

Japan-Australia University Dialogue 2019

10.9.2019 at Osaka University



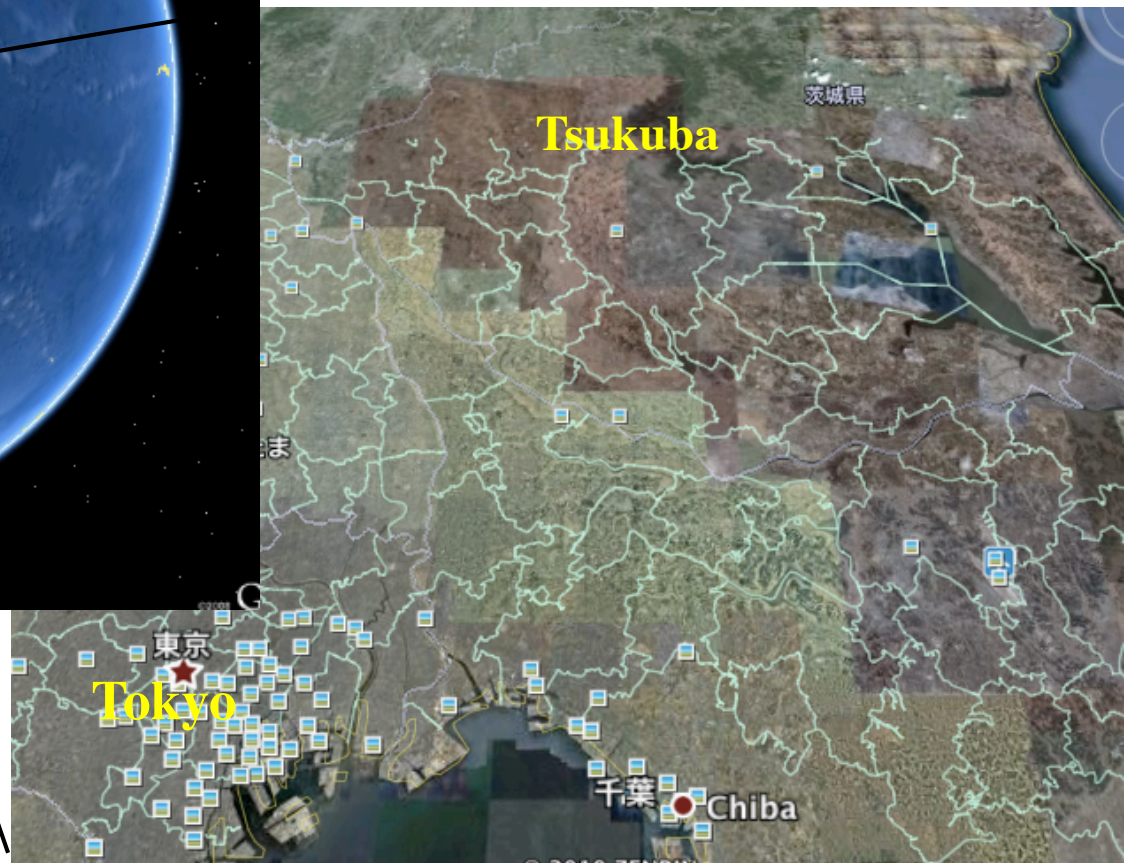
