

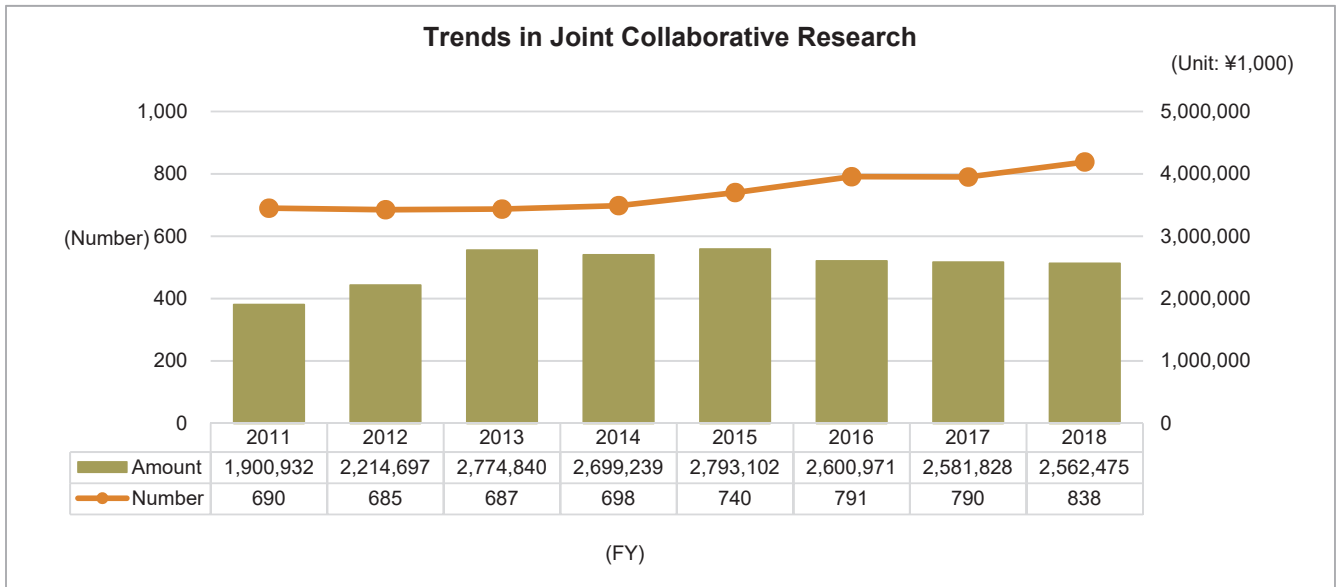
11. Industry-University-Government Collaboration

11-1. Joint Collaborative Research

11-1-1. Trends in Joint Collaborative Research

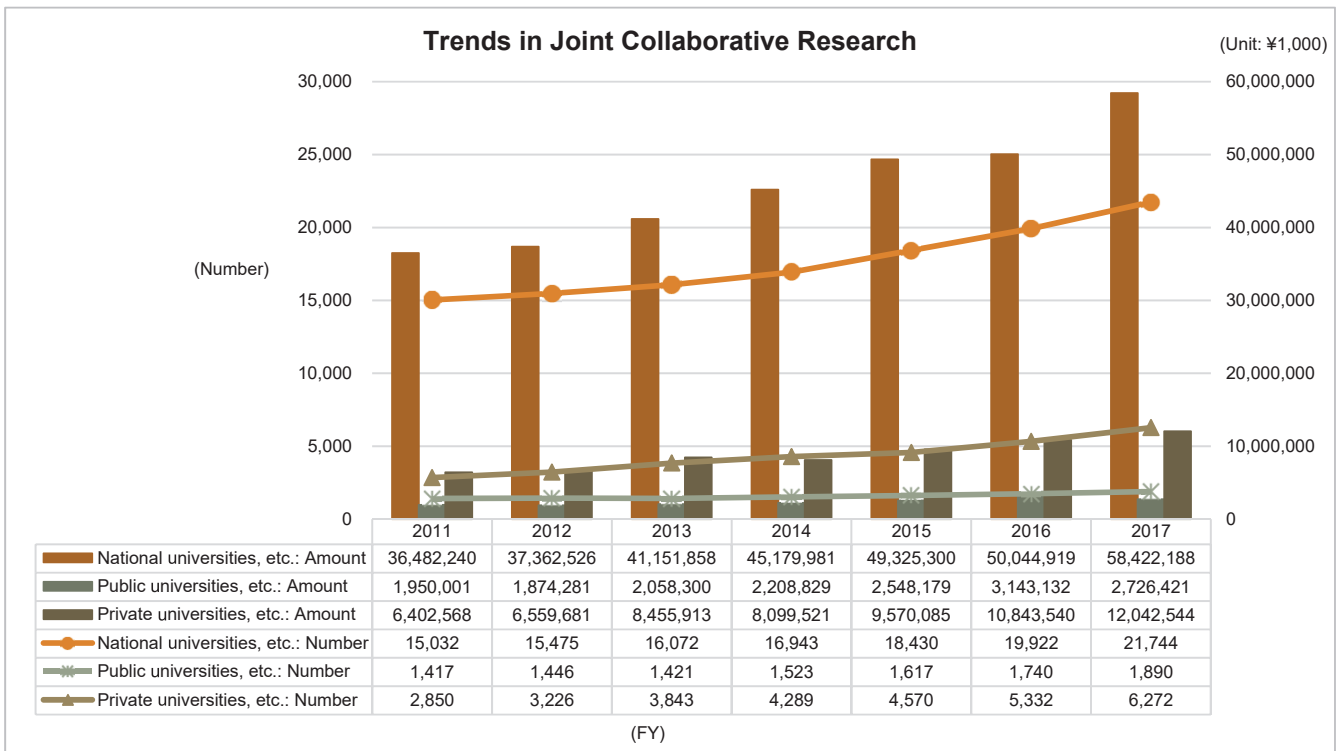
Nationwide scale, both the value and the number are on an upward trend. In recent years, the trend for the University has been flat.

