独立行政法人
科学技術振興機構
Japan Science and Technology Agency

Press Conference

President of JST

July, 2012

The rolls of JST in the Age of Globalization

Contents

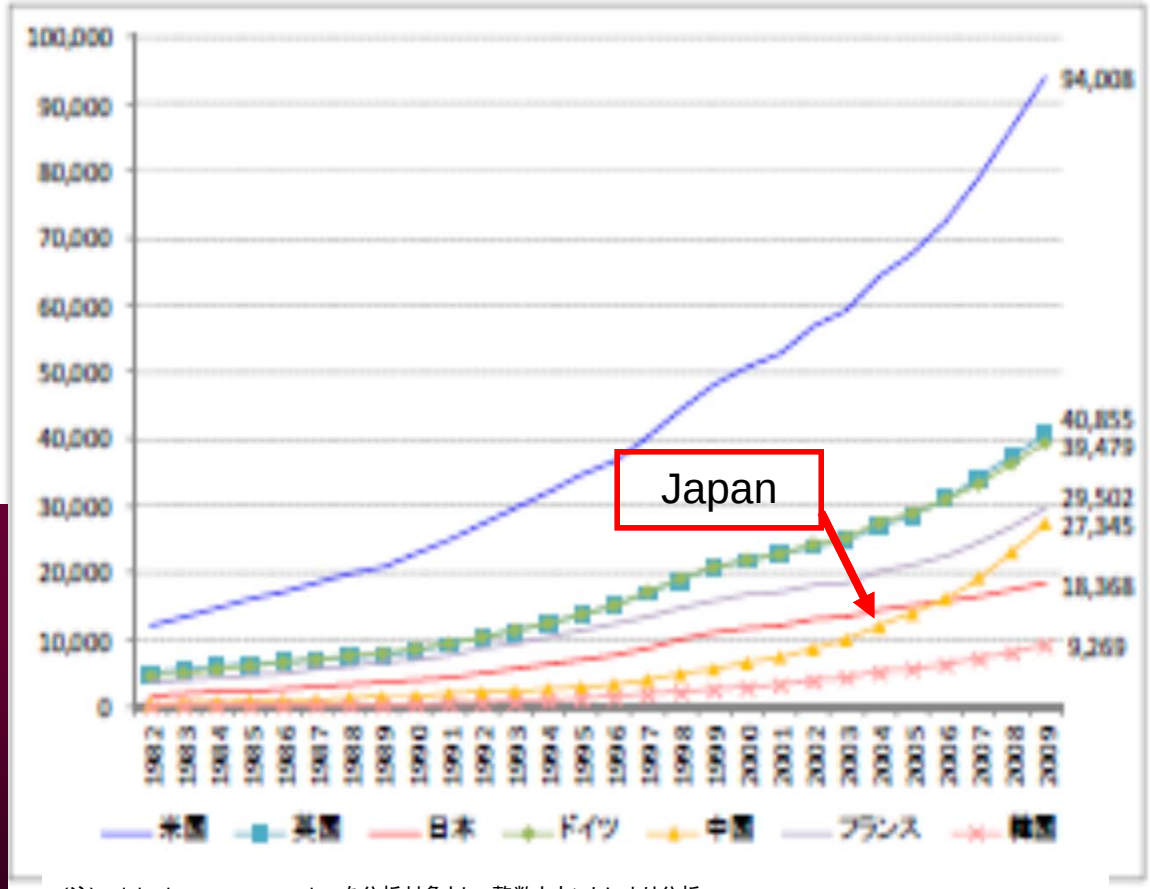
1. Status and Importance of Globalization

Status and Importance of Globalization-1

The appreciation rate of Japan's Number of International Joint paper is lower than other those of other major countries

Japan is a main player in R&D activities in the world?

Japanese R&D activities are left behind in the international community?