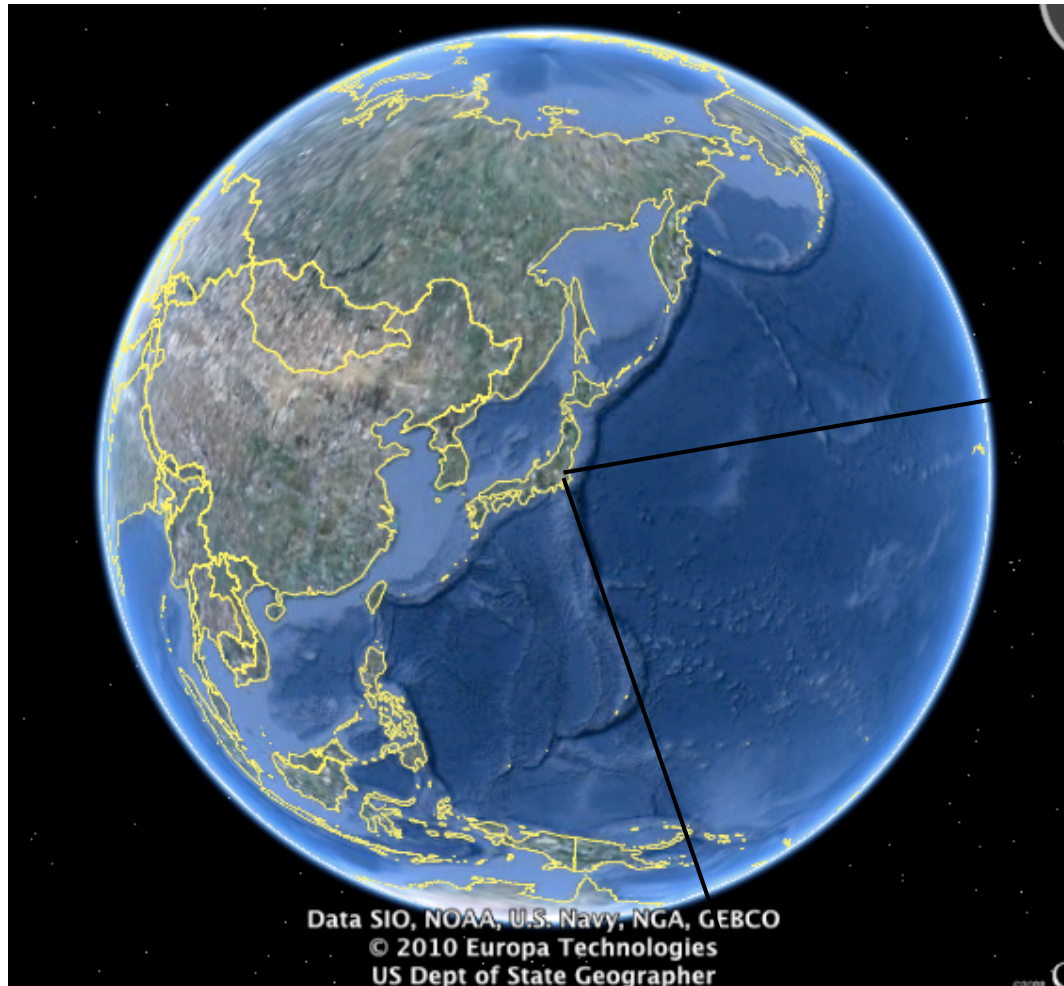
University of Tsukuba & Industry-University Collaborative Research



