

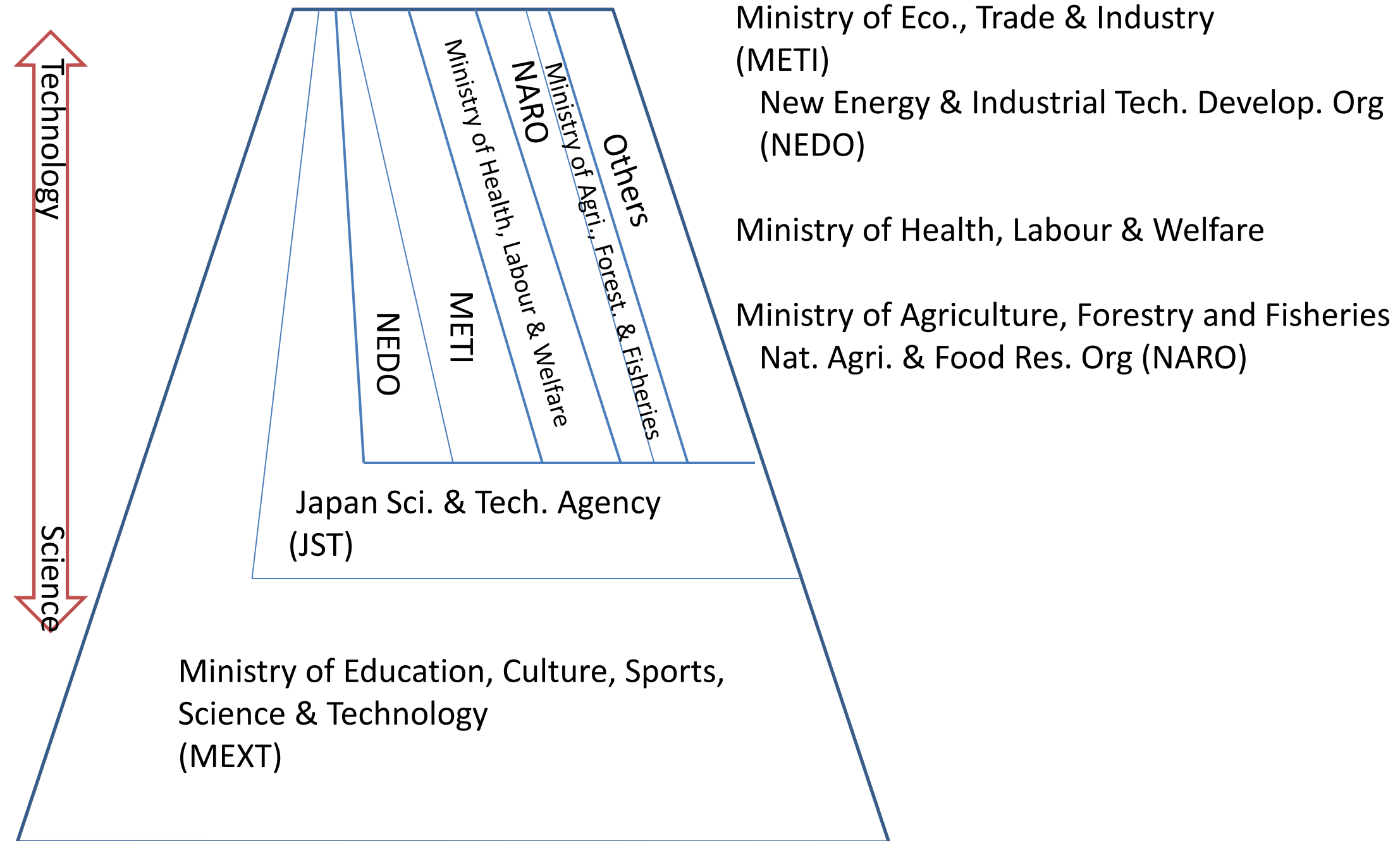
Research Grants from Japan Science and Technology Agency

