
NORDP
National Organization of
Research Development Professionals

Developing the Research Enterprise: International Perspectives and Experience

Outline

- Introductions
- Panelists speak (10-15 min each)
- Moderated discussion and Q&A

Presenters

- Stefania Grotti Politecnico di Milano, ITALY
- Dominique Michaud Concordia University, Montreal, CANADA
- Shin-ichi Yamamoto National Institute for Academic Degrees and Quality Enhancement of Higher Education (NIAD-QE) and Research University Consortium, JAPAN

- Moderator: Karen Eck, Old Dominion University, Virginia USA

Some Questions

- History of university research and private RD in your country
- What does research development mean in your country?
- How is research funded?
- Is there a national strategy to support research? Is it basic, applied, policy making?
- What is the role of the faculty researcher, the University?
- What basic support (infrastructure) is a University supposed to provide?
- How is success measured for researchers, Universities?
- What are the challenges for public research in your country?
- What are opportunities to work across country boundaries, programs, funding, etc?

HIRING THE RIGHT RESEARCH STAFF

A Project Management Strategic Process

Stefania E. Grotti

OUTLINE

- Who
- Where
- What
- When
- How

Polimi Numbers- QS World University Rankings by Subject 2018 and EU projects

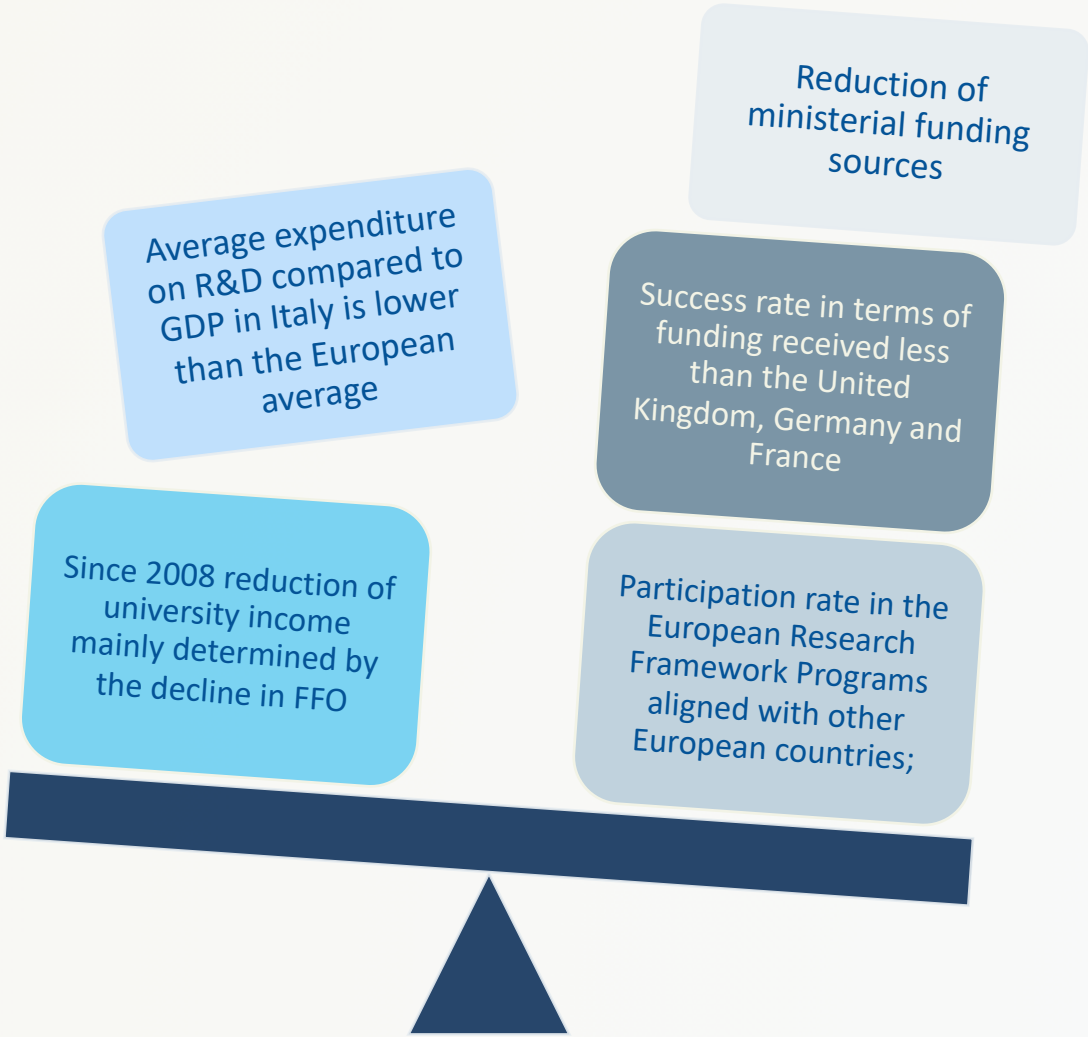
Broad subject area	World	EU	Italy
Engineering & Technology	16	9	1
Architecture & Built Environment	11	6	1
Art & Design	6	3	1
Computer Science & Information Systems	37	9	1
Chemical Engineering	44	12	1
Civil & Structural Engineering	7	4	1
Electrical & Electronic Engineering	23	7	1
Mechanical, Aeronautical & Manufacturing Engineering	7	3	1

H2020
1983 Projects submitted
275 Projects financed
> 118 M€

ERC > H2020
25 Projects financed
MSCA > H2020
47 Projects financed

Research Priorities
- Health
- Industry 4.0
- Cultural Heritage
- Smart Cities
- Landscape fragility

The context: Italy

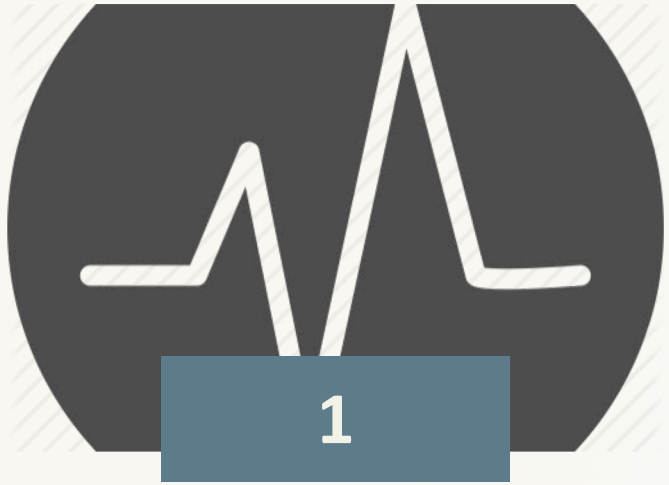


The context: Europe

- significant increase in R&D investment in OECD countries
- decline in the role of national governments as the main source of R&D funding
- remarkable development of academic research in recent decades
- increased collaboration with civil society
- increased competitiveness among researchers, institutions and countries
- concentration trend of academic research in centers of excellence