(注)article, letter, note, reviewを分析対象とし、整数カウントにより分析
3年異動平均値である。トムソン・ロイター社　Web of Scienceを元に科学技術政策研究所画集計

The Number of International Joint Paper

出典:「調査資料-204　科学研究のベンチマーキング　2011-論文分析で見る世界の研究活動の変化と日本の状況-」
(平成23年4月　文部科学省科学技術政策研究所　図表12)

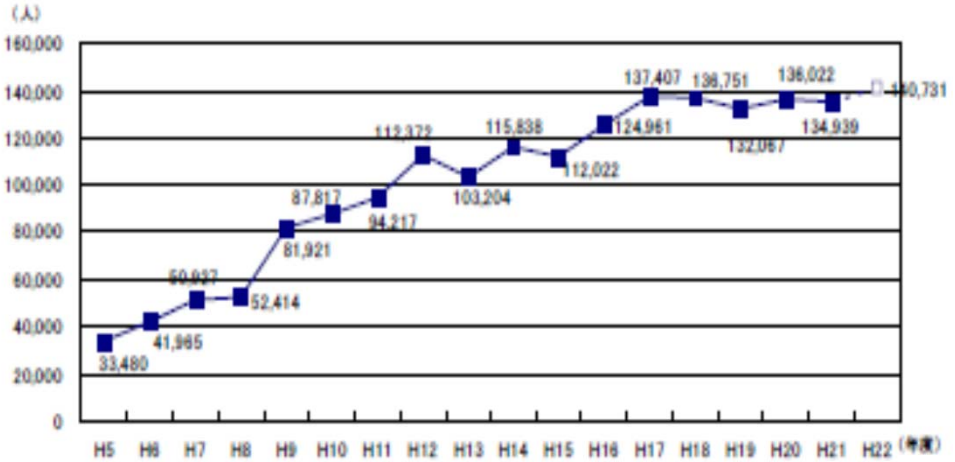
Status and Importance of Globalization-2

The number of Japanese researchers dispatched overseas has not show increase since 2005.

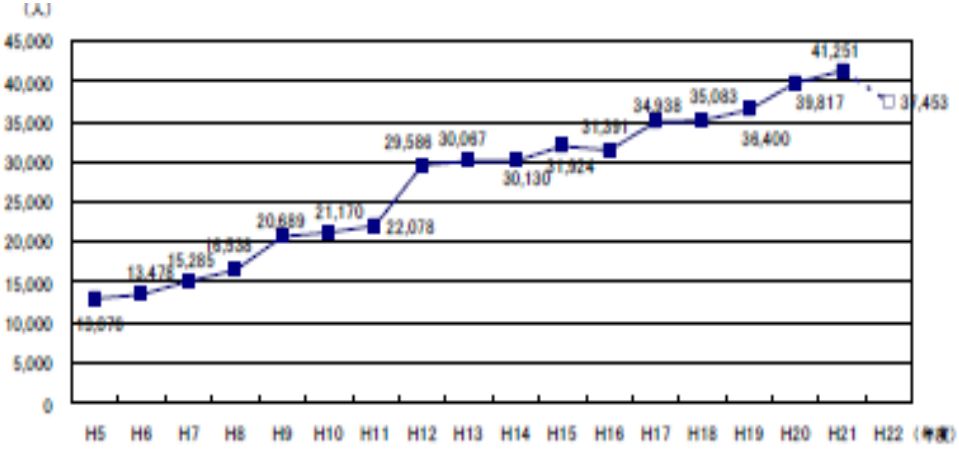
Japanese researchers do not demand the chance of international research exchanges or collaborative research?

These years, the number of dispatched researchers is about 140 thousands / year. While the number of accepted researchers is about 40 thousands, 1/3 of dispatched researchers

R&D environment in Japan is attractive enough?



