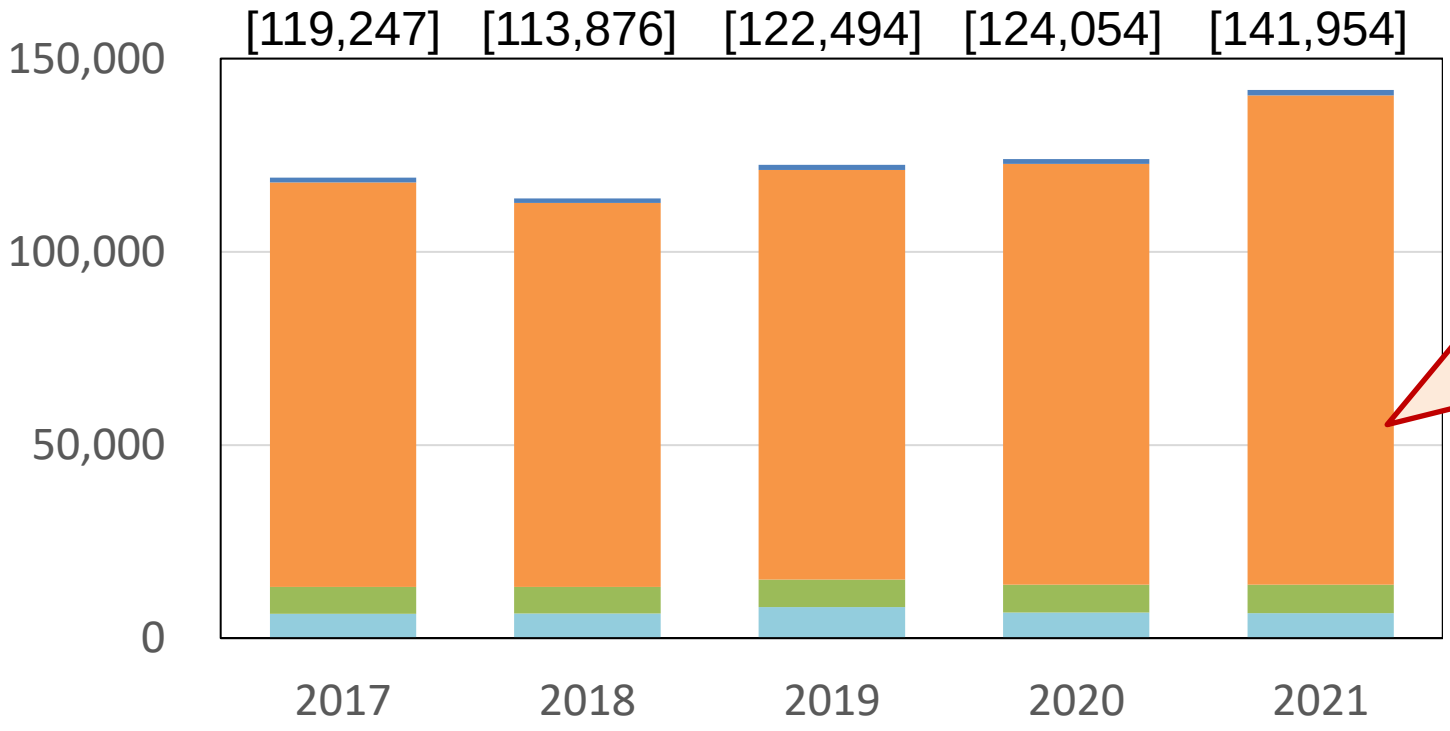
JST Policy
for the Next Fiscal Year

February 24th, 2021

Japan Science and Technology Agency

Department of Strategic Planning and Management

JST budget over time

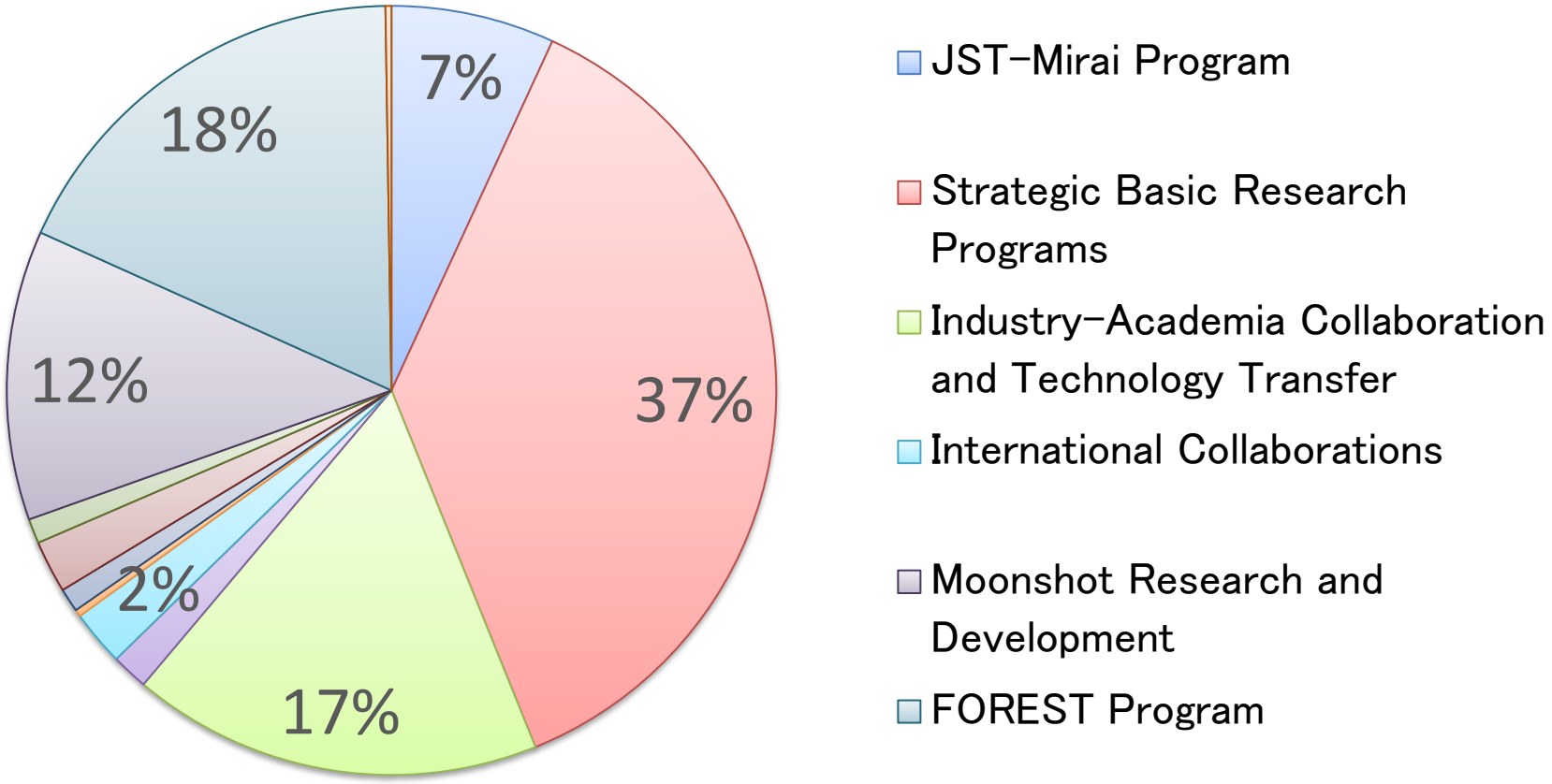


The increase in FY 2021 budget is due to the full-scale start of the **FOREST program**

Planning and proposing of research and development strategies
Promotion of research and development
Promoting the co-creation of the future and fostering the human resources
Other

※一般勘定、文献勘定、革新的研究開発推進業務勘定、創発的研究推進業務勘定を含む。
※SIP、大学等ファンド基金は含まない

Breakdown of 2021 budget category “Promotion of research and development”



Based on national policies, JST carries out various programs

Topics of JST budget for the next fiscal year

- Program to support **young researchers**
  - Full-scale start of "FOREST" Program
  - Moonshot MILLENNIA Program