A CHALLENGING PROCESS

Creation of a **STRATEGIC PATH** and **STRATEGIC MANAGEMENT**



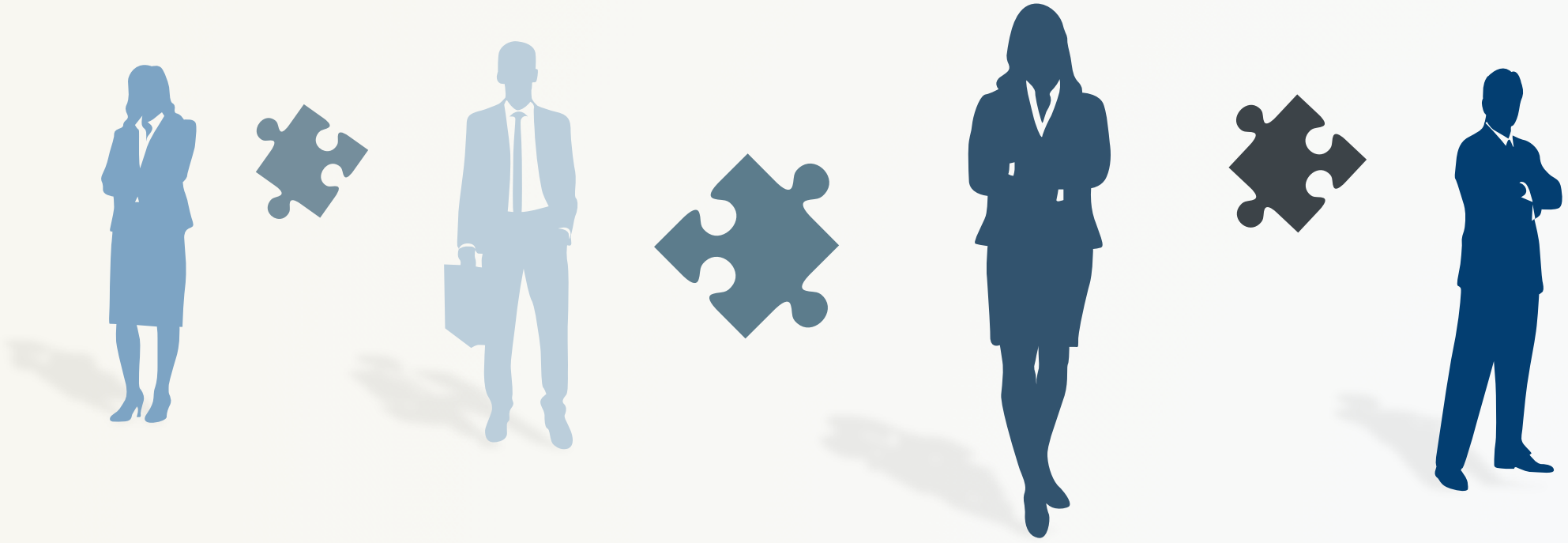
NEW IMPULSES

POSITIVE FORWARD THINKING PLANNING.

ACCOMPLISHING CHALLENGING GOALS

KEY POINT

HAVE A CLEAR ORGANIZATIONAL CHART - compliant with the institutional organization and well balanced with the number of macro activities managed by the office



PROACTIVE SERVICE vs REACTIVE SERVICE

The main difference consists in work organization and in the competences of people engaged in specific roles.

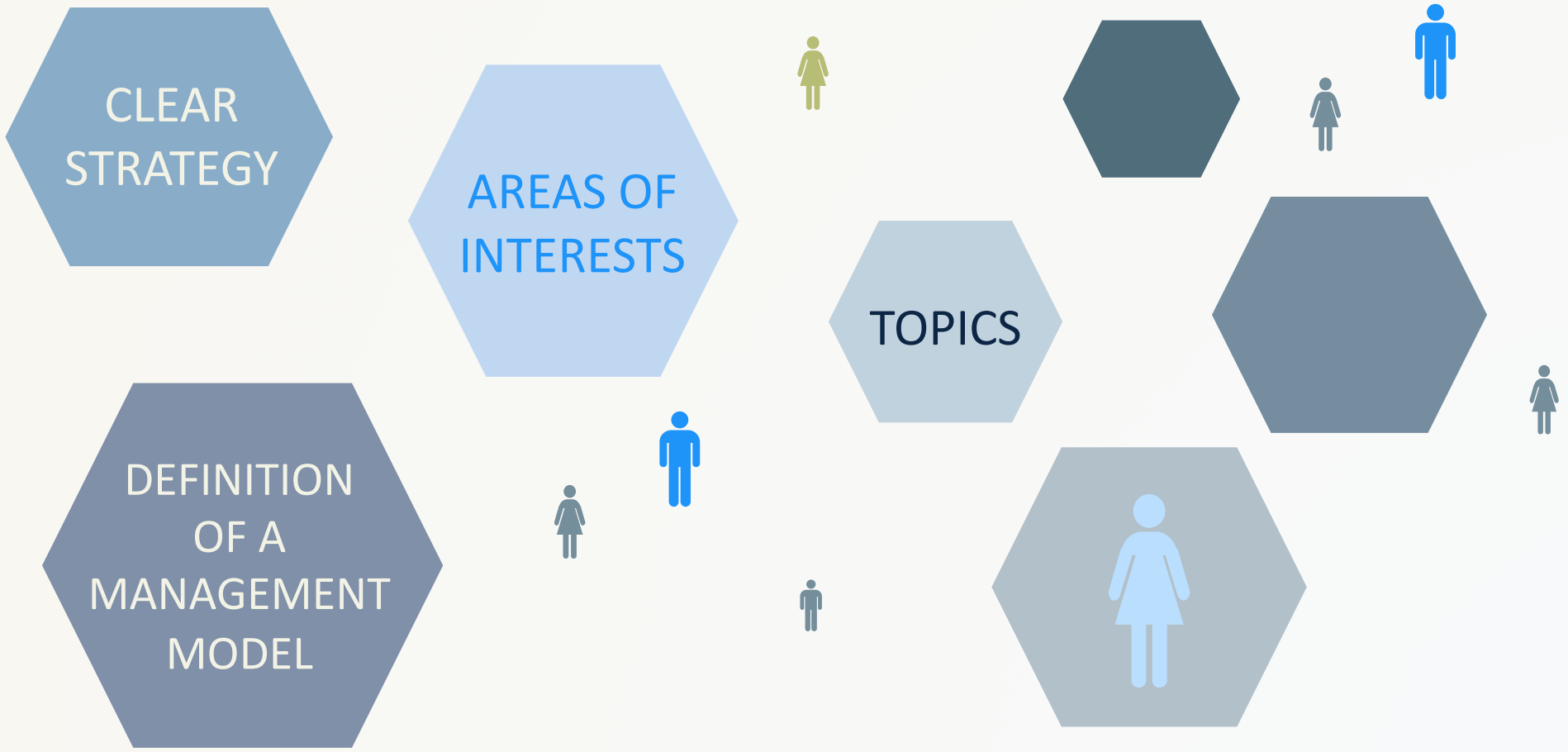
PROACTIVE SERVICE

A service can be considered proactive when Researchers' silent needs are tapped and translated into services with an high added value