The number of Japanese researchers dispatched overseas



The number of foreign researchers accepted in Japan

注：平成22年度のみポスドク・派遣研究員を含む

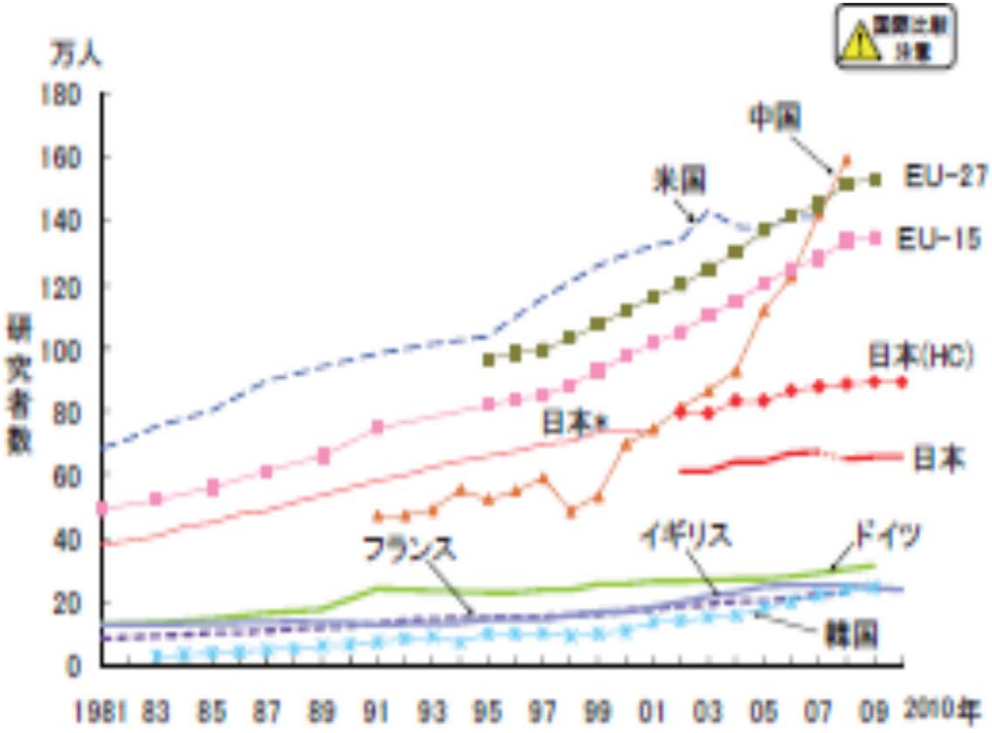
出典：「平成23 年度　文部科学省における基本的な政策の立案・評価に関する調査研究（研究者に対する東日本大震災の影響調査）報告書」
（平成23 年10 月　株式会社　三菱総合研究所）

Status and Importance of Globalization-3

We cannot expect the increase of researchers in Japan

In order to maintain the quality of R&D in Japan…..

We should make an effort to attract excellent researchers overseas to stay in Japan.



The number of researchers

出典:「調査資料-198 科学技術指標2011」
(平成23年8月文部科学省科学技術政策研究所)図表2-1-3

注:
1) 国の研究者数は各部門の研究者の合計値であり各部門の研究者の定義及び測定方法は国によって違いがある場合があるので、国際比較する際には注意が必要である。
2) 各国の値はFTE値である(日本についてはHC値も示した)
3) 人文社会科学を含む(韓国は2006年まで自然科学のみ)
4) 各国統計をもとに技術政策研究所が集計

Status and Importance of Globalization-4

Strategic development of international activities

Strategic Approach

Tackle common issues together and share the outcomes

Common Goal

- **Realize innovation and development**
  → Enhance the industrial competitiveness of Japan
- **Resolve global/regional issues and realize better quality of life**

New Measure

- Promote Open Innovative R&D activities through integrating strong elements both in Japan and overseas
  → Integration among the best
- Promote efficient R&D activities through sharing human resources, research resources, fund, Intellectual Properties etc.
  → Complementary Cooperation

Strategy for Cooperation with emerging / advanced countries / regions
Strategy for promotion of international brain circulation

2. Current International Activities of JST

Current International Activities of JST

Promotion of Bilateral Research Exchanges and Joint research

SICP
SICORP

JST-CIRM
共同研究プログラム

Promotion of Multilateral Cooperation

CONCERT JAPAN
Connecting and Coordinating European Research and Technology Development with Japan

the e-ASIA Joint Research Program

BELMONT FORUM

IHEC
International Human Epigenome Consortium

Promotion of R&D with developing countries in collaboration with JICA

Satreps
科学技術
途上国協力
地球のために、
未来のために

On-Top Funding for for Promoting International Collaboration

Promoting Globalization on Strategic Basic Research Programs

Promotion of Bilateral Research Exchanges and Joint research

Strategic International Cooperative Program（SICP）
Strategic International Collaborative Research Program（SICORP）

Japan (MEXT)

Ministry of Counterpart Country

Agreement

Agreement

Notice (Country & Field of Cooperation)

Notice (Country & Field of Cooperation)

JST

Counterpart Funding Agency

(Joint Call, Joint Review, Joint Interview etc.)