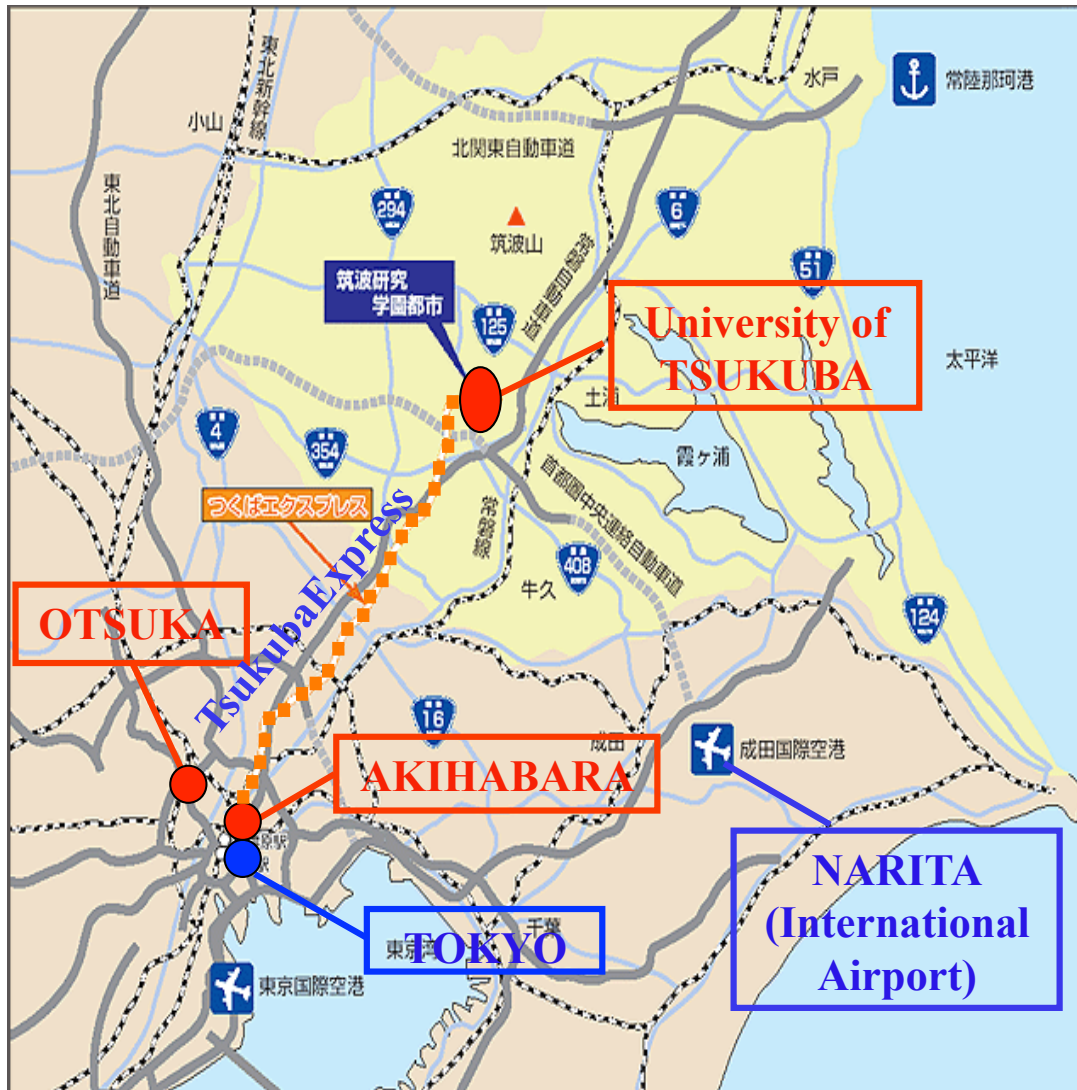
Yasunori Kanaho, Ph.D.