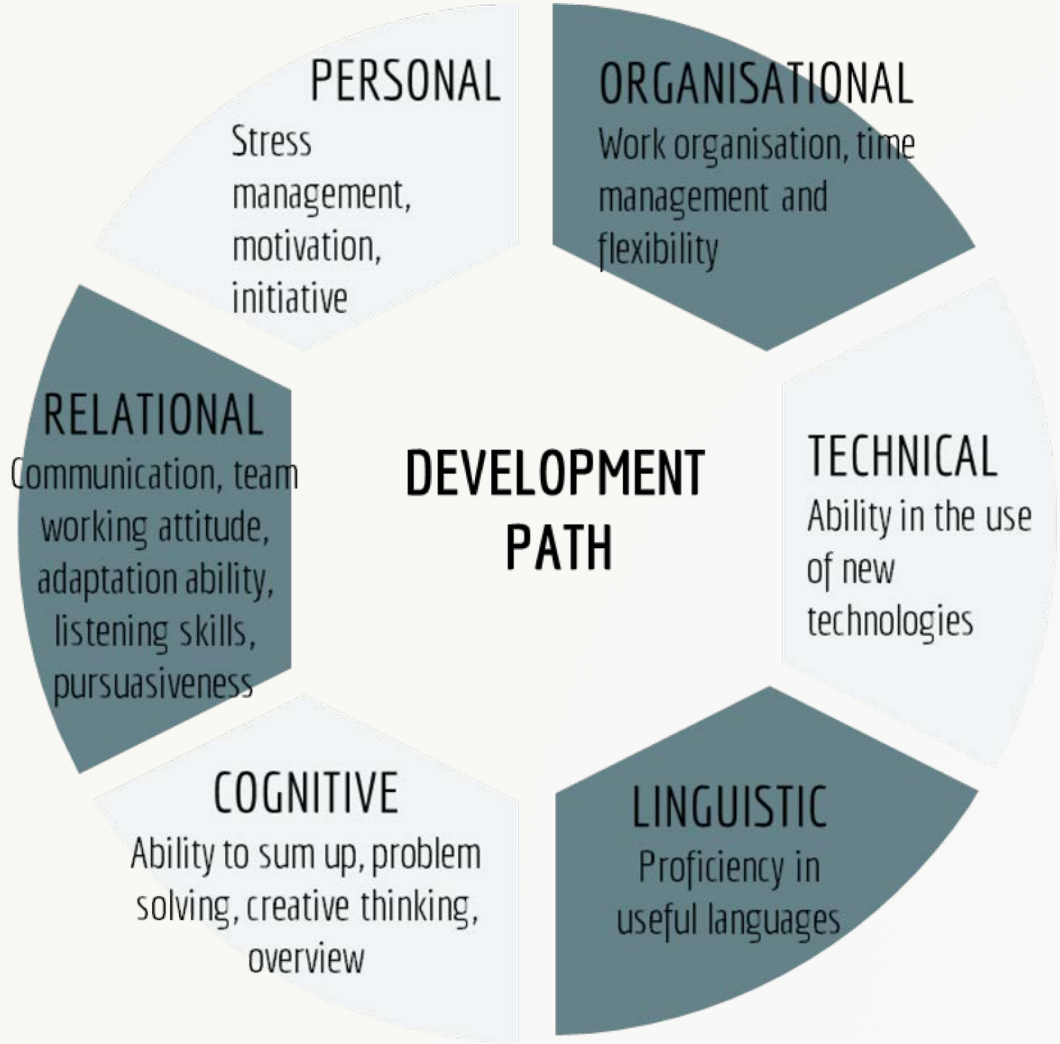
CHALLENGE

The challenge for a RM is to try to GET THE MAXIMUM FROM THE EXISTING PROFILES in the Research Office

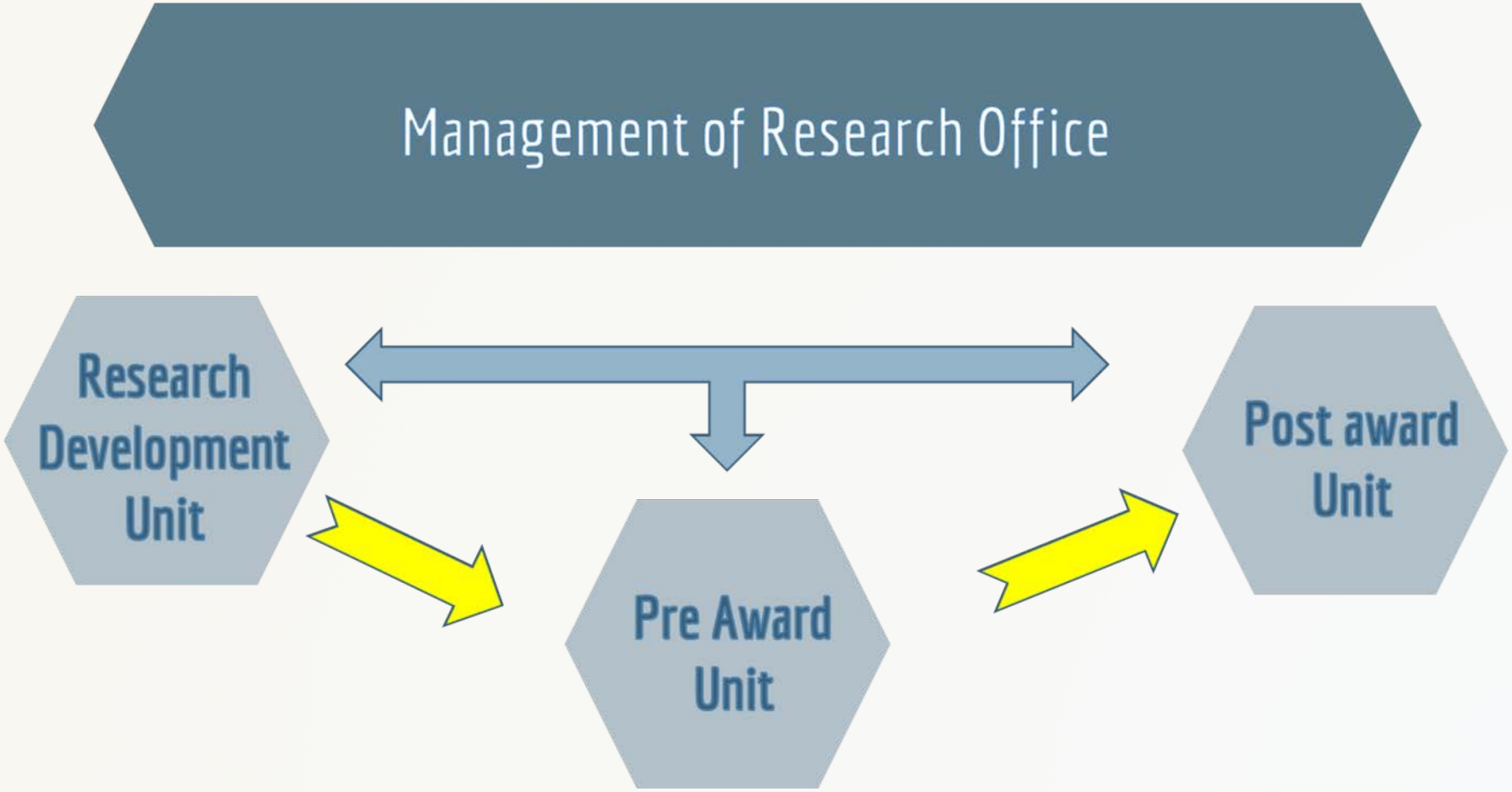
TO HIRE THE RIGHT STAFF

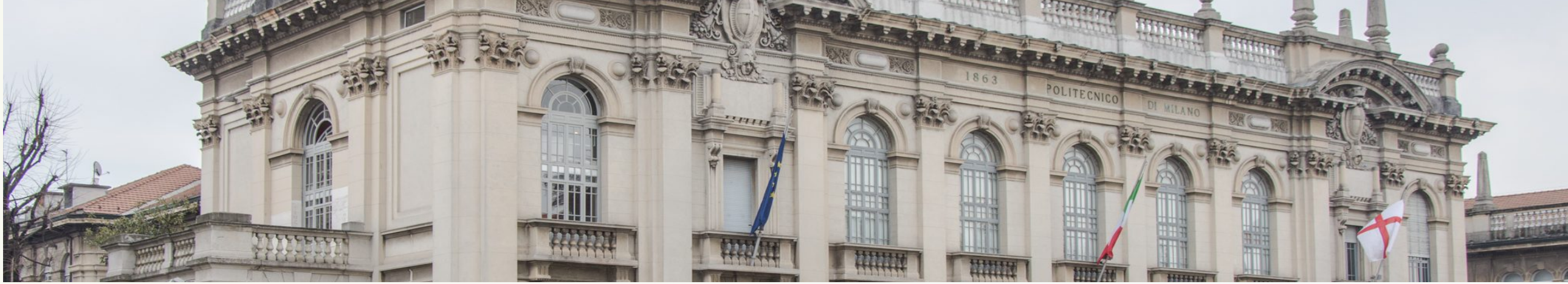


SOFT SKILLS TO IMPROVE



Our Research Office optimal





CONTACT DETAILS

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Thank You

POLITECNICO
MILANO 1863

Developing the Research Enterprise

Japanese Perspectives and Experience

Shin-ichi Yamamoto

National Institution for Academic Degrees and Quality Enhancement of Higher Education (NIAD-QE)

Research University Consortium, Japan (RUC)