Apply ⇅ Support

Apply ⇅ Support

Researchers (Japan)

Research Exchange (SICP)

Joint Research (SICORP)

Researchers (Counterpart Country)

194 on-going projects in 23 countries・region

Your Partner Worldwide

Your Partner Worldwide

Recent Outstanding Achievements of Bilateral Research Exchanges and Joint research -1

独立行政法人 科学技術振興機構 Japan Science and Technology Agency

Green Innovation: Japan-China Research Exchange

Discovery of the High Photocatalytic Activity of Silver Phosphate

－ A step towards realizing artificial photosynthesis －

Project Title: Research and Development of Highly Efficient Photocatalytic Materials for Environmental Purification and Hydrogen Production Using Solar Light (SICP: FY2007-2010)

Achieved through a combination of material structure analysis techniques from Japan and synthetic materials and evaluation techniques from China

Ye Jinhua
Unit Director, Environmental Remediation Materials unit, National Institute for Materials Science

Zou Zhigang
Director, Ecomaterials and Renewable Energy Research Centre, Nanjing University

Nanotechnology and Materials: Japan-Finland Research Exchange

Clarification at the Atomic Level of the Difference in Recording Mechanism of Typical Optical Disc Materials

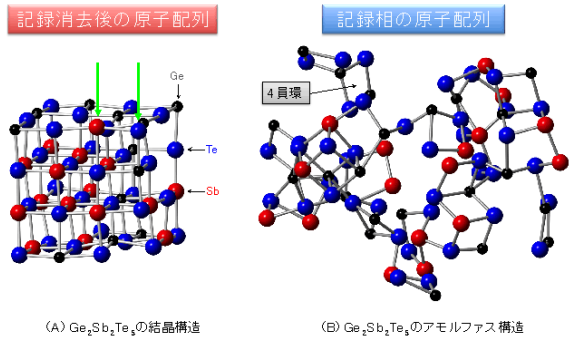
－ Providing the fundamental knowledge to accelerate the development of next-generation materials －

Project Title: Structural Analysis and Design of New Rapid Phase-Change Materials for Digital Versatile Disk (DVD) Media by a Combination of Density Functional Simulations and Synchrotron X-Ray Radiation Measurements (SICP: FY2009-2011)

Achieved through a combination of experimental techniques from Japan and theoretical analysis techniques from Finland

Shinji Kohara
Senior Chief Engineer, Research and Utilization Division, Japan Synchrotron Radiation Research Institute

Jaakko Akola
Research Fellow,
Tampere University of Technology



(A) $Ge_2Sb_2Te_5$の結晶構造　(B) $Ge_2Sb_2Te_5$のアモルファス構造

黒：Ge（ゲルマニウム）、赤：Sb（アンチモン）、青：Te（テルル）

Recent Outstanding Achievements of Bilateral Research Exchanges and Joint research -2

独立行政法人 科学技術振興機構 Japan Science and Technology Agency

ICT: Japan-France Joint Research

Development of Evaluation Board “SASEBO-W” for Evaluating Potential Risk of side channel attack

- Contribution towards formulations of experiment / evaluation environment of IC cards and so on -

Project Title: Security evaluation of Physically Attacked Cryptoprocessors in Embedded Systems (SICORP: FY2010-2012)

Achieved through a combination of measurement / evaluation technology for electric and electromagnetic waveform from Japan and simulator and development / evaluation technology for analytical algorithm.

Naofumi Homma
Associate Professor, GSIS, Tohoku University

J-Luc Danger
Professor, Telecom ParisTech

Life Innovation: Japan-Sweden Research Exchange

Development of a Method to Detect Intracellular Fluorescence of the Cancer Marker ‘Gluthathione Transferase’

– Contribution towards new techniques for cancer diagnosis and pre-medication diagnosis –

Project Title: From Detection of Single Enzyme Molecules to Tumor Treatment (SICP: FY2011-2013)

Achieved through a combination of fluorescent compound, chemiluminescent compound, nuclear magnetic resonance probe and low-molecular-weight drug design techniques from Japan, and bioactivity analysis, kinetic analysis, cell imaging and efficacy evaluation from Sweden

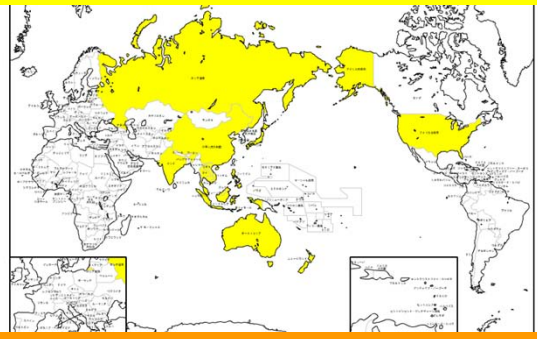
Hiroshi Abe
Senior Research Scientist,
Nanomedical Engineering Laboratory,
RIKEN Advanced Science Institute