**Vice President and Executive Director
for Collaborative Research**

Where is Tsukuba?



University of Tsukuba

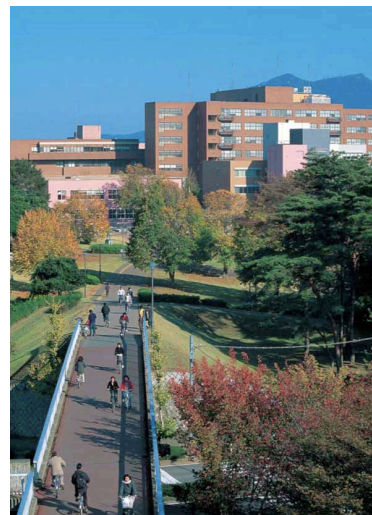


- locates in Tsukuba City, 60 km northeast of Tokyo
- **45 min** from Tokyo and **30 min** from Narita International Airport
- second largest campuses in Japan (260 ha)
- the core institution in the Tsukuba Science City, where 300 institutes are located and 13,000 researchers live (4,000 foreigners)

Tsukuba is the largest science city in Japan

32 national research institutes and related organizations,
accommodating about 30% of all national institutes
as well as more than 200 private Institutes.

1 out of 10 residents of Tsukuba city is a researcher.



Forestry and Forest Products Research Institute



独立行政法人 物質・材料研究機構
National Institute for Materials Science



宇宙航空研究開発機構
Japan Aerospace Exploration Agency



National Research Institute
for Earth Science
and Disaster Prevention.



National Institute of
Agrobiological Sciences



National Food
Research Institute

Functionality
Safety
Biotechnology



National Institute for Rural Engineering



独立行政法人 農業・食品産業技術総合研究機構

45+101 Years of Unique History

146 years of History and Tradition

Funded as Higher Normal School (1872)

→ Tokyo University of Education (1949)

→ University of Tsukuba (1973)



**Dr. TOMONAGA
Sin-Ichiro**
(Physics, 1965)

3 Nobel Laureates



Dr. ESAKI Leo
(Physics, 1973)



**Dr. SHIRAKAWA
Hideki** (Chemistry,
2000)

115 Medals in Olympic Games



Silver Medalists at London Olympics 2012

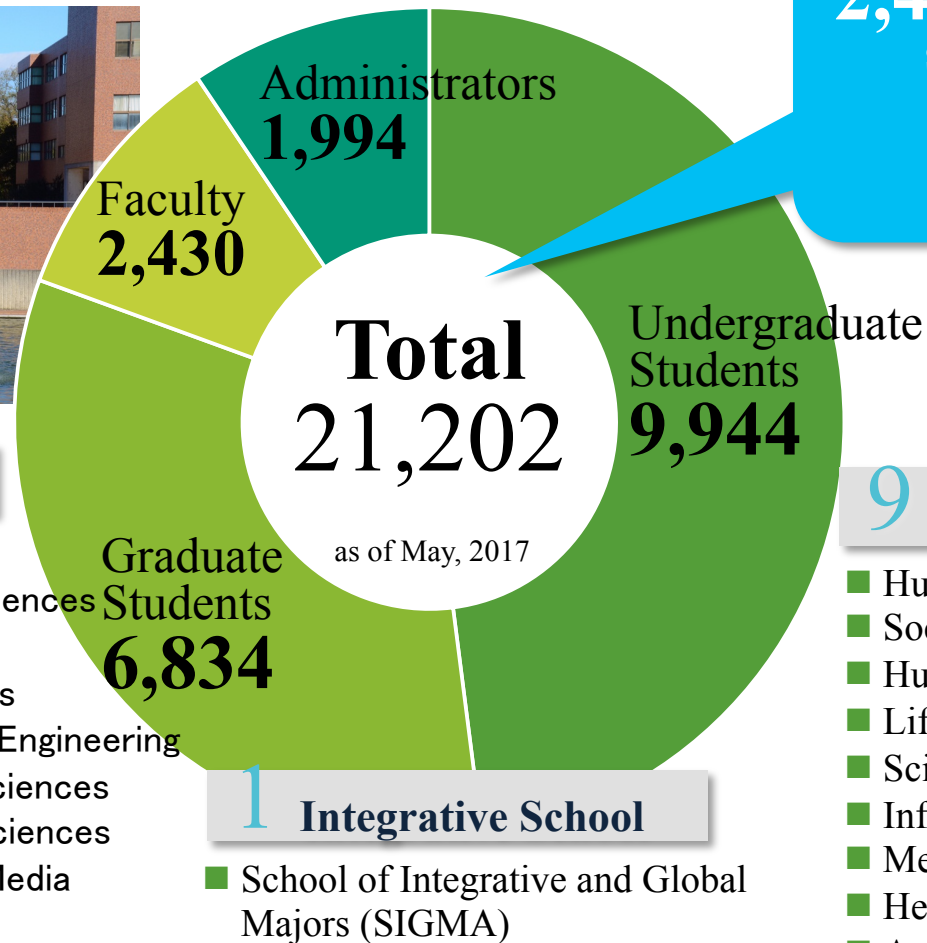


Number of Students and Staff



8 Graduate schools

- Education
- Humanities and Social Sciences
- Business Sciences
- Pure and Applied Sciences
- Systems and Information Engineering
- Life and Environmental Sciences
- Comprehensive Human Sciences
- Library, Information and Media Studies