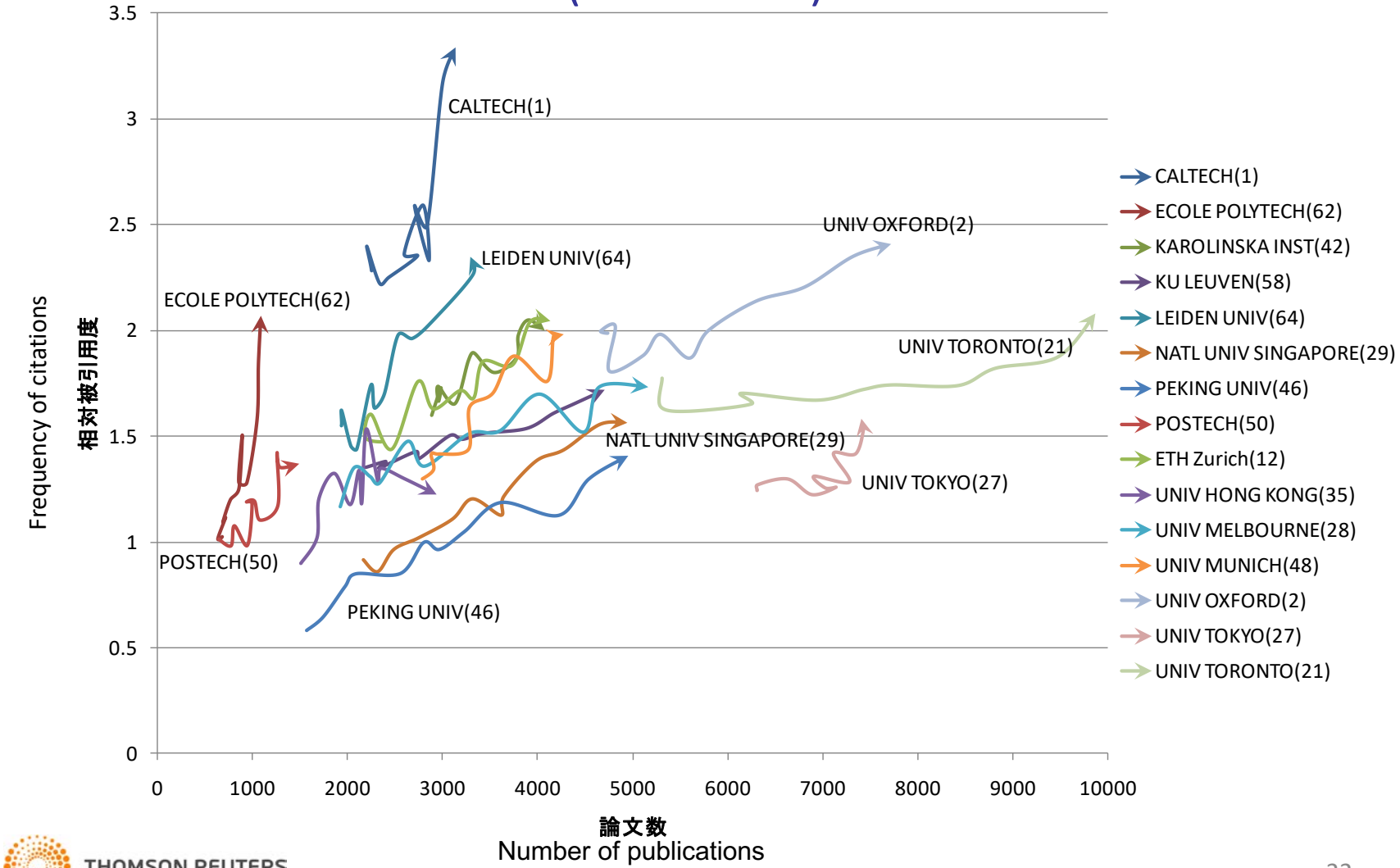
Profile

Prof., Dr. Shin-ichi Yamamoto

1996 Professor, Faculty of Agriculture, Graduate School of Bioagricultural Sciences, Nagoya University
2002 Dean, Faculty of Agriculture, Graduate School of Bioagricultural Sciences, Nagoya University
2004 Trustee and Vice-President of Nagoya University
2006 Member of Science Council of Japan
2009 Special Advisor of Nagoya University
2010 Research Fellow of Institute of Global Low-carbon Economy, University of International Business and Economics, Beijing, China
2011 Trustee and Vice-President of Okayama University
2013 Emeritus Professor of Nagoya University
2016 Gest Professor of NIAD
2017 Executive Advisor of Okayama University
2017 Gest Professor of NINS
2017 Emeritus Professor of Okayama University
2018 Dean of Research Department of NIAD
2019 Executive Chair, Research University Consortium, Japan

International Research Trend

Research Performance in Top Level Universities (2000-2011)

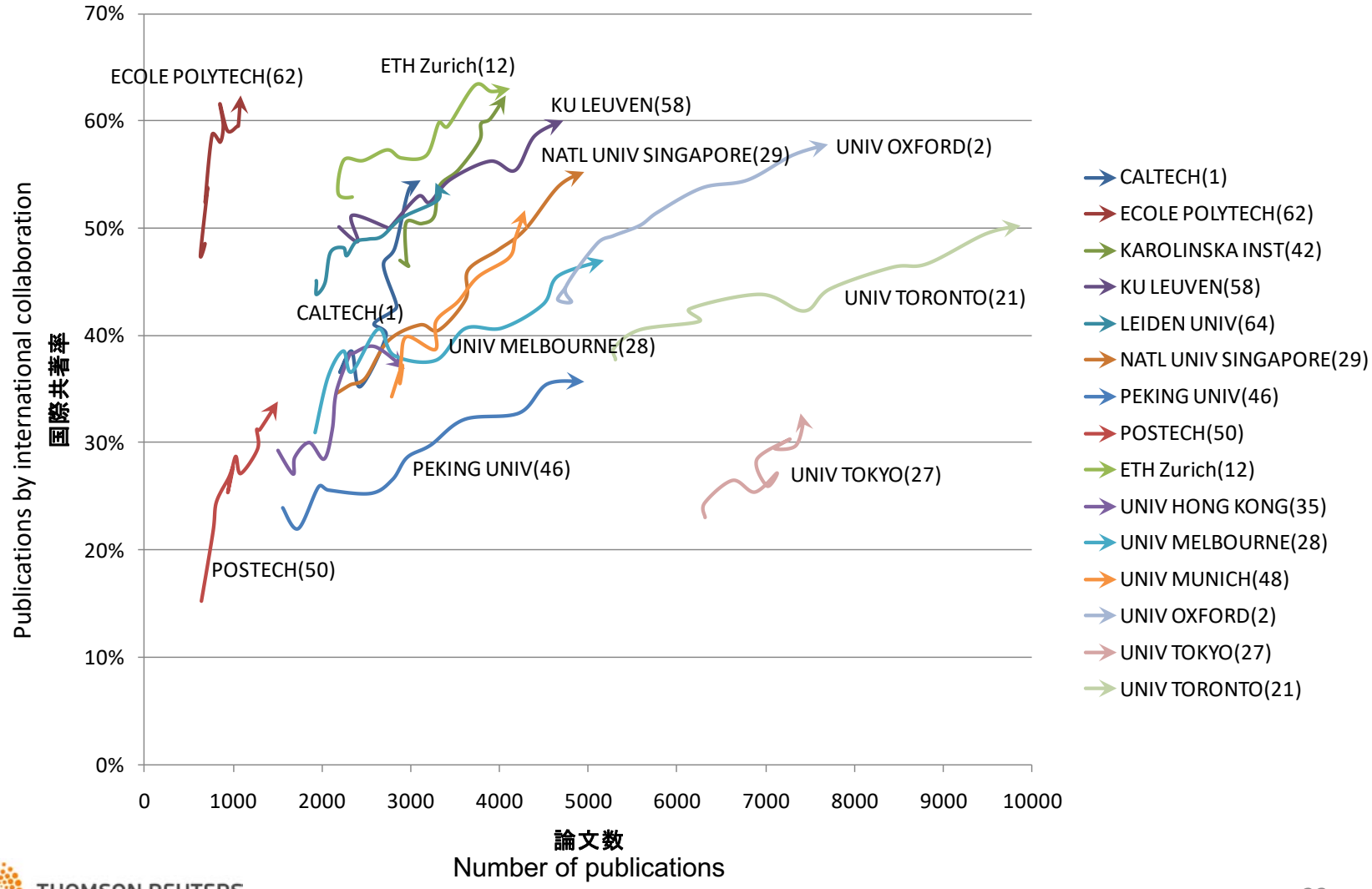


THOMSON REUTERS

Source: Thomson Reuters InCites, Global Comparisons

International Research Trend

International Collaboration in Top Level Universities (2000-2011)



THOMSON REUTERS

Source: Thomson Reuters InCites, Global Comparisons

Structure of Presentation

* History of university research and private RD in Japan
* Meaning of research development in Japan
* Research fund in Japan
* National strategy to support research
* Role of the faculty researcher and the University
* Basic support (infrastructure) provided by a University
* Successful measure for researchers and universities
* Challenges for public research in Japan
* Opportunities to work across country boundaries,
  programs, funding, etc.