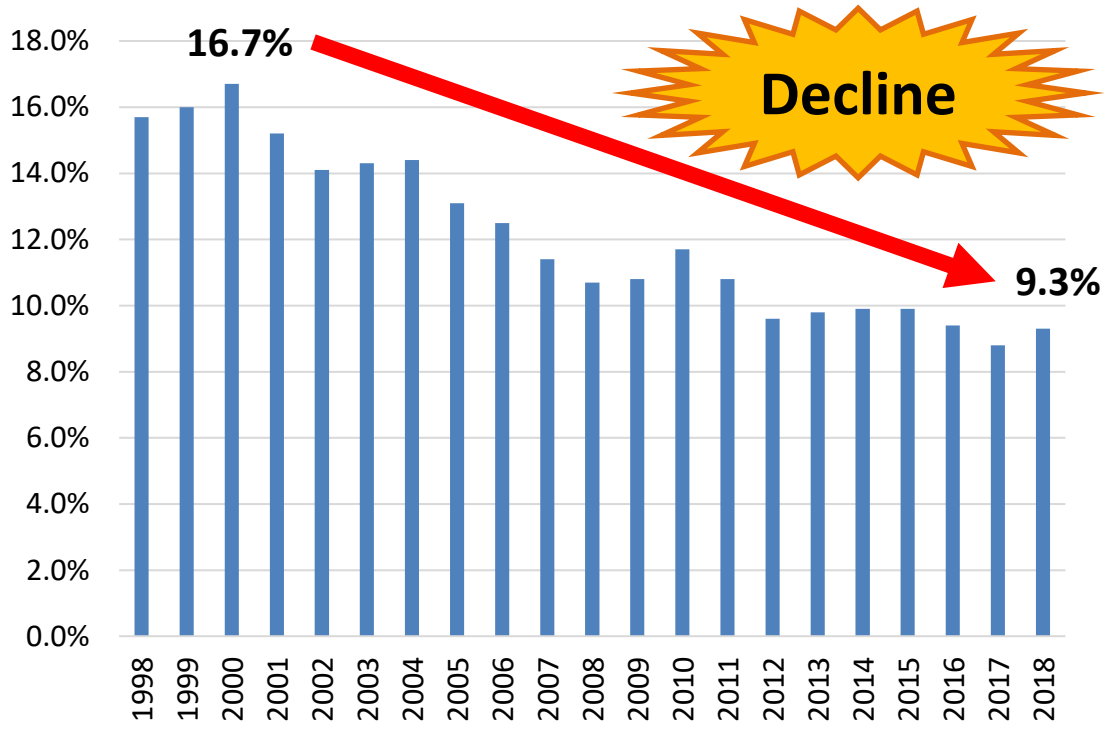
- JST activities for COVID-19, "Plan B"
  - Call for proposals for basic research on the theme of COVID-19

Why Support young researchers?

Many problems

- ✓ Lack of financial support for the burden of college tuition
- ✓ Poor treatment in companies
- ✓ Decline in academic tenure posts
- ✓ Reduced time for research and educational activities

Advancement Rate from Master's Course to Doctoral Course



Date Source: The Ministry of Education, Culture, Sports, Science and Technology (MEXT)

We must improve the research environment for young researchers

FOREST (Fusion Oriented REsearch for disruptive Science and Technology)

- To adapt to an uncertain environment affected by COVID-19 conditions, we need to develop talented young researchers on a long-term basis .

FOREST is a funding program for ambitious transdisciplinary research which goes beyond existing frameworks. It provides secure spaces for researchers to follow their own visions and generate excellent results.

【Eligible applicants】

- **Researchers who are independent/expected to be independent between the age of late 30s and early 40s.**

【Characteristics】

① Assemble high-potential and internationally oriented young researchers in diverse fields.

② Secure research environments for researchers to dedicate themselves to FOREST research.

③ Researchers are expected to proactively promote their ambitious research vision through ①②.

④ Create a “Place of Fusion” to enable mashup of the abilities and ideas of individual researchers through ①②③.