1 Integrative School

- School of Integrative and Global Majors (SIGMA)

2,426 International students from **117** countries



9 Undergraduate Schools

- Humanities and Culture
- Social and International Studies
- Human Sciences
- Life and Environmental Sciences
- Sciences and Engineering
- Informatics
- Medicine and Medical Sciences
- Health and Physical Education
- Art and Design



President of University of Tsukuba
Dr. Kyosuke Nagata



Headquarter for International Industry-University Collaboration



Dr. Kanaho
(Executive Director)



Dr. Uchida
(Professor)

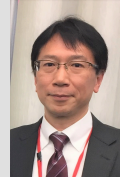
General manager

Deputy Director General

Vice Director General

Entrepreneurship Education

Dr. Ouchi
(Professor)



Research & Development Center (Established in July 2015)

1. Algae Biomass & Energy System R&D Center (2015/7)
2. R&D Center for Precision Medicine (2017/1)
3. R&D Center for Sports Innovation (2017/4)
4. R&D Center for Strategic Frontiers Social Planning (2017/4)
5. R&D Center for Health Service (2017/7)
6. R&D Center for Tailor-Made QOL (2019/2)
7. R&D Center for Working Person's Psychological Support (2019/4)

Co-creative Producers:

4 members

Technology Transfer Managers:

6 members

Industry-University Collaboration Department

- Intellectual Property
- National funds
- Research collaboration

Strategic Plans to Strengthen Industry Collaborations

Tsukuba Strategies for Industry-University Collaboration

I	“R&D Center” framework	July, 2015
II	Special Collaborative Research Projects	December, 2014
III	Market-to-Business-to-Academia Collaboration Process	Aug, 2014
IV	Expand international collaborations	Aug, 2014
V	Innovation Medical Research Institute	Aug, 2015

Research & Development Center

Missions of University of Tsukuba

Social Contributions

Research

Education

R&D Centers

Research
Centers

Schools

Innovative Organization operated by external funds

Objective

- ◆ Create innovation
- ◆ Participation of industry personnel
- ◆ Speed up research
- ◆ Cultivate industry-directed culture & entrepreneurial talents

Management

- ◆ Promote industry-university collaboration in research areas with high social demands
- ◆ 5 years duration (with a possibility to extend)
- ◆ Will be abolished when external funding is no longer available

276 million ¥ (30% of large-scale joint research over 10 million yen)

1. Algae Biomass & Energy System R&D Center (2015/7)

The world's first research center for algae biomass development



2. R&D Center for Precision Medicine (2017/1)

Japan's first \$ 1000 genome analysis center



3. R&D Center for Sports Innovation (2017/4)

National University's first social experiment center of athletic department (AD)



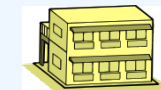
4. R&D Center for Strategic Frontiers Social Planning (2017/4)

Open laboratory for research and development of the future smart city through Society 5.0



5. R&D Center for Health Service (2017/7)

Japan's first center for studying services that bring health and well-being to people



6. R&D Center for Tailor-Made QOL (2019/2)

Provide a program to improve each person's QOL through eating, exercising and sleeping