B250, Center Bldg, OIST /12 April 2013

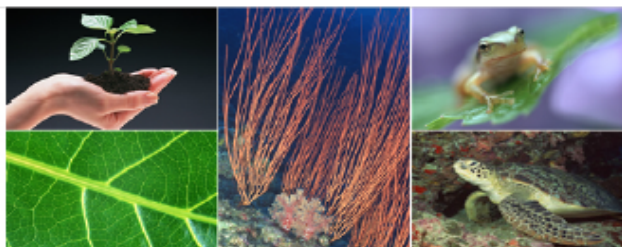


OKINAWA INSTITUTE OF SCIENCE AND TECHNOLOGY GRADUATE UNIVERSITY

Outline of Japanese Public Funds for Researches



Promoting the creation of innovation



Strategic Basic Research Programs

[CREST](#)



Pursuing Team-Oriented Research that Strives to Generate Significant Impact on the Development of Science and Technology
JST establishes Research Areas based on the strategic sectors of Sports, Science and Technology (MEXT), and appoints a Research Director to manage the Research Area. After which JST calls for proposals in each Research Area, after which JST and manages the Research Area by coordinating research projects (research teams), exchanging opinions with Research Directors, and so on. CREST is a team-oriented research program that aims to generate significant impact on the development of science and technology.

Inquiries: CREST / Department of Innovation Research
crest@jst.go.jp

[Research Area/Projects](#)

[PRESTO](#)

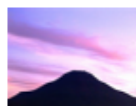


Promoting Individual Research to Nurture the Seeds of Future Innovation
JST selects the Research Areas it will promote in line with the targeted Basic Research Program, research proposals are submitted to the management of a Research Supervisor, individual researchers receive advice from their Research Supervisor and Research Area. Research Areas have opportunities to interact with other researchers, thereby encouraging cross-pollination of research ideas.

Inquiries: PRESTO (Sakigake) / Department of Research Programs
presto@jst.go.jp

[Research Area/Projects](#)

[ERATO](#)



Outstanding Research Leaders Strive to Generate the Seeds of Future Innovation
In line with the Strategic Sectors set by MEXT, JST identifies outstanding research leaders, then appoints Research Directors to generate the seeds of new technologies, then appoints Research

research area. They formulate their own detailed frameworks for research and they also recruit researchers to contribute to the realization of their research vision, leading their teams directly in the pursuit of this research. Participation and cooperation are drawn from a broad range of sources, including JST, industry, academia and government agencies, and may include overseas participation. Hence, this program encourages a collaborative structure and the management of joint projects.

Inquiries: Department of Research
eratowww@jst.go.jp

[Research Area/Projects](#)

[Yamanaka iPS Cell Special Project](#) Japanese text only



Generation of Human Induced Pluripotent Stem (iPS) Cells
In 2007, as part of a JST CREST project, a research group led by Professor Shinya Yamanaka successfully established iPS cells by introducing reprogramming factors into fibroblasts taken from adult skin. Prior to the establishment of iPS cells, research in regenerative medicine faced significant ethical issues relating to the use of embryonic stem (ES) cells derived from sacrificed early-stage embryos. iPS cells hold great potential for advancement in regenerative medicine, transplant therapy, and may also clear the way for the treatment of patients using their own cells, thereby eliminating the risk of transplant rejection. With the aim of promoting in vitro pathological studies, the project has become involved in specific iPS cells using cells obtained from patients and differentiating these into various cell types. The project's drug discovery project uses disease-specific iPS cells in order to develop therapeutic methods and drugs to help patients with intractable diseases. There are also areas for iPS cell technology, and the project has been conducting joint research with other research groups resolved before clinical use.

[Promoting Globalization on Strategic Basic Research Programs](#)



As a core organization for implementing Japan's science and technology policy, the Science and Technology Agency has an active policy of 'Advancing the Globalization and International Activities', in line with the objectives of the Science and Technology Basic Plan. JST Research Programs aim to promote effective research to achieve the targets of the plan and maintain a high level of research internationally.

Inquiries: Department of Research

[Advanced Low Carbon Technology Research and Development Program](#)



Generating New Technologies That Will Significantly Contribute to the Reduction of Greenhouse Gas Emissions
ALCA promotes challenging R&D creating advanced technology, which contributes to the reduction of greenhouse gas emissions over the medium- to long-term. To achieve this, the program promotes R&D leading to breakthroughs and major transformational technologies. The program promotes R&D based on new scientific and technical insights that have significant potential to contribute to the reduction of greenhouse gas emissions. The program generates R&D results that will lead to "green innovation."