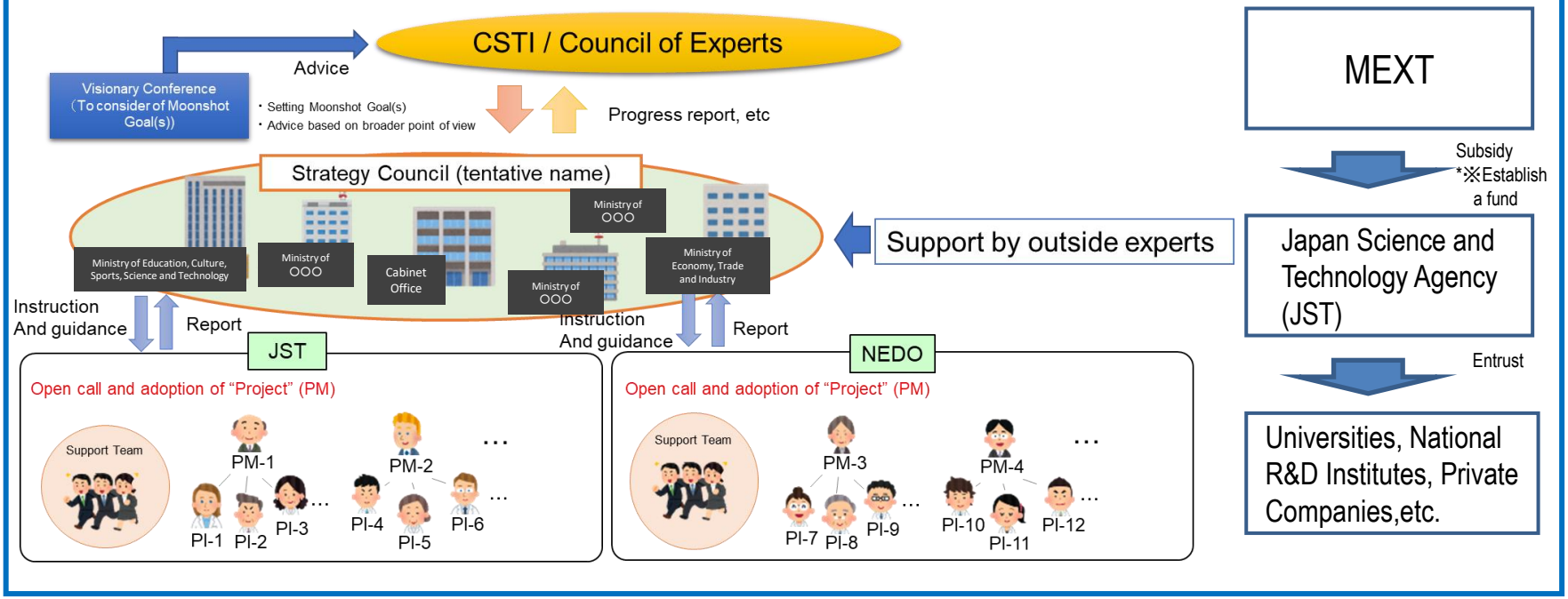
FOREST Leads disruptive innovation
by maximizing talented researchers’ motivation and their research time.

Promotion of Moonshot Research and Development Program

Overview

○Challenging R&D program (“Moonshot”) based on revolutionary concepts that are not simply the extension of existing technologies, and which aim to create disruptive innovations from Japan under Goals established by the Council for Science, Technology and Innovation (CSTI), will be promoted in line with JST’s operations and objectives. In the promotion of R&D, the prospect of achieving Goals will be evaluated at suitable points during the program, and decisions made to continue, expand, and/or terminate the R&D program.

Program scheme



Exploration for New Moonshot Goal(s) -MILLENNIA Program*

*Multifaceted Investigation chaLLEnge for New Normal Initi**A**tives Program

○ The COVID-19 Pandemic and its impacts have encouraged us to create new Moonshot Goal(s) for tackling the challenges in 2050 after the current drastic societal changes.

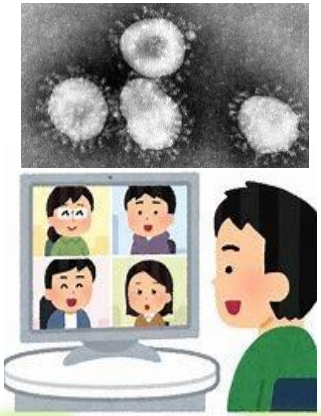
○ One or two new Moonshot Goal(s) will be adopted from ideas generated by **young teams**.

Moonshot Goals which should be achieved by 2050

- Goal 1 : **Realization of a society in which human beings can be free from limitations of body, brain, space, and time**
- Goal 2 : **Realization of ultra-early disease prediction and intervention**
- Goal 3 : **Realization of AI robots that autonomously learn, adapt to their environment, evolve in intelligence and act alongside human beings**
- Goal 4 : **Realization of sustainable resource circulation to recover the global environment**
- Goal 5 : **Creation of the industry that enables sustainable global food supply by exploiting unused biological resources**
- Goal 6 : **Realization of a fault-tolerant universal quantum computer that will revolutionize economy, industry, and security**
- Goal 7 : **Realization of sustainable medical and nursing care systems to prevent and overcome major diseases by 2040, for everyone to enjoy life without health anxiety until 100 years old**
- Goal X : New Moonshot Goal