7. R&D Center for Working Person's Psychological Support (2019/4)

Psychological support for workers and advancement of support personnel

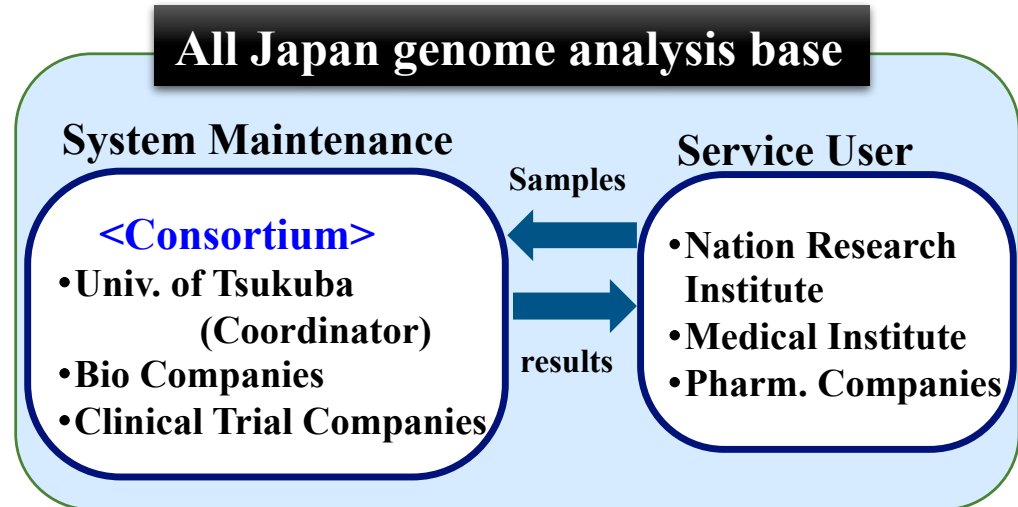
Japan's first 1,000 \$ genome analysis base

Current Status: Precious DNA of Japanese outflow to overseas

Region	No.	City of 1000\$ genome analysis base
Japan	0	
USA	5	Alabama (1), California (2), New York (1), Missouri (1)
EU	7	GB (3), Iceland (1), DE (1), Austria (1), Sweden (1)
Korea	1	Soul(1)
China	2	Beijing (1), Shanghai (1)
Middle East	1	Qatar (1)