Research Areas
Solar Cell and Solar Energy-based Systems
Superconducting Systems
Power Storage Devices
Heat-Resistant Materials and High Performance Recycled Steel Materials

Biotechnology
Innovative Energy-Saving and -Producing Chemical Processes
Innovative Energy-Saving and -Producing Systems and Devices

Inquiries: Department of Green Innovation (ALCA)
alca@jst.go.jp

[Research Projects](#)

[Research Institute of Science and Technology for Society \(RISTEX\)](#)



Fostering Innovation to Address Social Challenges through Science and Technology
RISTEX seeks to benefit society by pursuing R&D to generate results that will contribute to addressing issues facing mankind and society. These include global warming and other environmental problems, energy, the declining birthrate and aging society, and safety and security. While drawing together a wide range of parties involved in developing solutions to societal issues and building networks of people from relevant fields, RISTEX conducts pilot programs of hands-on approaches with a view to developing insights and methods that will generate innovative solutions to societal issues. RISTEX also supports the social application of the R&D results thus obtained, in order to enable other regions and organizations to pursue similar solutions.

Inquiries: RISTEX / Planning and Management Office
ristex@ristex.jp

[Major R&D](#)

[JST-CIRM Collaborative Research Program](#)



JST and California Institute for Regenerative Medicine (CIRM) work together to establish and support a Japan-California collaborative research program in order to advance iPS cell research, develop therapies, and conduct clinical trials. JST and CIRM provide research funds to research teams in Japan and California, respectively, according to their own rules and regulations. Under this scheme, JST and CIRM follow their own application call and evaluation processes, with research proposals approved by both agencies funded. JST and CIRM also organize workshops to facilitate collaborative research.

JST Activities that Contribute to Innovation in Science & Technology

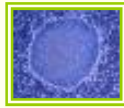
Research based on free-thinking of each researcher

<JST's seamless activities for creating innovation>

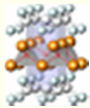
Creating advanced technology

Promotes targeted basic research to achieve strategic objectives set by the government.

- Strategic Basic Research Programs
- Life Science Database Integration Project



iPS cells



New types of high-temperature superconductor

Promoting technology transfer and innovation

Links universities and industry to share research results with society.

- Creating a platform to drive innovation
- Utilizing University IP to drive innovation



anti-influenza mask



Blue LED

Practical application

Technology Development

Industries

Research Development for Creation of Innovation

Promoting dissemination of scientific and technological information

Provides useful information to researchers and supports research activities.



Promotion and support of international research cooperation

Supports international science and technology researches.

Promoting science communication

Promotes science and technology related educational support and communication.

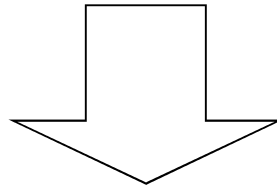


Infrastructure Development for promoting innovation creation

Strategic Basic Research Programs

This is a competitive funding system for promoting directed basic research in strategic, prioritized fields of science and technology. The aim is to stimulate future innovation in science and technology, and create new technologies to meet social and industrial needs.

In line with national science and technology policies, as well as social and economic needs, the government (MEXT) sets **strategic sectors**.



JST establishes **research areas** that are to be promoted under the strategic sectors, then also appoint **research supervisors**.

文部科学省平成 25 年度戦略目標 MEXT Strategies on Science and Technology FY2013

再生可能エネルギーの輸送・貯蔵・利用に向けた革新的エネルギーキャリア利用基盤技術の創出

Creation of innovative technology infrastructure for the use of energy carrier toward transportation, storage, and use of renewable energy

情報デバイスの超低消費電力化や多機能化の実現に向けた、素材技術・デバイス技術・ナノシステム最適化技術等の融合による革新的基盤技術の創成

Creation of innovative technology infrastructure by fusing materials technology, device technology, and nano systems optimization technology, etc. toward realization of ultra-low power consumption and multi-functionality of information devices.

疾患実態を反映する生体内化合物を基軸とした創薬基盤技術の創出

Creation of technology infrastructure for drug discovery on the axis of compounds in vivo reflecting the actual situation of diseases.

選択的物質貯蔵・輸送・分離・変換等を実現する物質中の微細な空間空隙構造制御技術による新機能材料の創製

Development of new functional materials with fine void space structure control technology in materials to achieve selective storage, transportation, separation, and conversion of materials, etc.