Goal 1,2,3, and 6 handled by JST

Drastic societal changes



Open call for ideas from youth-focused brainstorming teams, who will lead the next generation

"Moonshot for Human Well-being"

Exploration of New Moonshot Goal(s) - MILLENNIA Program

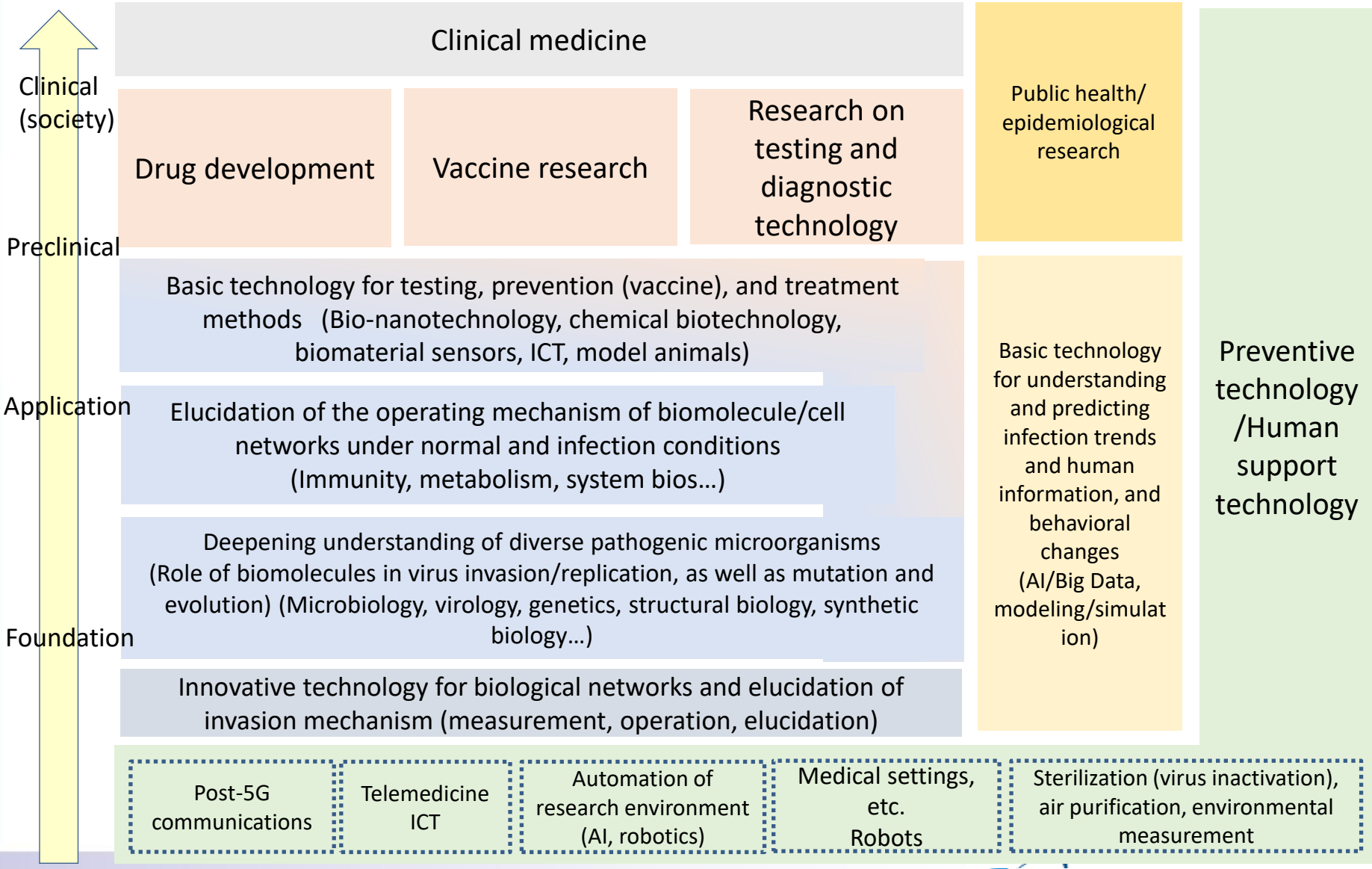
All 21 teams at: https://www.jst.go.jp/moonshot/en/program/millennia.html