Ralf Morgenstern
Professor, Institute of Environmental Medicine Division of Biochemical Toxicology,
Karolinska Institute

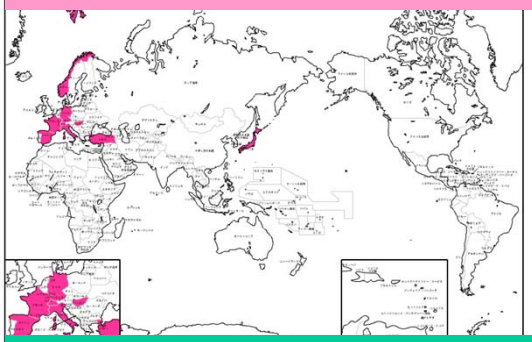
Promotion of Multilateral Cooperation-1

e-ASIA JRP

Prospective Members：
18 EAS (East Asia Summit) participating countries



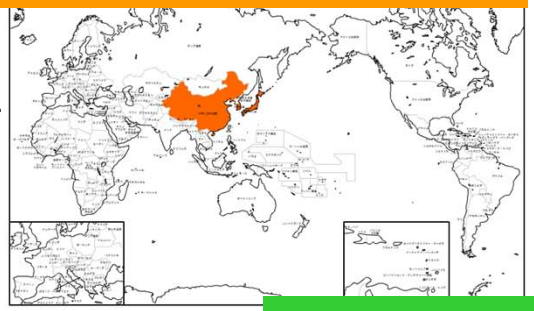
CONCERT-Japan



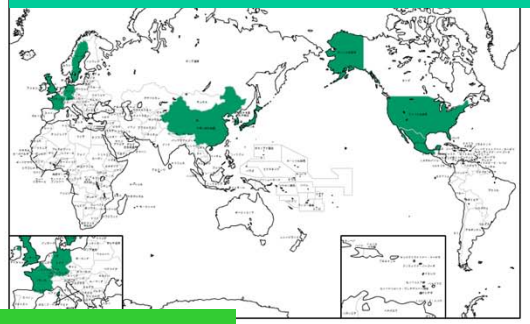
Prospective Members：
Japan, Belgium, France Germany, Hungary, Italy Norway, Romania, Slovakia, Spain, Switzerland, Turkey

JRCP

Members：
Japan, China, Korea

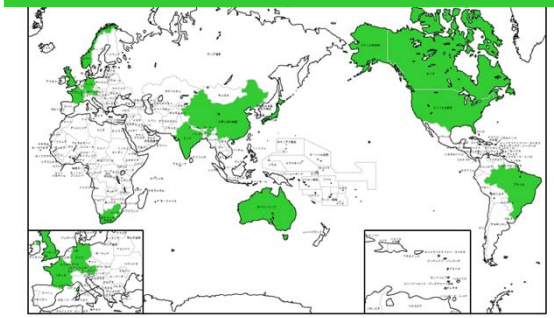


Green Innovation Working Group



Prospective Members：
Japan, China, France, Germany, Korea, Mexico Sweden, U.S.

Belmont Forum



Prospective Members：
Japan, Australia, Austria, Brazil, Canada, China, France, Germany, India, Norway, South Africa, U.K, U.S.

Promotion of Multilateral Cooperation-2

e-ASIA JRP: East Asia Science and Innovation Area Joint Research Program

Objectives

・Accelerate intercommunication of people, goods, money, and wisdom in S&T under the e-ASIA Initiative
・Resolve common issues (ex. environment, disaster prevention, infectious diseases, etc.) and lead to innovation in the region through international joint research and capacity building on S&T

Prospective Members

18 EAS (East Asia Summit) participating countries

Program Overview

＜Research Fields：
Common issues which lead the region to innovation＞
・Biomass and Plant Science* ・Nanotechnology / Materials Science*
・Infectious Diseases ・Disaster Prevention
Program was formally inaugurated at the 1st Board meeting held in Singapore on June 28, 2012, at the same time setting up the Tentative Program Secretariat in Singapore as well as approving two Thai-Vietnam-Japan pilot projects in the two research fields *. (1st Pilot Joint Call fields)