Will be abolished when external funding is no longer available

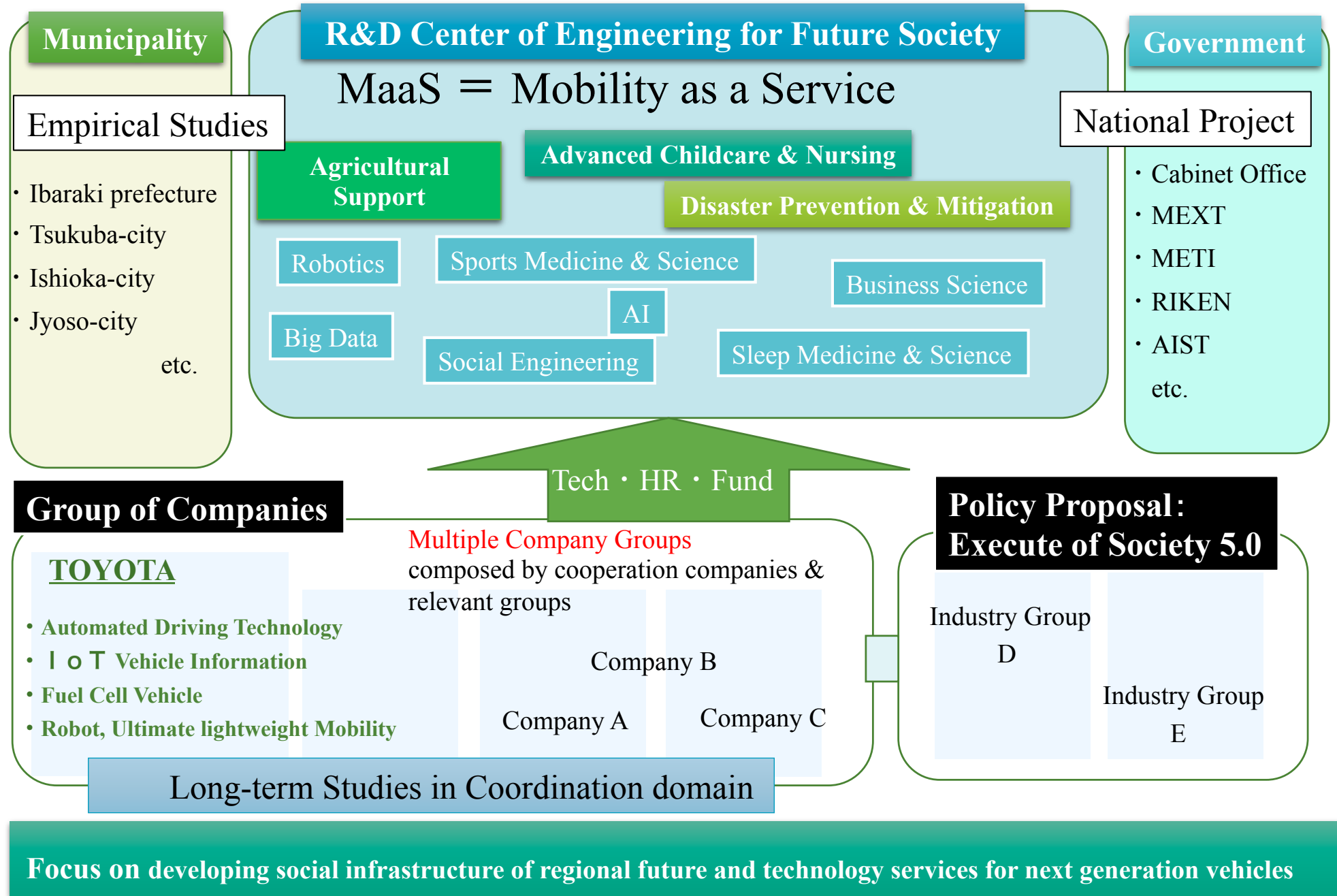
All Japan genome analysis base



Innovation Medical Research Building



R&D Center of Engineering for Future Society

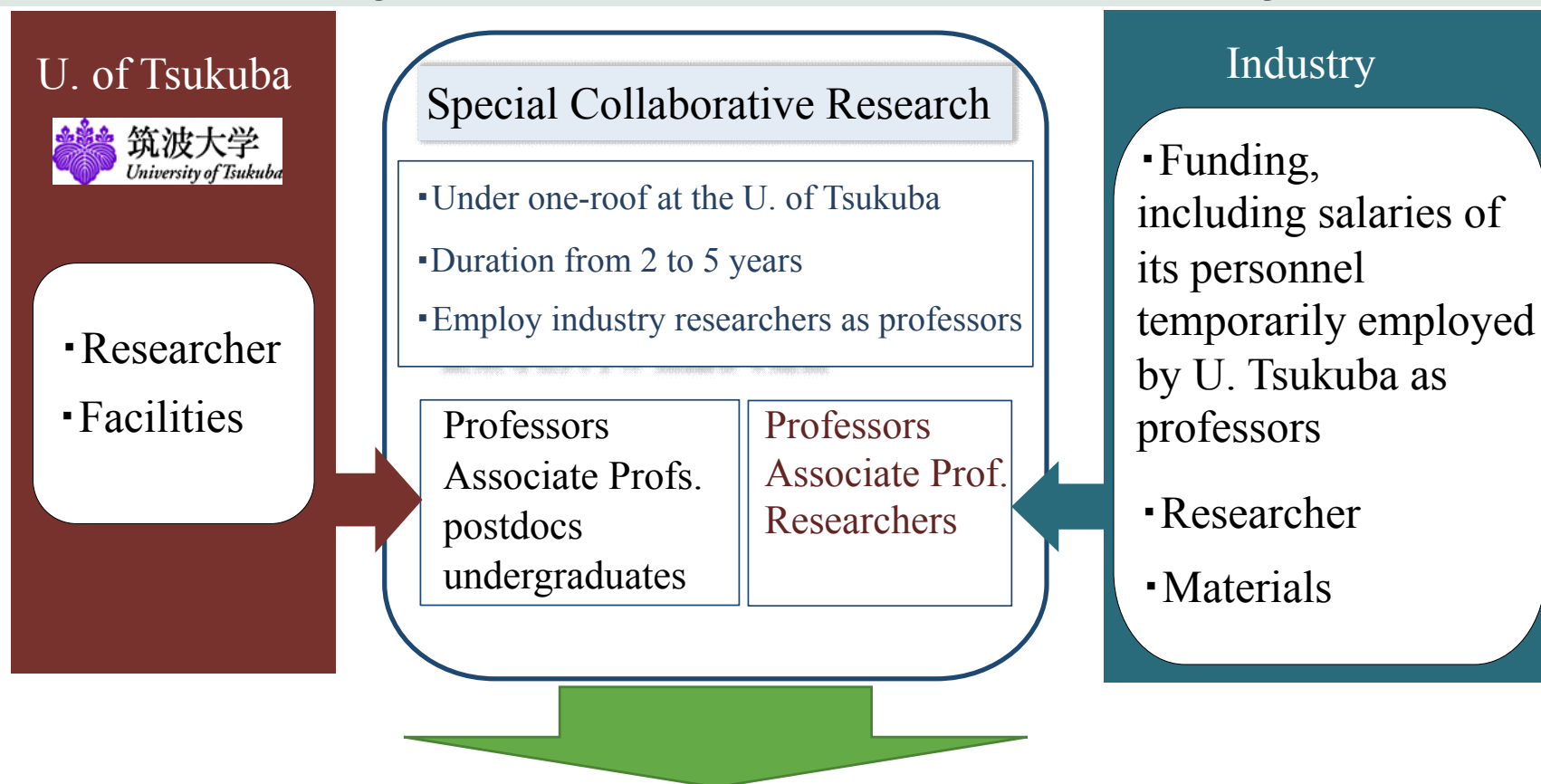


Special Collaborative Research Projects

December, 2014

Collaborative research under one-roof between industry and U. of Tsukuba to promote social implementation of research outputs

Mutual understanding of what to be solved to achieve a business goal



1. Industry & University researchers both participate to accelerate future business
2. Industry researchers participate in education at the University

Special Collaborative Research Projects

IMAGINE THE FUTURE.

243 million ¥ (about 25% of large-scale joint research over 10 million yen)

	Research Field	Company	Faculty	Start
1	Mental Health	Hospital	IIIS	2015.4
2	Plant bio	Bio	Life & Environmental Sciences	2015.10
3	Foods	Farm	Life & Environmental Sciences	2016.4
4	Bio Technology	Chemical	Life & Environmental Sciences	2017.4
5	Genome Information Service	U of Tsukuba Startups	Headquarters for Industry University Collaboration	2017.4
6	Radiation therapy	Healthcare	Medicine & Medical Sciences	2017.10
7	Digital Nature	U of Tsukuba Startups	Library Information & Media Science	2018.2
8	Advance Analysis System	Science equipment	Pure and Applied Sciences	2018.4
9	Health Food	University Startup	Life & Environmental Sciences	2018.7
10	Future Shop Design	Information	Art and Design	2018.10

Market-to-Business-to-Academia is Collaboration Process

Conventional collaboration

Tries to transfer technologies & IPs developed at universities

Academia to Business to Market (A2B2M)



A new strategy for expanding industry collaboration

Exploits University's research potential to realize future business plan of the Industry

Market to Business to Academia (M2B2A)



Accumulated Research Power, Facility, Science Network, Educational Environment, Clinic Environment, Seeds & IPs etc.



Mapping of Tsukuba's Research Potential Categorized by Industry Areas

		Faculties of U. of Tsukuba						
		Medicine	System Info	Pure & Appl Sci	Life Environ.	Humanities	Art, Design	Health, Sport
Industrial Areas	Pharma							
	Medical devices							
	Health							
	Transportation							
	Energy							
	IT							
	Materials							
	Food							
	Sports							
	Social, business							

University Startup Support of U. of Tsukuba