Team	Project Title
The team for studies on Flex-Infrastructure (Leader: IMANISHI Mineko, Takenaka Corporation)	Research and study for Flex-Infrastructure realizing flexible and safe places with diverse happiness Keywords: flexible infrastructure based on human knowledge, machine knowledge, and natural knowledge
Street Medical City (Leader: TAKEBE Takanori, Yokohama City University)	Study of the urban design that pushes the self-actualization for humanity Keywords: well-being, sustainability, health, urban planning, guidelines, urban data

JST activities for COVID-19 “Plan B”

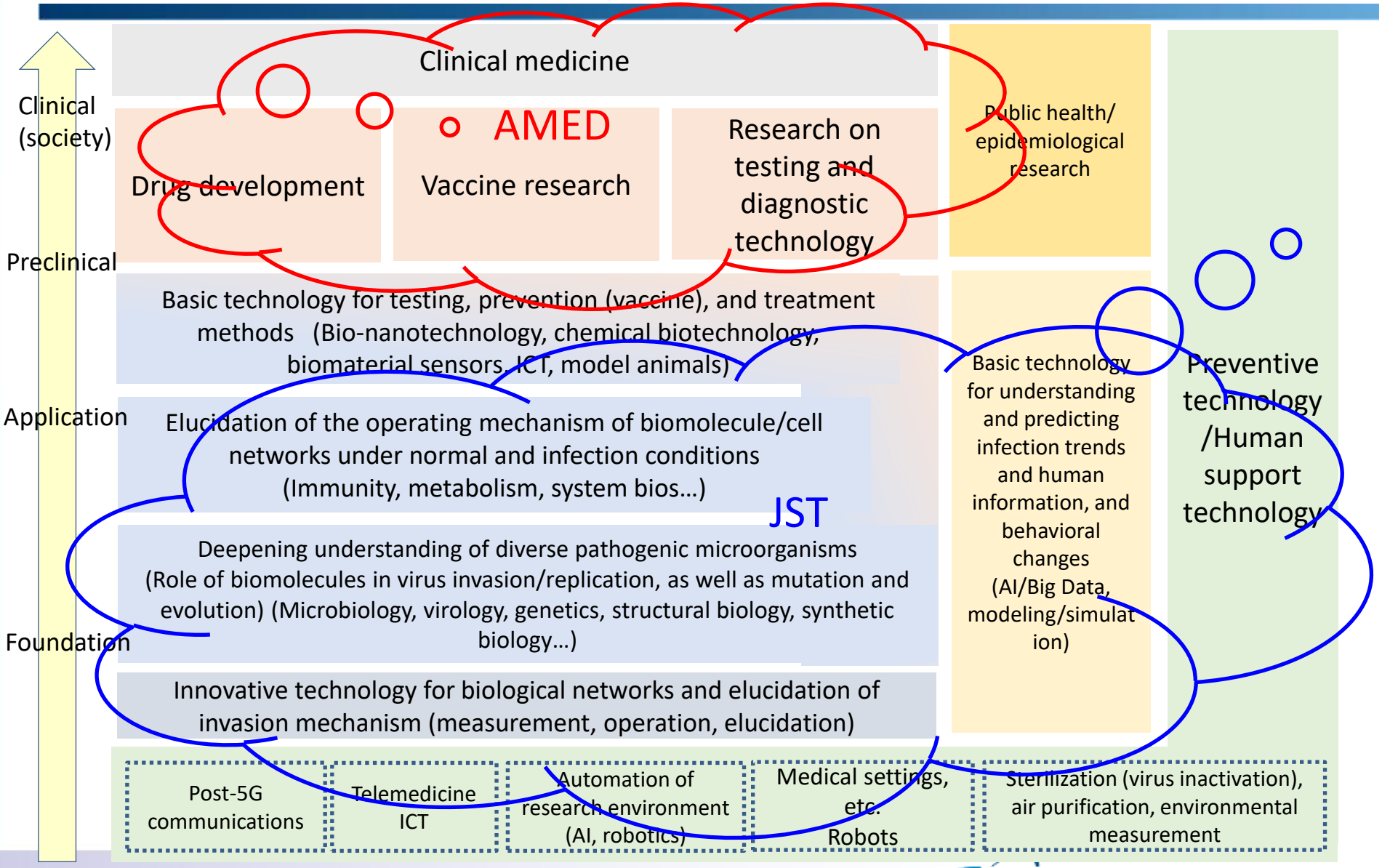
Urgent task to mobilize science and technology

Overview of research on emerging infectious diseases in the “post-corona” era



Revised from JST CRDS, "Notable Global Research Trends on the Novel Coronavirus Infectious Disease"

Japan Agency of Medical Research and Development(AMED) is the only funding agency which can promote R&D in the medical field in Japan.