Founding Members

	Country	Organization
1	Lao PDR	Ministry of Science and Technology (MOST) Ministry of Health (MOH)
2	Thailand	National Science and Technology Development Agency (NSTDA)
3	Viet Nam	Ministry of Science and Technology (MOST)
4	Myanmar	Ministry of Science and Technology (MOST)
5	Indonesia	Ministry of Research and Technology (RISTEK)*
6	Philippines	Department of Science and Technology (DOST)*
7	Malaysia	Ministry of Science, Technology and Innovation (MOSTI)*
8	Japan	The Ministry of Education, Culture, Sports, Science and Technology (MEXT)

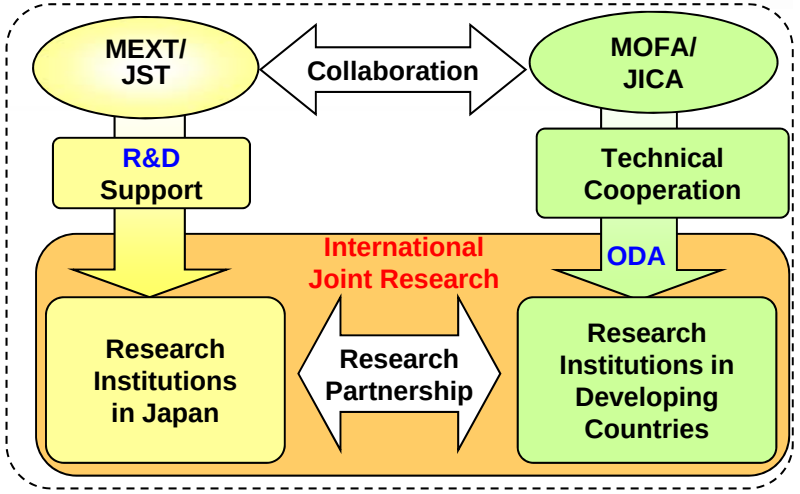
Organizations with *(asterisk) are under internal process of submitting LoIs..

Promoting R&D with developing countries in collaboration with JICA

独立行政法人 科学技術振興機構 Japan Science and Technology Agency

Science and Technology Research Partnership for Sustainable Development

SATREPS



SATREPS is a program that promotes international joint research, being structured as a collaboration between JST, which provides competitive research funds for S&T projects, and JICA which provides ODA. Based on the needs of developing countries, the program aims to address global issues and lead to research outcomes of practical benefit to both local and global society.

Research Fields: Environment/Energy, Bioresources, Natural Disaster Prevention, Infectious Diseases Control
Research Period/Duration of Research:
Three to five (3-5) years
Project Size: Approx. 100 million yen per project per year
Funding split: JST: Approx. 36 million yen
JICA: Approx. 60 million yen

URL https://fos.jst.go.jp/
Friends of SATREPS Search

Online Community Site
「Friends of SATREPS」 (since June 2011)

Promoting R&D with developing countries in collaboration with JICA

独立行政法人 科学技術振興機構 Japan Science and Technology Agency

Symposium on International Strategy for Industrialization of Biofuels

SATREPS

3rd-4th September 2012

Otemachi Sankei Plaza Hall
1-7-2 Otemachi Chiyoda-ku Tokyo Japan

Program（Tentative）

1st Day（Sept. 3 ）

Opening Remarks:
JST President Michiharu NAKAMURA
JICA Senior Vice President Hideaki DOMICHI
AIST President Tamotsu NOMAKUCHI

Key Note Speech, etc:
Member of CSTP Masuo AIZAWA
JST-SATREPS Program Director Taizo YAKUSHIJI
Report from Study Team for Biomass Commercialization Strategies
Japan Business Federation (KEIDANREN)
Japan International Research Center for Agricultural Sciences (JIRCAS)
New Energy and Industrial Technology Development Organization (NEDO) (TBD)

Invited Lectures:
Governor, Thailand Institute of Scientific and Technological Research (TISTR)
Chairman, The Agency for the Assessment and Application of Technology (BPPT)

2nd Day（Sept. 4 ）

Examples of Projects:
SATREPS, Japanese Business Sector, etc

Panel Discussion:
「International Strategy for Industrialization of Biofuels」
Chairman: Kenji YAMAJI, Program Officer, JST-SATREPS

Co-Organizers:
Japan Science and Technology Agency (JST)
Japan International Cooperation Agency (JICA)
National Institute of Advanced Industrial Science and Technology (AIST)
New Energy and Industrial Technology Development Organization (NEDO)
(TBD)
Japan International Research Center for Agricultural Sciences (JIRCAS)
Japan Business Federation (KEIDANREN)

Under the auspices of：
CAO, MEXT, MOFA, METI, MAFF, NEF, ECCJ

3. Prospective International Activities of JST

Enforce Information Gathering System of JST

Center for Research and Development Strategy (CRDS) undertakes information gathering and research activities of overseas Science Technology and Innovation trends systematically.