History of University Research and Private RD

Example of Japanese University: Nagoya University

Private RD

https://www.idea-webtools.com/2018/03/TOYOTA-GR-Supra-Racing-Concept.html

Size of Japanese Higher Education

- The total number of universities, junior colleges, colleges of technology and professional training colleges is 3,992, with approx. 3.65 million students enrolling.
- Number of universities is 777, with among them 77% are private universities.

	National（国立）	Municipal/ Prefectural（公立）	Private（私立）	Total
Universities（大学）	86	91	600	777
with Graduate Schools（大学院）	86	79	462	627
Junior Colleges（短期大学）	0	17	324	341
Colleges of Technology（高等専門学校）	51	3	3	57
Professional Training Colleges（専門学校）	9	186	2,622	2,817

Nagoya University

A leading national university located in the heart of Japan

Toyoda Auditorium

donated by
the Toyota Motor Corporation

Nagoya Castle

Downtown Nagoya

One-seater vehicle: i-REAL by Toyota Motor Corporation

Outline of Nagoya

- Geographically located around the center of the mainland of Japan
- The population of **2.2 million**, making it the **4th largest city** in Japan

Industry

- Best known as an industrial powerhouse
- Examples are Toyota Motor Corporation, Mitsubishi Heavy Industry, Denso, Gaishi, Aishin and so on.

History of Nagoya University

1871 Established as a Medical School and Temporary Hospital

1939 Established as “Nagoya Imperial University”

1949 Became “Nagoya University”

2004 Re-launched as “National University Corporation Nagoya University”

http://www.nagoya-u.ac.jp/en/index2.html

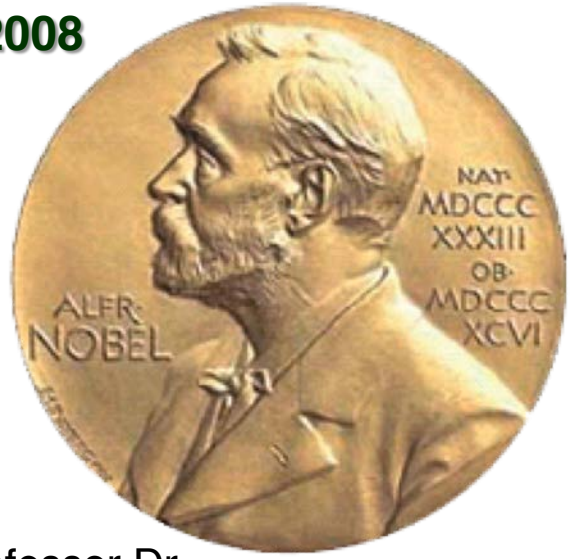
Research

- **Search for Research Excellence as our National Higher Education Policy in the New Century**
  - ◆ World-class research universities
  - ◆ Incentives for procuring special research grants by the government
  - ◆ Promoting competition among major research universities

- **Basic Goals of Research Activity at Nagoya University**
  - ◆Emphasis on the cutting-edge, basic research, which requires long-term commitment and concentration,
  - ◆Innovative research, which promotes the construction of an academic foundation for the state-of the art sciences in order to disseminate the research results to the world, and
  - ◆Promotion of collaborative research, which supports the autonomous and sustainable development of regional economy and social well-being.

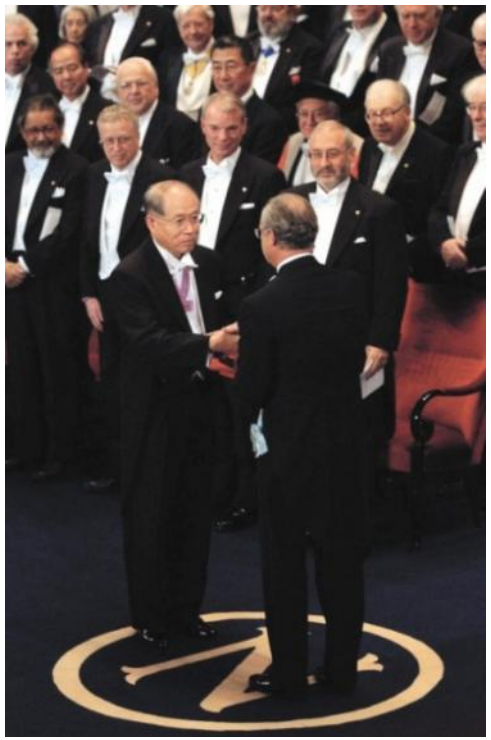
Research Excellence

Nobel Laureate in Chemistry, 2008



Alumnus & Former NU Associate Professor Dr. Osamu Shimomura

Nobel Laureate in Chemistry, 2001



NU Professor:
Dr. Ryoji Noyori

Nobel Laureates in Physics, 2008

Alumnus & NU Professor:
Dr. Toshihide Maskawa

Alumnus:
Dr. Makoto Kobayashi

Research

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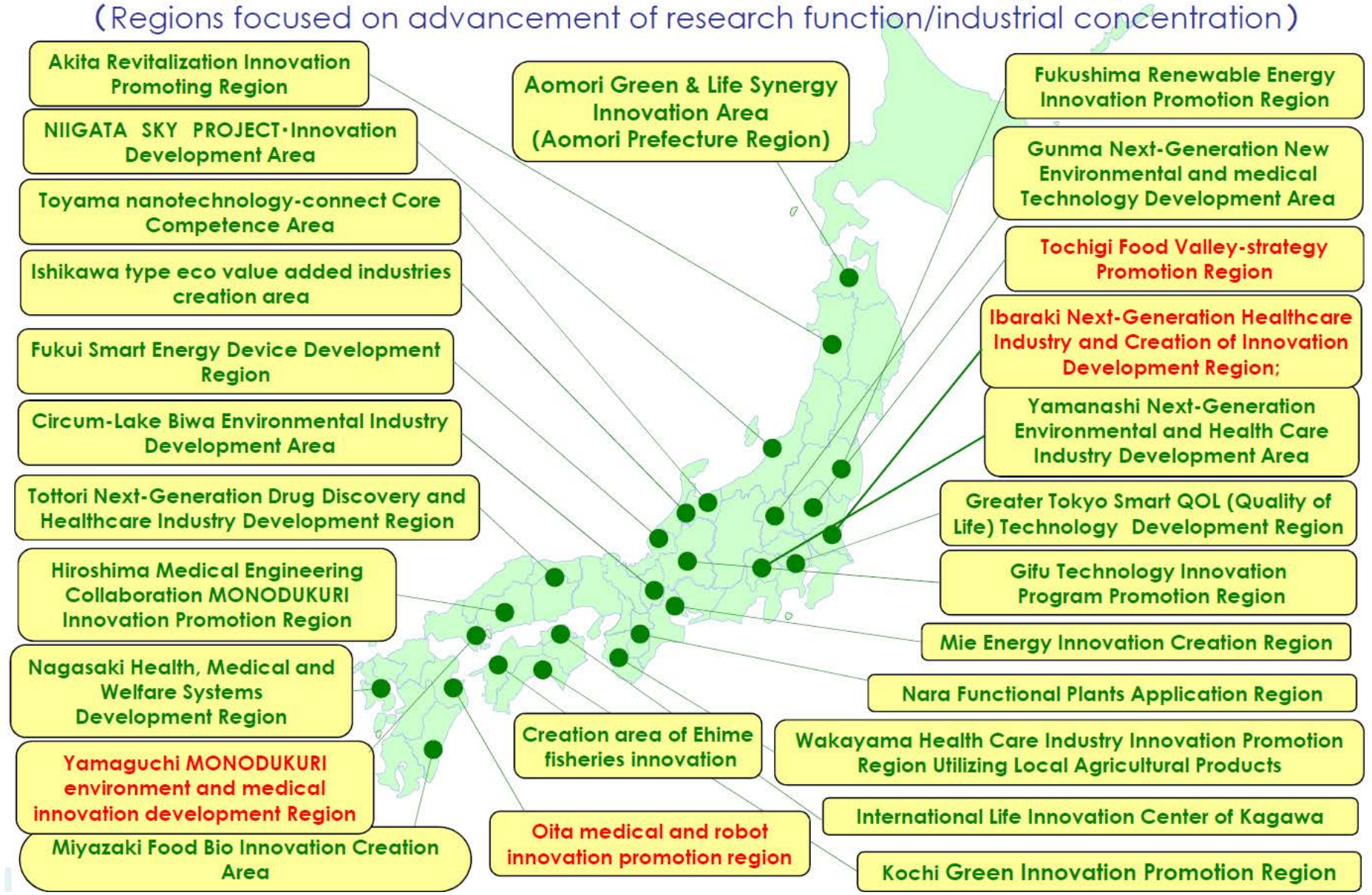
Regional Innovation Strategy Promoting Regions