分野を超えたビッグデータ利活用により新たな知識や洞察を得るための革新的な情報技術及びそれらを支える数理的手法の創出・高度化・体系化

Creation, sophistication, and systematization of innovative information technology and mathematical methods to support it to obtain new knowledge and insights by utilization of big data beyond fields.

さきがけ PRESTO

Precursory Research for Embryonic Science and Technology

研究期間 3年 Research Period 3 Years

研究費総額4千万円 Total Research Budget 40 million yen

9研究領域で採択予定は90件程度 In 9 Research fields, selecting 90~ Themes

Own salary may be included (self employment)

Research Assistant salary may be included as a part of the Research Budget

Q&A サラリーは4千万の内数ではなく別途にJST規定により付加される

PI's salary will be provided as addition to the Research Budget

Crest

Core Research for Evolutionary Science and Technology

研究期間 5年 Research Period 5 Years

研究費総額 1億5千万円 ~ 3億円未満 Total Research Budget 150-300 million yen

(年平均3千万円 ~ 6千万円程度 yearly average 30-60 million yen)

3億円 ~ 5億円程度 Total Research Budget 300-500 million yen

(年平均6千万円 ~ 1億円程度 yearly average 60-100 million yen)

各研究領域における採択件数は、3 ~ 8件程度 3 to 8 themes in each research areas

Post Doc & Research Assistant salary may be included

Q&A 自身のサラリーは想定されていない。常勤の雇用されている研究者が応募するものなので、サラリーは所属機関から既に払われているものとなる。

Hence eligibility for applicants are full time employee of research organization, salary for PI may not be included.

A-STEP Program, feasibility study 研究成果最適展開支援プログラム

(Adaptable and Seamless Technology Transfer Program through Target-driven R&D)

Seeds Screening Type 探索タイプ

joint application with Coordinator コーディネーターとの共同出願

1.7 million yen or 3.0 million yen (max)

for 1 year

Personnel cost may be included

500 themes

Seeds Actualization Type シーズ顕在化タイプ

joint application with Business sector 企業との共同出願

8.0 million yen or 10.0 million yen (max)

for 1 year

Personnel cost may be included

50 themes

S-Innovation Program S-イノベ 戦略的イノベーション創出推進プログラム

70 million

for 10 years

5 themes

Members of Business Development Section (Dr T. Ichikawa) will support your idea----

文部科学省平成 25 年度戦略目標 MEXT Strategies on Science and Technology FY2013

再生可能エネルギーの輸送・貯蔵・利用に向けた革新的エネルギーキャリア利用基盤技術の創出

Creation of innovative technology infrastructure for the use of energy carrier toward transportation, storage, and use of renewable energy

情報デバイスの超低消費電力化や多機能化の実現に向けた、素材技術・デバイス技術・ナノシステム最適化技術等の融合による革新的基盤技術の創成

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分野を超えたビッグデータ利活用により新たな知識や洞察を得るための革新的な情報技術及びそれらを支える数理的手法の創出・高度化・体系化

Creation, sophistication, and systematization of innovative information technology and mathematical methods to support it to obtain new knowledge and insights by utilization of big data beyond fields.

CREST& PRESTO: List of existing research areas expected to be calling for proposals this year.

*This year's new research areas will be published in application guideline (to be available soon).

CREST

Research Areas	Research Supervisors (Advisors)	Strategic Sectors (Objectives)
Creation of fundamental theory and technology to establish a cooperative distributed energy management system and integration of technologies across broad disciplines toward social application	Masayuki Fujita Professor, Graduate School of Engineering, Tokyo Institute of Technology	Creation of theory, mathematical model, and fundamental technology to establish a cooperative distributed energy management system, which enables the optimization of demand and supply for various energies including renewable energy
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	Integrated clarification of the maintenance and change mechanisms of dynamic homeostasis in the body and creation of technology to understand and regulate complex dynamic homeostasis to achieve preventive medicine, appropriate diagnosis and treatment
Structural life science and advanced core technologies for innovative life science research	Keiji Tanaka Director, Tokyo Metropolitan Institute of Medical Science	Creation of new technologies for breakthrough in understanding and predicting biological activities and intermolecular interactions by means of "Novel Structural Life Science" that contributes to new medical treatment and prevention of various diseases, food safety enhancement and environmental improvement
Establishment of Molecular Technology towards the Creation of New Functions	Hisashi Yamamoto Professor, Chicago University / Chubu University	Establishment of molecular technology, which is the free control of molecules to bring innovation to environmental and energy materials, electronic materials, and health and medical materials
Phase Interface Science for Highly Efficient Energy Utilization	Nobuhide Kasagi Principal fellow, Center for Research and Development Strategy, Japan Science and Technology Agency Kazuhito Hashimoto (Deputy Research Supervisor) Professor, School of Engineering, The University of Tokyo	To realize breakthroughs in phase-interface phenomena and create basic technologies for high-functionality interface that will result in dramatic advancements in highly-efficient energy utilization