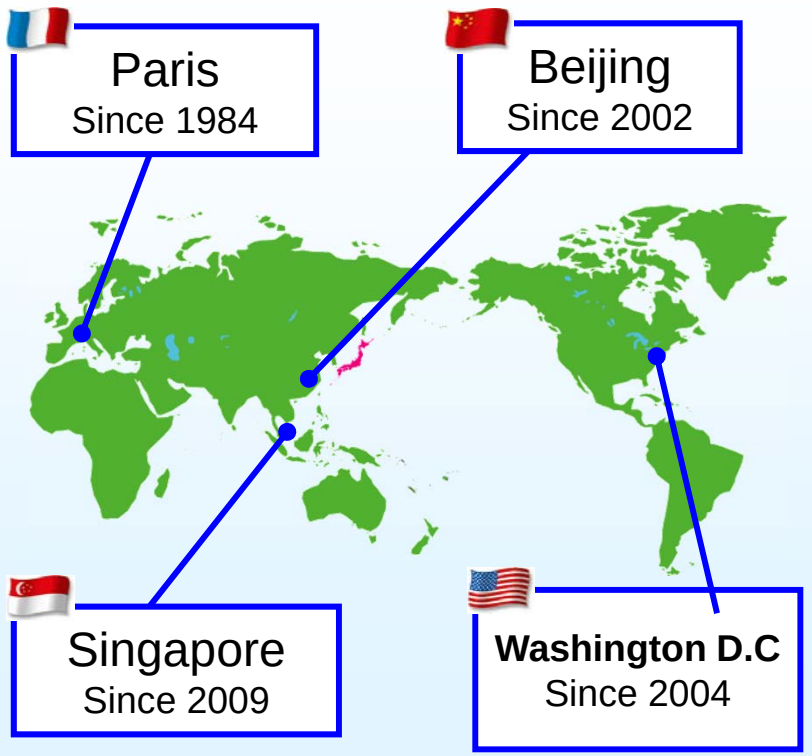
* Collaborating with counterpart agencies/researchers abroad, researchers' network in Japan, JST's overseas offices, and do on

研究開発戦略センター
Center for Research and Development Strategy

- Contributing International Strategy and decision making of JST
- Disseminating Achievements to policy makers and related researchers extensively

→ Contributing realization of innovation and solution of social issues in Japan through The Achievements

Overseas Branch Offices of JST



International Strategy of JST

独立行政法人 科学技術振興機構 Japan Science and Technology Agency

Acceleration of Globalization Breakthrough of Emerging Countries

Importance of strategic cooperation/collaboration among emerging countries with the next 20 to 30 years in mind

Develop the Strategy for the Collaboration with Emerging Countries/Areas (March 2012)

Focuses on Brazil, China, India, South Africa, East Asia Region.

Renew the International Strategy of JST for the 3rd Mid-Term Plan (FY2012 - FY2016)

Accelerate Science and Technology Innovation

Enforce Science and Technology Diplomacy

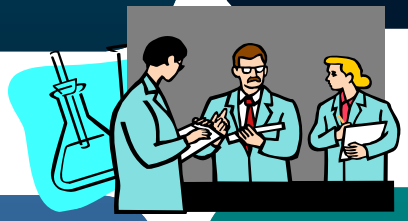
- Expect the Science and Technology Potential of Emerging Countries/ Areas
- Promote International Brain Circulation

Actions for Globalization of Strategic Basic Research Programs

独立行政法人 科学技術振興機構 Japan Science and Technology Agency

Activation of Brain Circulation through taking advantage of foreign researchers

Enhancement of PR activities to attract foreign researchers both in Japan and abroad