Revised from JST CRDS, "Notable Global Research Trends on the Novel Coronavirus Infectious Disease"

JST's "Plan B" against COVID-19

What is "Plan B"?

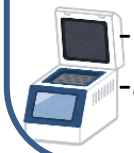
A multidisciplinary approach to create a society in which **we can move, meet, gather and do business freely** under COVID-19 conditions in addition to trials of vaccines and drugs (Plan A).

Present

In the present situation, we need to restrict people's activities

Detect

-temperature check
-PCR
-antigen/antibody test



Clean

-hand-washing
-alcohol (surface) sterilization

Protect

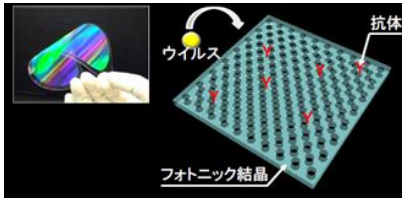
-behavior detection
-isolation
-masks

Upgrade our policy-measures using STI innovation

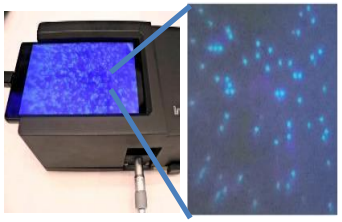
Plan B

detect

High-sensitivity virus detection technology (physical space)

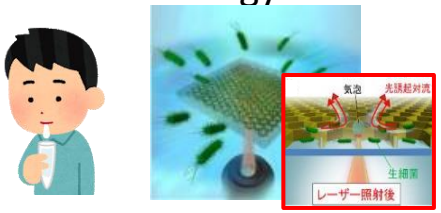


Photonic crystal sheets Under R&D



Digital virus detection method Under R&D

Minimally invasive high-speed high-sensitivity detection technology

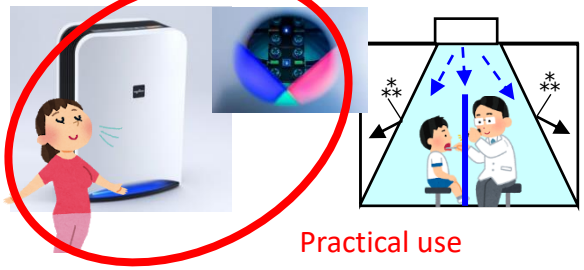


Minimally Invasive High-throughput Optical Condensation System

Under R&D

clean

Deep UV LED (air, water, air curtain, mask sterilization, etc.)

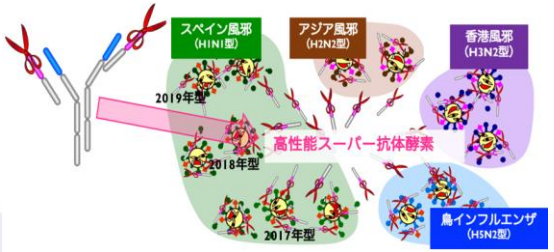


Practical use

Ostrich antibody (application to air conditioner filters, etc.)

Early commercialization

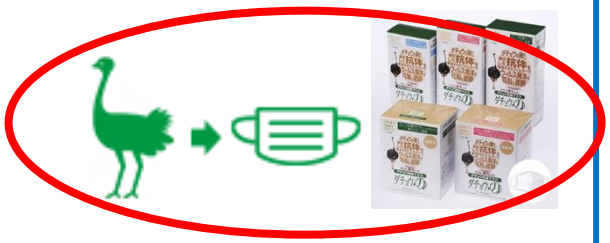
Virus inactivation technology (super antibody enzyme)



Under R&D

protect

High-performance mask (Ostrich antibody, etc.)



Ostrich antibody Practical use

Remote health screening

Cloud service MeDaCa

Practical use

Special call for proposals for basic research on the theme of COVID-19

CREST – The Strategic Basic Research Programs – Special Call for basic research COVID-19

Overview

CREST is a funding program for team-oriented research with the aim of achieving the strategic goals set forth by the government. The objective is to create revolutionary technological seeds for science and technology innovation.