◆ Kyushu University ◆



*Source: Kyushu University Information.

◆ Nationwide ◆



*Source: MEXT, Industry-Academia Collaboration in Higher Education Institutions Joint Collaborative Research Outputs by Institution, figures for each fiscal year.

11-1-1. Trends in Joint Collaborative Research (Continued)

◆ Comparisons with Other Universities ◆

Number of Joint Collaborative Research Projects with the Private Sector Nationwide: National, Public, and Private Universities

Income from Joint Collaborative Research with the Private Sector Nationwide: National, Public, and Private Universities

(Unit: ¥1,000)

Rank	University	Number	Rank	University	Amount
1	The University of Tokyo	1,835	1	The University of Tokyo	7,250,889
2	Osaka University	1,250	2	Osaka University	6,831,412
3	Tohoku University	1,037	3	Kyoto University	4,900,600
4	Kyoto University	1,034	4	Tohoku University	3,399,198
5	Kyushu University	695	5	Nagoya University	2,805,459
6	Nagoya University	637	6	Keio University	2,219,696
7	Tokyo Institute of Technology	610	7	Kyushu University	2,104,657
8	Hokkaido University	576	8	Tokyo Institute of Technology	1,942,971
9	Keio University	567	9	Hokkaido University	1,346,765
10	Kobe University	488	10	Kobe University	1,164,206

(2017)

(2017)

Income per Project from Joint Collaborative Research with the Private Sector Nationwide: National, Public, and Private Universities

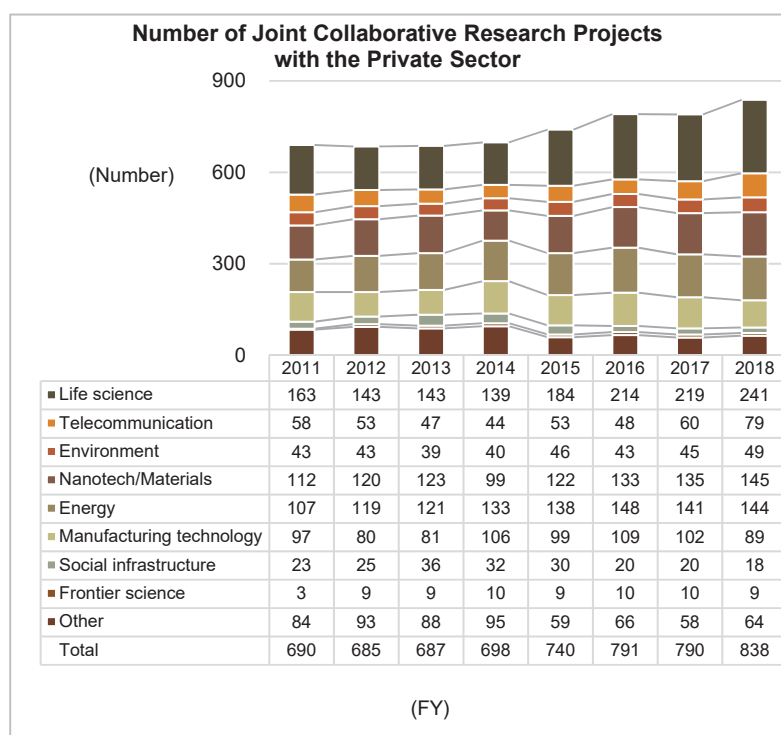
(Unit: ¥1,000)