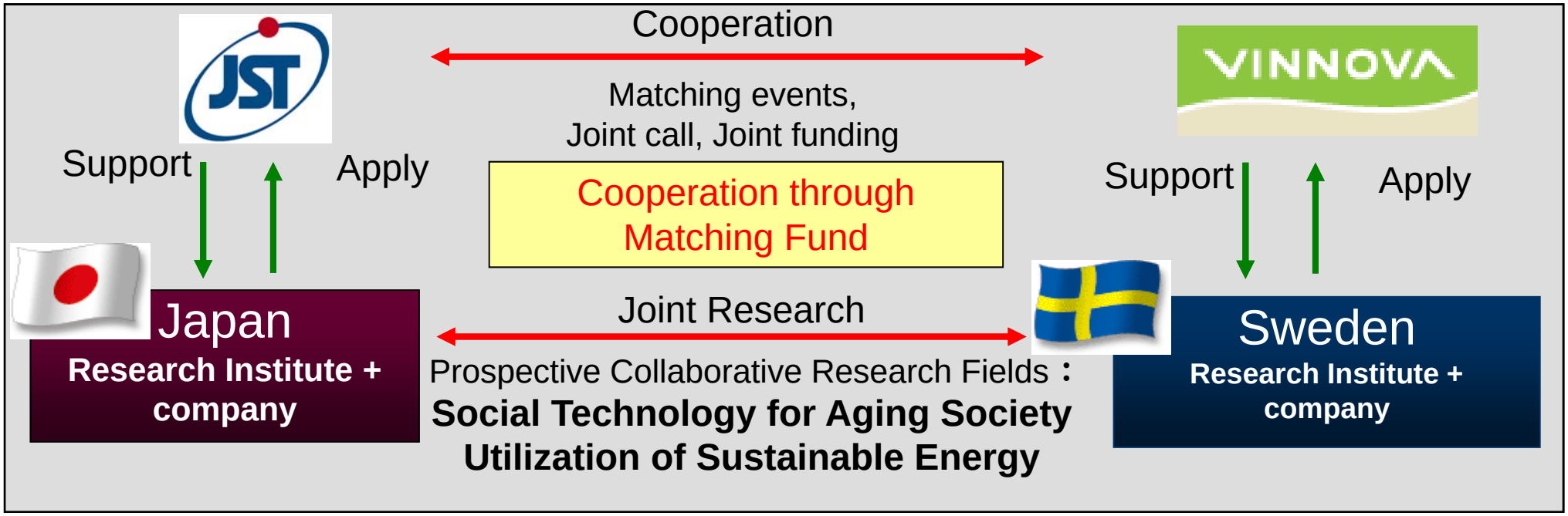
Promotion of Joint Research with overseas institutions

Development of infrastructures for promoting globalization

Example of International Academic-industrial Alliance Activities

Promote academic-industrial alliance activities through providing seamless system from early stage of R&D to application stage

Example of the scheme under consideration between JST and VINNOVA in Sweden



- Considering on the same scheme with other countries
- Targeting appropriate details of schemes depending on counterpart countries

Future Actions for Promoting Academic-industrial Alliance Activities

独立行政法人 科学技術振興機構 Japan Science and Technology Agency

Case1

Promoting Overseas Expansion of Japanese Companies
through supporting matching with overseas universities

Case2

Expecting Employment Creation by the Overseas Expansion of Japanese Companies

Case3

Accelerating International Academic-industrial Alliance Activities in the research fields with high demands

Case4

Promoting applications of achievements from international research exchange and joint research

Dialogue and Cooperation among Funding Agencies in the world -1

独立行政法人 科学技術振興機構 Japan Science and Technology Agency

GLOBAL SUMMIT ON MERIT REVIEW

Held in May 2012 in the United States by initiative of
Dr. Subra Suresh, Director of the National Science Foundation U.S
with the participations of heads of funding agencies from more than 50

Goal

Developing principles of Science Merit Review, and identifying best practices and standards that will cultivate multinational research cooperation among countries and across continents.

Achievement

- Statement of Principles of Scientific Merit Review
http://www.jst.go.jp/report/2012/120605.html

- Create Global Research Council (GRC),
a virtual organization of the heads of science and engineering funding agencies from around the world

GLOBAL RESEARCH COUNCIL

Dialogue and Cooperation among Funding Agencies in the world -2

Funding Agency Presidents' Meeting

Co-organized by JST and DFG

Facilitating and enhancing networking and cooperation among the funding agencies through open discussion on common interests and concerns

Discussion Themes at 1st meeting in 2010

- Bottom-up Basic Research and Top-down Thematic Programs
- Funding for Global Issues
- International Collaboration

Discussion Themes at 1st meeting in 2011

- Roles of Funding Agencies in Emergency Situations
- Essentials of Research Funding

The 3rd Meeting will be held in October 2012

Promote Dialogue and Cooperation among Funding Agencies through the collaboration between Global Research Council and Funding Agency Presidents' Meeting