(Regions focused on advancement of research function/industrial concentration)



https://internationaleducation.gov.au/International-network/japan/countryoverview/Documents/Research%20funding%20in%20Japan%20-%20update%20June%202015.pdf

Example of Private RD

TOYOTA CENTRAL R&D LABS (Company closely linked with TOYOTA Motor Corporation)

SUBSTANCE OF ACTIVITIES

Contribution to the Toyota Group

We contribute to the further prosperity of the Toyota Group through technological innovations.

Actualization

We create new business and industry by pioneering concepts and technologies, and combining technical elements to crystallize and conjoin core technologies.

Meaning of Research Development

University Research Administrator (URA) in Japan

On September 1, 2012 the university appointed 4 members as University Research Administrators (URA) to take a major and direct role in upgrading and improving University operational and educational research capabilities.

In Okayama university, URAs are placed directly under the leadership of the president, Dr. Morita. The URAs are valuable resources for research, working in concert with Dr. Shinichi Yamamoto, the Executive Director (Research).

They will be of great benefit in the running of our university, fulfilling numerous vital missions alongside our executive officers (such as the president and directors) like determining research policy proposals and global research information, proposing large research projects, aiding fund raising for research, and helping to promote university reform aimed at becoming a true "research university."

What is University Research Administrator (URA) ?

URA conducts research planning, procurement and management of research funding, and management and utilization of intellectual property in collaboration with researchers at universities and other research institutions.

We have established a nationwide system that develops and secures human resource groups, and aims to establish an independent job category for URAs in universities.

2011 2012 2013 2014 2015 2016 2017

◆**Establishment of the system to develop and secure "Research Administrators" in universities (Quantity)**

◆**Establishment of nationwide network of URAs through development of human resources engaged in research management (Quality)**

Definition of URA

○**National Council of University Research Administrators (NCURA)**
Established 1959
Research Administration (RA)

NCURA advances the profession of research administration through education and professional development programs about research funding, policies, pre-award, post-award etc…

○**National Organization of Research Development Professionals (NORDP)**
Established 2010
Research Development professionals (RD)

NORDP enhances competitive multi-, inter- and transdisciplinary research and supports for strategic research applications.

Although Japanese URA has elements of both RA and RD, it is rather closer to the role of RD.

Definition of URA

○Industrial Collaboration
URAs engaged in research project planning and management, intellectual properties management, and industrial collaboration

○Academic
URAs who support researchers and research activities by acquiring time for research and funding

○Pre-award and Post-award
URAs who highly focus on pre-award and post-award select adequate research funding, support application, manage the funding, and utilize research achievements

○Medical
URAs in this field require qualification, ability or special knowledge about ethics and conflicts of interest in clinical research

URA Role Differences Between the U.S. and Japan

Country	Type of URA	Role	Research Development	Pre-Award	Post-Award	Others
U.S.	Research Administration Professionals (RA)	Establishment of effective management systems for research funding to universities		○	◎	
	Research Development Professionals (RD)	Strategic research planning and support, and acquiring research funding	◎	○		
Japan	Industrial Collaboration		○	○	○	◎
	Academic		◎	○	○	◎
	Pre-Award, Post-Award	Research funding & management	○	◎	◎	○
	Medical	Support medical researchers	○	○	○	◎

Research Fund in Japan

Japanese Society for the Promotion of Science (JSPS)

Japanese Science and Technology Agency (JST)

http://www.wiley.co.jp/blog/pse/?p=27910

Activities of Japanese funding agencies

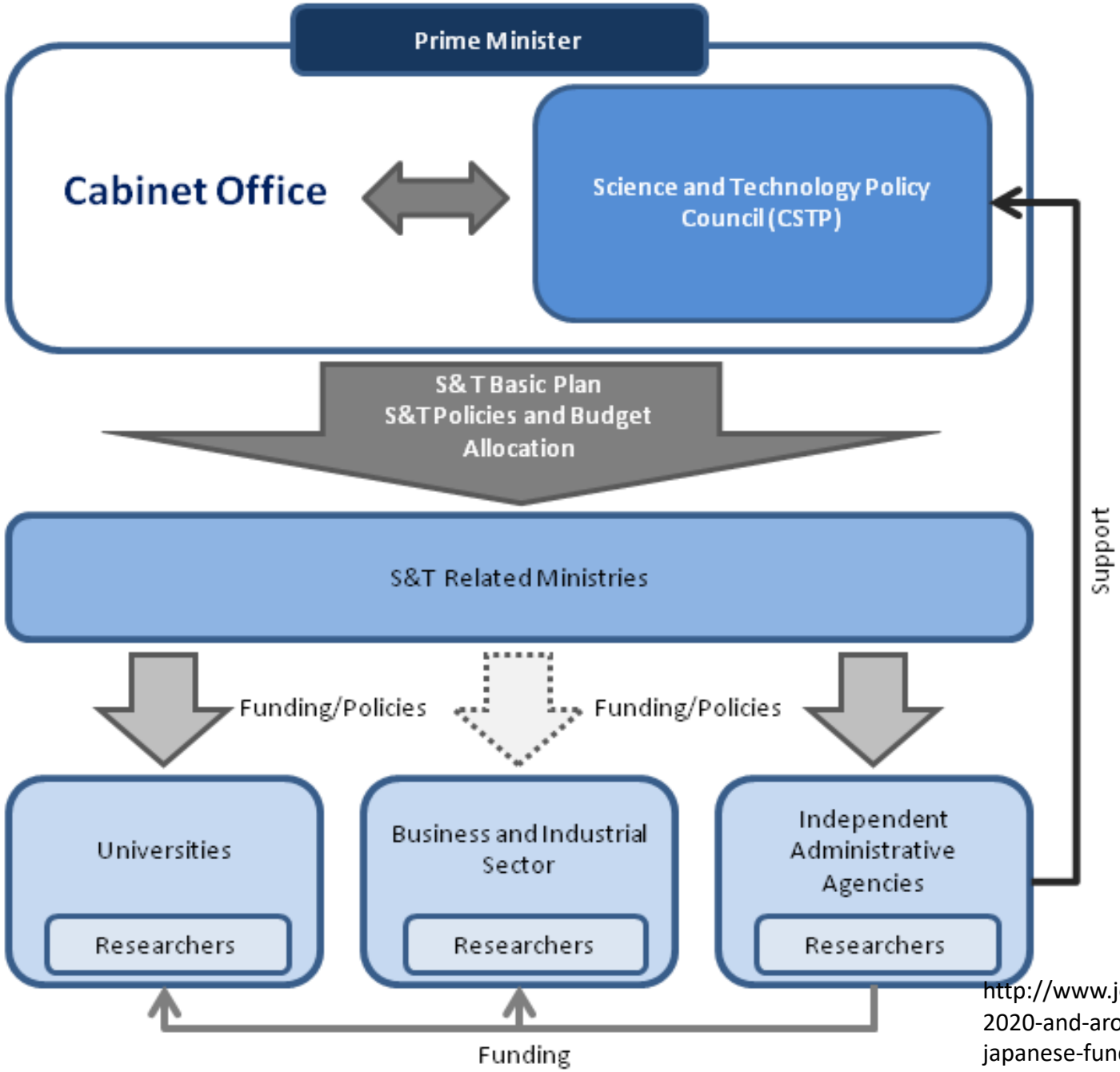
The public part of the Japanese STI system can again be divided into three tiers: coordination and policy making, distribution of funds, and administration of funds through individual programs:

Coordination of research policy is provided by the Council for Science and Technology Policy (CSTP), based within the Cabinet Office.
Distribution of funds and implementation of policies are carried out by the individual ministries. The largest part of the government expenditure on R&D is provided by the Ministry of Education, Culture, Sports, Science and Technology (MEXT).
The administrative and operative level of funding happens through Independent Administrative Institutions (IAIs), who run their own research or coordinate programs for the support of researchers in Japan or in cooperation with partner countries.

From a pragmatic point of view, this last category is the most important, these Independent Administrative Institutions include the key funding bodies like the Japan Science and Technology Agency (JST) and the Japan Society for the Promotion of Science (JSPS) attached to MEXT

http://www.jeupiste.eu/horizon-2020-and-around/activities-japanese-funding-agencies

Schematic depiction of the Japanese STI funding system



http://www.jeupiste.eu/horizon-2020-and-around/activities-japanese-funding-agencies

Japanese Society for the Promotion of Science（JSPS)

JSPS's main function is to coordinate and develop a number of scientific and academic exchange programs, both domestic and international. The functions of JSPS also include awarding Grants-in-Aid for scientific research, supporting young researchers, promoting international scientific cooperation, supporting scientific cooperation between the academic community and industry, and collecting and distributing information on scientific research activities.

Japanese Science and Technology Agency（JST)

JST aims to give a picture of Japan as a nation built on the creativity of S&T and innovation, by acting as a core organization for implementing Japan's science and technology policy in line with the objectives of the Science and Technology Basic Plan. JST's mission is to promote science and technology in Japan by conducting a broad range of activities, including the following:

•Promotion of consistent research and development from basic research to commercialization with particular emphasis on the creation of new technological seeds.

•Upgrading the infrastructure for the promotion of science and technology, including dissemination of scientific and technological information

National Strategy to Support Research

JSPS

Grants-in-Aid for Scientific Research (KAKENHI)

https://www.jsps.go.jp/english/e-grants/index.html

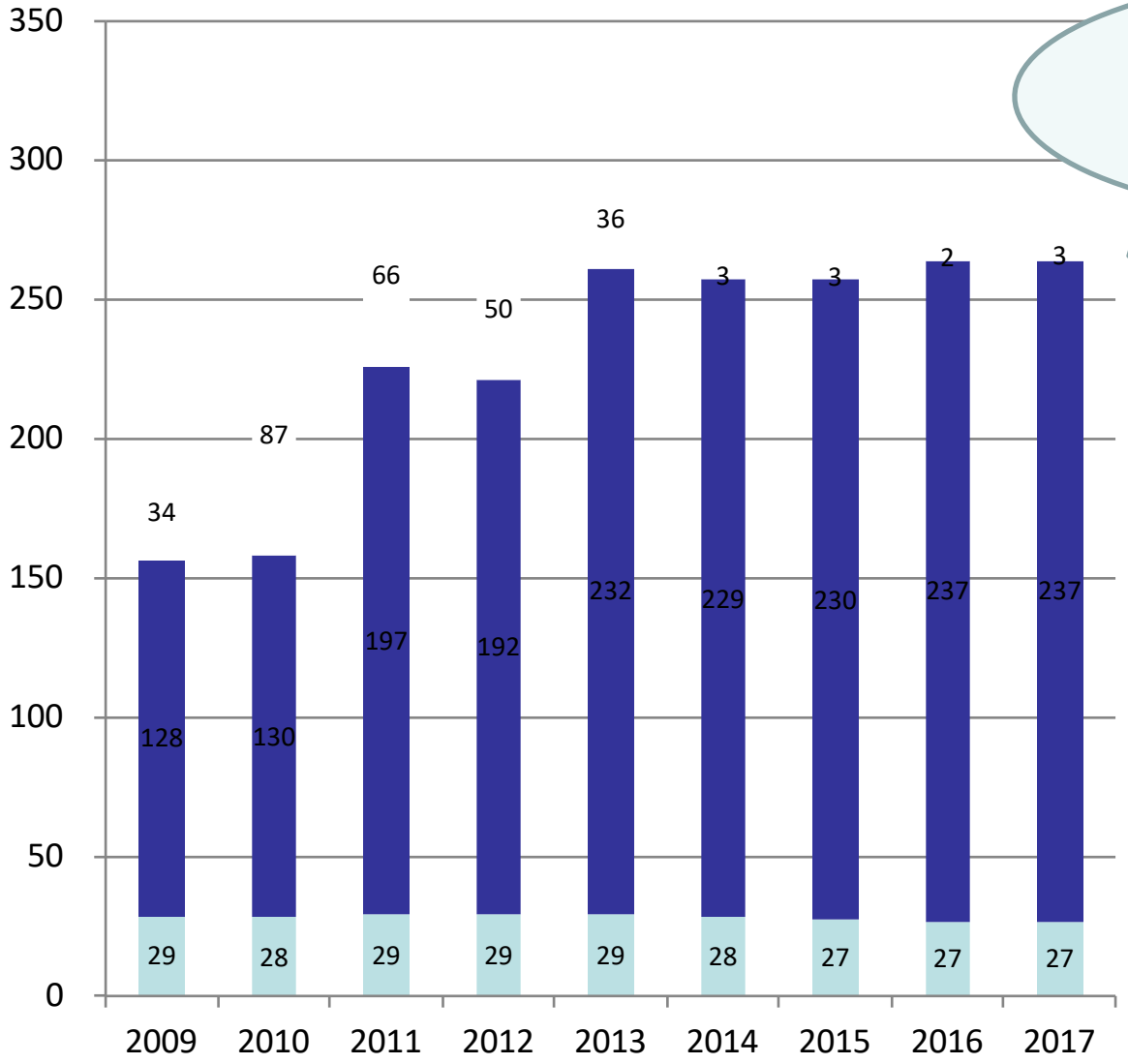
JST

Strategic Basic Research Programs

http://www.jst.go.jp/EN/operations/operation_a.html

JSPS: Budget

(Unit: Bill. Yen)



Total: 267 billion JPY
(1.86 billion GBP)