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 President, Nara Institute of Science and Technology	Creation of basic technologies for utilizing plant photosynthetic functions and biomass that will enable the actualization of efficient carbon dioxide utilization
Establishment of core technology for the preservation and regeneration of marine biodiversity and ecosystems	Isao Koike Ryukyu University	Creation of basic technologies for understanding marine ecology highly efficiently and forecasting marine life changes to conserve and regenerate the marine biodiversity required for sustainable usage of ocean resources
Development of Fundamental Technologies for Diagnosis and Therapy Based upon Epigenome Analysis	Masayuki Yamamoto Professor, Graduate School of Medicine, Tohoku University Toshikazu Ushijima (Deputy Research Supervisor) Deputy Director, National Cancer Center Research Institute	Creation of the basic technologies for disease analysis and elucidation of stem cell differentiation mechanisms by using epigenomic comparison toward the realization of treatments and regenerative medicine used to prevent, diagnose, and treat diseases
Creation of Fundamental Technologies for Understanding and Control of Biosystem Dynamics	Tadashi Yamamoto Professor, Okinawa Institute of Science and Technology Graduate University	Creation of the technology systems to have absolute control of cells and cell populations by reproducing cell kinetics in silico/in vitro in order to achieve an integrated understanding of life phenomena and realize safe and highly effective treatments among other benefits

PRESTO

Research Areas	Research Supervisor (Advisor)	Strategic Sectors (Objectives)
Elucidation and regulation in the dynamic maintenance and transfiguration of homeostasis in living body	Masato Kasuga President, National Center for Global health and Medicine	Integrated clarification of the maintenance and change mechanisms of dynamic homeostasis in the body and creation of technology to understand and regulate complex dynamic homeostasis to achieve preventive medicine, appropriate diagnosis and treatment
Structural life science and advanced core technologies for innovative life science research	Soichi Wakatsuki Deputy Director, Structural Biology Research Center, High Energy Accelerator Research Organization	Creation of new technologies for breakthrough in understanding and predicting biological activities and intermolecular interactions by means of "Novel Structural Life Science" that contributes to new medical treatment and prevention of various diseases, food safety enhancement and environmental improvement
Molecular technology and creation of new	Takashi Kato	Establishment of molecular technology, which is the free control of

functions	Professor, School of Engineering, The University of Tokyo	molecules to bring innovation to environmental and energy materials, electronic materials, and health and medical materials
Phase Interfaces for Highly Efficient Energy Utilization	Kazuhito Hashimoto Professor, School of Engineering, The University of Tokyo Nobuhide Kasagi (Deputy Research Supervisor) Principal fellow, Center for Research and Development Strategy, Japan Science and Technology Agency	To realize breakthroughs in phase-interface phenomena and create basic technologies for high-functionality interface that will result in dramatic advancements in highly-efficient energy utilization
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 President, Nara Institute of Science and Technology	Creation of basic technologies for utilizing plant photosynthetic functions and biomass that will enable the actualization of efficient carbon dioxide utilization
Design and Control of Cellular Functions	Hiroki Ueda Project Leader, Center for Developmental Biology, Riken	Creation of the technology systems to have absolute control of cells and cell populations by reproducing cell kinetics in silico/in vitro in order to achieve an integrated understanding of life phenomena and realize safe and highly effective treatments among other benefits

