professor, Keio University	FY2008	37

On-going Research Areas

Research Areas 27 Research Themes 692

Reseach Area	Research Supervisor	First Year	Research Term	Projects
Creation of Innovative Core Technology for Manufacture and Use of Energy Carriers from Renewable Energy	Koichi Eguchi Professor, Graduate School of Engineering, Kyoto University	FY2013	2013-2018	4
Phase Interfaces for Highly Efficient Energy Utilization	Nobuhide Kasagi Professor Emeritus, The University of Tokyo	FY2011	2011-2017	32
Creation of Essential Technologies to Utilize Carbon Dioxide as a Resource through the Enhancement of Plant Productivity and the Exploitation of Plant Products	Akira Isogai Professor Emeritus, Nara Institute of Science and Technology	FY2011	2011-2016	31
Creation of Basic Technology for Improved Bioenergy Production through Functional Analysis and Regulation of Algae and Other Aquatic Microorganisms	Tadashi Matsunaga President, Tokyo University of Agriculture and Technology	FY2010	2010-2015	28
Photoenergy Conversion Systems and Materials for the Next Generation Solar Cells	Shuzi Hayase Professor, Kyushu Institute of Technology	FY2009	2009-2016	36
Chemical Conversion of Light Energy	Haruo Inoue Executive Director / Professor, Center for Artificial Photosynthesis, Tokyo Metropolitan University	FY2009	2009-2016	39
Innovative Technology Platforms for Integrated Single Cell Analysis	Itaru Hamachi Professor, Graduate School of Engineering,, Kyoto University	FY2014	2014-2019	—
Creation of Innovative Technology for Medical Applications Based on the Global Analyses and Regulation of Disease-Related Metabolites	Yoshiya Oda President, Biomarkers and Personalized Medicine Core Function Unit, Eisai Product Creation Systems	FY2013	2013-2018	7
Elucidation and Regulation in the Dynamic Maintenance and Transfiguration of Homeostasis in Living Body	Masato Kasuga President, National Center for Global Health and Medicine	FY2012	2012-2017	26
Structural Life Science and Advanced Core Technologies for Innovative Life Science Research	Soichi Wakatsuki Professor, SLAC National Accelerator Laboratory / Stanford University	FY2012	2012-2017	23
Design and Control of Cellular Functions	Hiroki Ueda Professor, Graduate School of Medicine and Faculty of Medicine, The University of Tokyo	FY2011	2011-2016	39
Elucidation and Control of the Mechanisms Underlying Chronic Inflammation	Kiyoshi Takatsu Director, Toyama Prefectural Institute of Pharmaceutical Research	FY2010	2010-2015	37
Development and Function of Neural Networks	Fujio Murakami Specially Appointed Professor, Osaka University	FY2009	2009-2016	45
Epigenetic Control and Biological Functions	Tsunehiro Mukai Professor Emeritus, Saga University	FY2009	2009-2016	40
Understanding Life by iPS Cells Technology	Shin-ichi Nishikawa Advisor, JT Biohistory Research Hall / President, All About Science Japan	FY2008	2008-2015	30
Decoding and Controlling Brain Information	Mitsuo Kawato Director, ATR Fellow, ATR Brain Information Communication Research Laboratory Group	FY2008	2008-2015	37
Innovative Nano-Electronics through Interdisciplinary Collaboration among Material, Device and System Layers	Takayasu Sakurai Professor, Institute of Industrial Science, The University of Tokyo Naoki Yokoyama (Deputy Research Supervisor) Fellow, FUJITSU LABORATORIES LTD.	FY2013	2013-2018	13
Hyper-Nano-Space Design toward Innovative				