Others

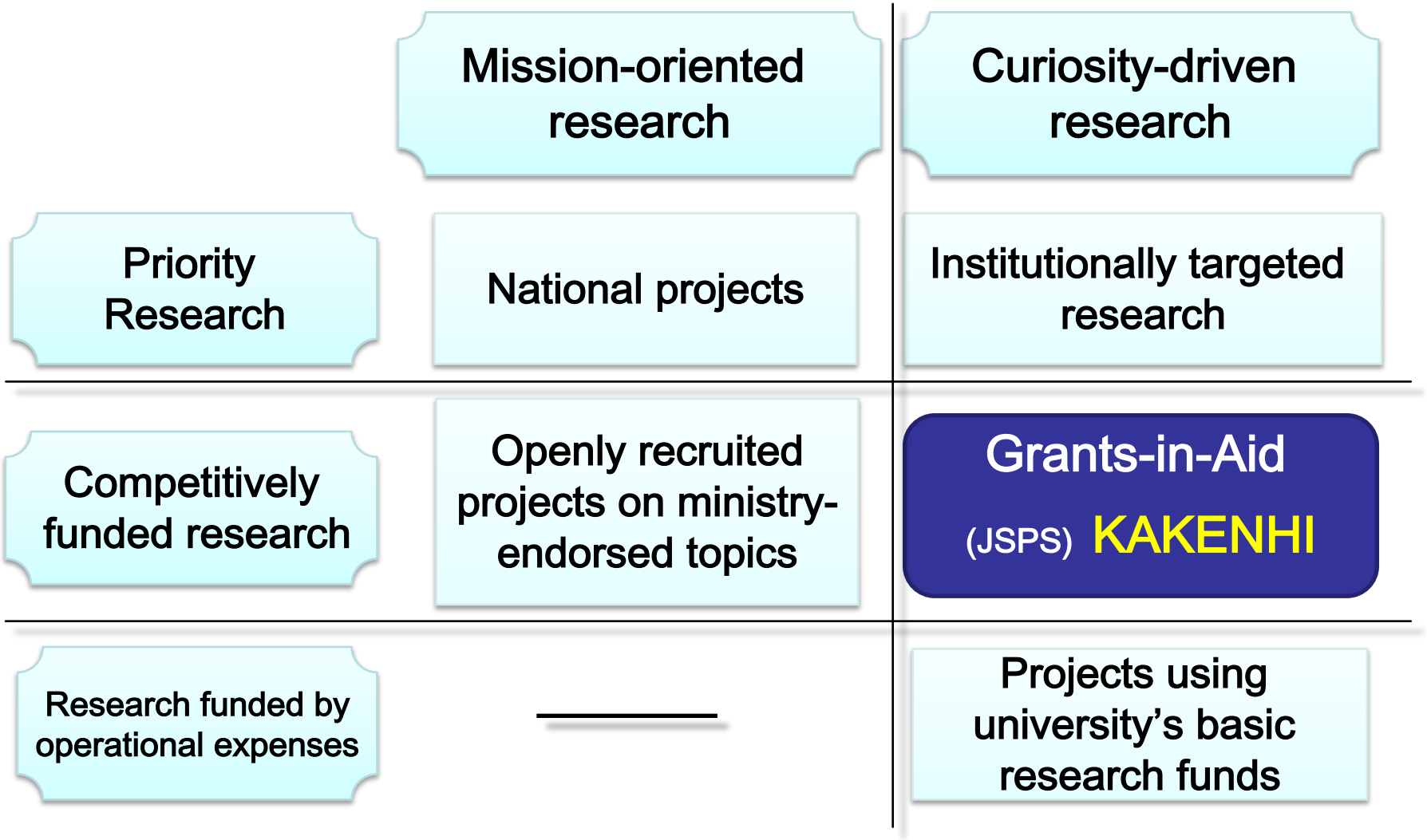
Grants-in-Aid for Scientific Research

KAKENHI

Government subsidies for JSPS as an independent Administrative Institution

Framework for Funding Research

JSPS



- ✓ competitive funds
- ✓ all scientific research (research based on the free ideas of the researcher)
- ✓ curiosity-driven research
- ✓ rigorous screening process

→ The screening committee consists of approx. 6,000 reviewers

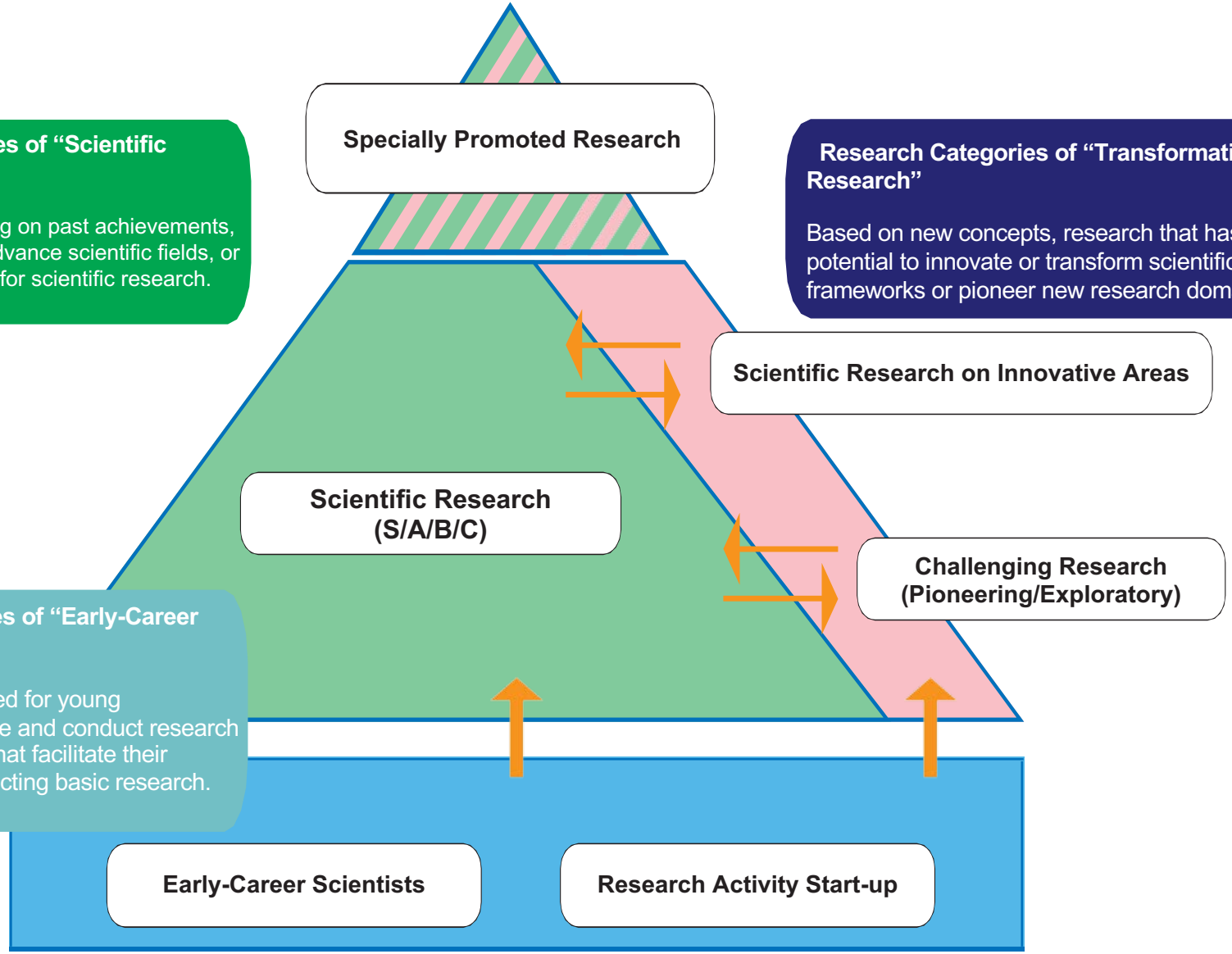
KAKENHI Research Categories

Research Categories of "Scientific Research"

Research that, building on past achievements, seeks to deepen or advance scientific fields, or create a firm foothold for scientific research.

Research Categories of "Transformative Research"

Based on new concepts, research that has the potential to innovate or transform scientific frameworks or pioneer new research domains.



Research Categories of "Early-Career Scientists"

Opportunities provided for young researchers to mature and conduct research independently, and that facilitate their stepping up to conducting basic research.

KAKENHI Reform
"Fund for Promotion of Joint International Research"

SPS

Fostering Joint International Research (A)

From FY2015

- Japanese researchers selected for Fostering Joint International Research for set periods in collaboration with overseas universities and research organizations.
- International joint research strengthened by rigorously selecting participants (e.g. professors, assistant professors) who can drive its advancement into the future.

- Period: about 6 months to one year
- Support: up to 12 million yen
  (about 84,000 GBP)

400 of top level researchers in Japan

Dispatched

New program
from FY2018

Fostering Joint International Research (B)

- **Project Period: 3-6 years**
- **Funding from JSPS: up to JPY 20,000,000 (about 140,000 GBP)**
- **Number of Projects: up to 200 projects**

Collaboration with overseas researchers

Other new categories under this program:
- International Activities Support Group
- Home-Returning Researcher Development Research