Special call

This research area aims to strengthen the ability of society to respond to infectious disease crises such as COVID-19. It utilizes and combines various types of non-medical knowledge such as engineering, information and nanotechnology. We develop fundamental technologies to minimize infection and create an environment that protects people's lives and allows them to engage in normal activities even if there is a virus.

Total Budget	Research Period	Number of Projects	Research Start
150 Million Yen	No longer than 3.2 years	10	2021.2~

International programs on COVID-19

Support international research projects in non-medical sciences related to the prevention and mitigation of pandemic with partner funders:

Urgent response 1
Bilateral cooperation with: France ANR, UKRI, USA/NSF (J-RAPID)
11 projects for FY2020; 5.5 mil – 6 mil JPY/project

Continued response 2
Continued bilateral cooperation with: France ANR, UKRI, USA/NSF + Canada NRC (SICORP)
Deadline: February 1, 2021; about 10 projects; 1 year from FY2020; 6.5 mil – 7.8 mil JPY/project

Urgent response 3
Multilateral cooperation with: Philippines DOST; Thailand NRCT, ARDA; Vietnam MOST (e-ASIA)
5 projects; 1 year from FY2020; max 10 mil JPY/project

Urgent response 4
Flexible application of planned bilateral cooperation with: US/NSF (SICORP)
Digital science which contributes to the new normal by COVID-19
Deadline: February 24, 2021; about 3 projects; 3 years from FY2020; max 75 mil JPY/project

J-RAPID Program
–Urgent International Collaboration R&D on Disasters

Concept

The *J-RAPID* program supports urgent collaboration between Japanese and foreign researchers following natural or anthropogenic disasters or similar unanticipated events.

Objective

To play an initial response role by promptly supporting activities before ordinary projects are implemented by the national government, academic societies, or others.



Month/Year	Research/investigation areas
Apr 2020	J-RAPID Collaborative Research/Survey Program for Urgent Research on the **Coronavirus Disease 2019 (COVID-19)**
Feb 2019	Japan-Indonesia Urgent Collaborative Projects regarding **Sunda Straits tsunami**
Apr 2016	International Urgent Collaborative Projects regarding **Kumamoto Earthquake**
Jun 2015	Japan-Nepal Urgent Collaborative Projects regarding the **Nepal earthquake**
Feb 2014	Japan-Philippine Urgent Collaborative Projects regarding **Typhoon Yolanda**
Feb 2012	Japan-Thai Urgent Collaborative Projects in response to **Thai flood disaster**
Apr 2011	International Urgent Collaborative Projects regarding the **Great East Japan Earthquake**

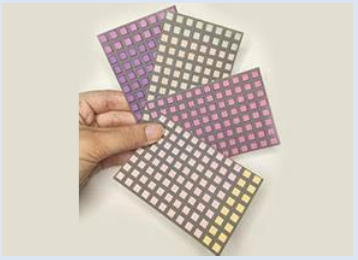
11 New J-RAPID Projects Targeting COVID-19

Real-time monitoring of novel coronavirus infections using wastewater-based epidemiology approach

Prof. Eiji Haramoto,
Univ Yamanashi
Dr. Kyle Bibby,
Univ. Notre Dame

Detects viruses in sewage and captures local infections

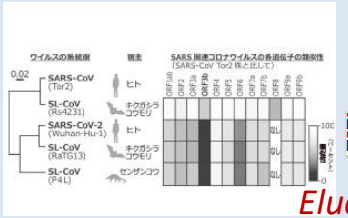
Paper-Based Sensor Devices for Rapid and Accurate Detection of COVID-19



Dr. Tsuyoshi Minami,
Univ. Tokyo
Dr. Anthony Genot,
CNRS

Inexpensive paper sensors and machine learning - aiming for virus detection within minutes

Investigation of the roles of SARS-CoV2-encoding genes on the COVID-19 pathogenesis and viral cross-species transmission



Dr. Kei Sato,
Univ. Tokyo
Prof. Massimo Palmarini,
Univ. Glasgow

Elucidating the molecular mechanisms of cross-species transmission of coronaviruses and their pathogenicity

National Online Survey of Children's Quality of Life and Health in the COVID-19 Pandemic in Japan (CORONA x CODOMO)

Dr. Naho Morisaki,
Nat. Center for Child Health and Development
Dr. Polly Waite,
Univ. Oxford

Delivering the voices of children - connecting to society through a national survey

Thank you for your kind attention!