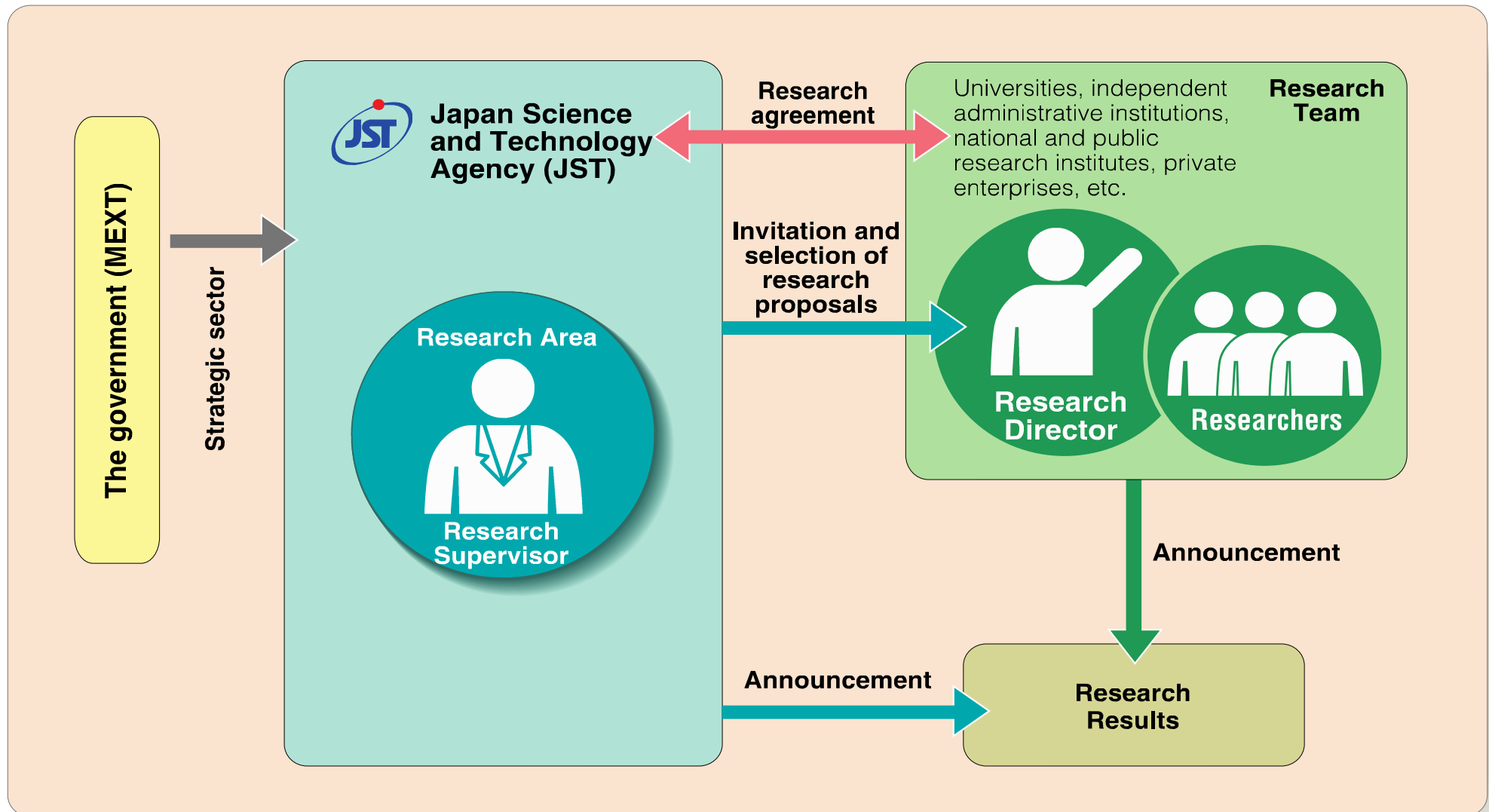
LINKS: <http://www.senryaku.jst.go.jp/teian/en/top/ryoiki.html#crest> (English) <http://www.senryaku.jst.go.jp/teian/top/ryoiki.html> (Japanese)

Application flow:

- Call for applications to be published: soon
- Application deadline: END May
- Result of 1st screening: Late June – Early July (TBD)
- Interview/hearing : Late June – Early August (TBD)
- Commencement of research: In October

CREST

In CREST, JST forms research teams and promotes research with a view to meeting strategic sectors established by the government.



From research proposals to the start of the research

Details of Information about the deadline for proposals, and an outline of the invitation are published on the JST website (<http://www.jst.go.jp/EN/index.html>).

Call for research proposals

Research proposals are invited for each research area.

Documentary selection

Research supervisors, research area advisors and others select candidates for interview on the basis of submitted research proposals.

Interview selection

Research supervisors and research area advisors interview prospective research directors.

Selection

Based on the results of selection by research supervisors, JST decides to start the selected research projects.

Through the research supervisors, research plans are drawn up for each research project.

Creating research plans

Research agreements are concluded with the institutes to which the researchers belong.

Conclusion of research agreements

Research is implemented in the various research sites.

Implementation of research

Crest

Research Area: Creation of Fundamental Technologies for
Understanding and Control of Biosystem Dynamics

Research Supervisor: **Tadashi Yamamoto** (Professor, OIST)

Awardees of FY2012

Yuichi Iino, Professor, University of Tokyo

Ryoichiro Kageyama, Professor, Kyoto University

Sinya Kuroda, Professor, University of Tokyo

Minoru S.H. Ko, Professor, Keio University

Shigeru Kondo, Professor, Osaka University

Presto

Research Area: Epigenetic control and biological functions

1st Term Awardees

Kiyoe Ura, Associate professor, Graduate school of medicine, Osaka University

Mariko Ariyoshi, Associate Prof, Inst. for Integrated Cell-Material Sci (iCeMS), Kyoto University

Yuki Okada, Associate Prof, Lab of Path & Develop, Inst of Mol and Cell Biosci, Univ Tokyo

Akimitsu Okamoto, Associate Chief Scientist, Nuc Acid Chem Lab, RIKEN Adv Science Institut

Hiroaki Kato, Assistant Professor, School of Medicine, Shimane University

Masaya Oki, Associate Professor, Graduate school of Engineering, University of Fukui

Atsushi Kaneda, Associate Prof, Res Center for Advanced Sci and Tech, University of Tokyo

Hidetoshi Saze, Assistant Professor, Plant Epigenetics Unit, OIST

Takayoshi Suzuki, Professor Graduate School of Med Sci, Kyoto Pref University of Medicine

Miho Suzuki, Research Associate, Dep of Embryo, AICHI Human Service Cen, Inst dev Research

Makoto Tachibana, Associate Professor, Institute for Virus Research, Kyoto University

Yuichi Tsukada, Assistant Professor, Medical Institute of Bioregulation, Kyushu University

Kenichi Nishioka, Assistant Professor, Faculty of Medicine, Saga University

NON Japanese vs Japanese

KAKENHI
high-end
FY2012

Funding Categories	New/Continued	# NON Japanese Awardees	# Total Awardees
Young Scientist S	New	0	47
Scientific Res. S	Continued	0	340
	New	0	87
Innovative Areas	Continued	0	98
	New	0	21
Special Promoted	Continued	0	57
	New	0	18

Research Areas	# NON Japanese Awardees	# Total Awardees
Creation of fundamental theory and technology to establish a cooperative distributed energy management system and integration of technologies across broad disciplines toward social application	0	16
Innovation for Ideal Medical Treatment Based on the Understanding of Maintenance, Change and Breakdown Mechanisms of Homeostasis among Interacting Organ Systems	0	5
Structural life science and advanced core technologies for innovative life science research	0	6
Establishment of Molecular Technology towards the Creation of New Functions	0	4
Phase Interface Science for Highly Efficient Energy Utilization	1	9
Creation of essential technologies to utilize carbon dioxide as a resource through the enhancement of plant productivity and the exploitation of plant products	0	9
Establishment of core technology for the preservation and regeneration of marine biodiversity and ecosystems	1	11
Development of Fundamental Technologies for Diagnosis and Therapy Based upon Epigenome Analysis	0	14
Creation of Fundamental Technologies for Understanding and Control of Biosystem Dynamics	0	5

Research Areas	# NON Japanese Awardees	# Total Awardees
Elucidation and regulation in the dynamic maintenance and transfiguration of homeostasis in living body	1	10
Structural life science and advanced core technologies for innovative life science research	0	11
Molecular technology and creation of new functions	0	10
Phase Interfaces for Highly Efficient Energy Utilization	1	22
Creation of essential technologies to utilize carbon dioxide as a resource through the enhancement of plant productivity and the exploitation of plant products	0	21
Design and Control of Cellular Functions	0	10

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Chiaki CHIBANA, Ayano NAKAHODO
Akiko SOEMORI, Yoshio OKADA
Lab 1 level B (*moved!*)