Rank	University	Income per project	Number
1	Kansai Medical University	6,544	14
2	Kurume University	5,797	37
3	Osaka University	5,465	1,250
4	Juntendo University	5,370	89
5	St. Marianna University School of Medicine	5,138	23
6	Kyoto University	4,739	1,034
7	Fujita Health University	4,563	23
8	Nagoya University	4,404	637
9	Jichi Medical University	4,081	35
10	Sapporo Medical University	3,976	31
⋮			
20	Kyushu University	3,028	695

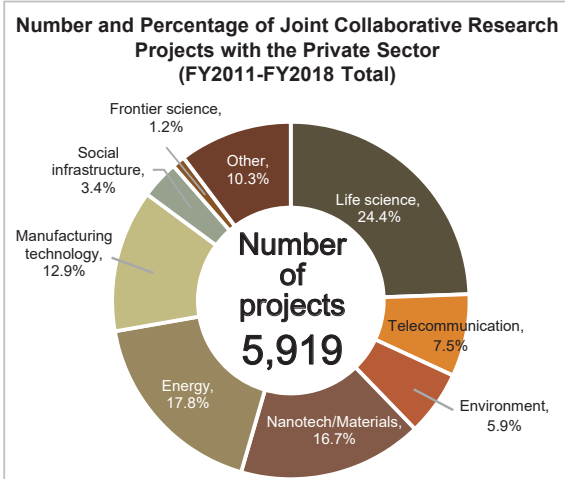
(2017)

Source: MEXT, *Industry and Public Organizations in Higher Education Institutions in FY2017*

11-1-2. Trends in Joint Collaborative Research (by Field)



◆ Kyushu University ◆



In this study, joint collaborative research refers to research jointly by a university or similar institution and industry and private organizations, etc., in which necessary project expenses incurred by the university, etc. are covered by the private organization, etc.

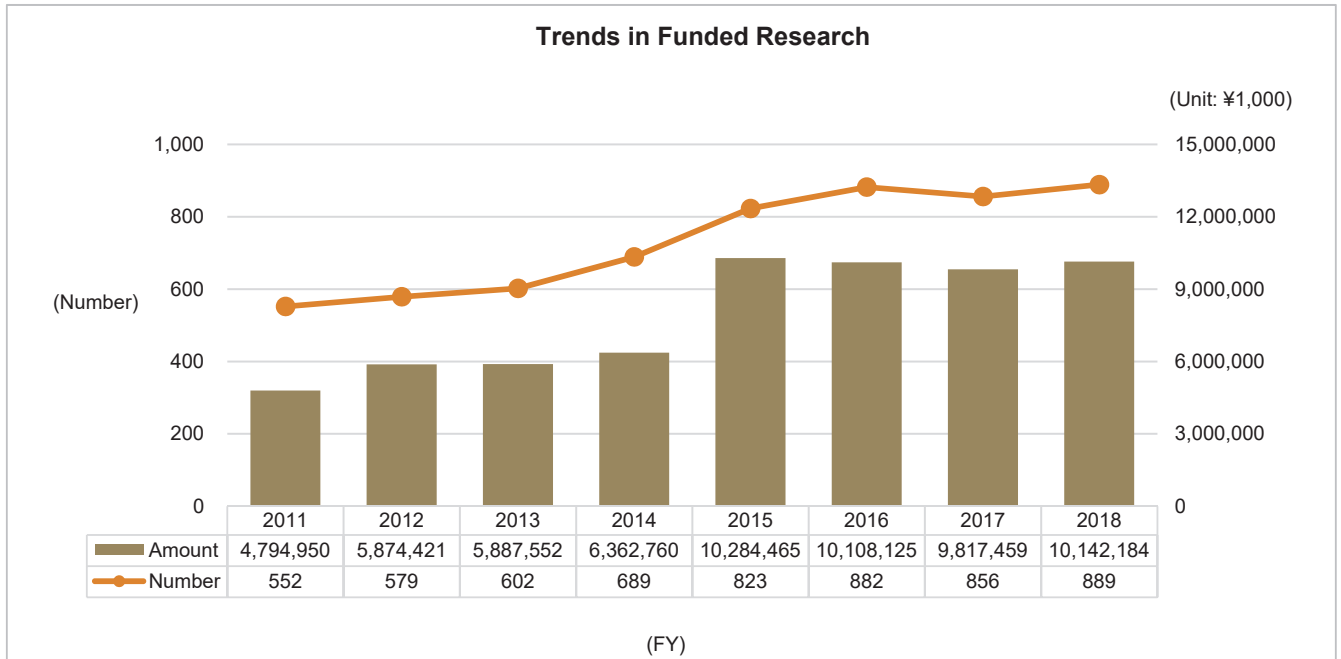
*Source: *Kyushu University Information*

11-2. Funded Research

11-2-1. Trends in Funded Research

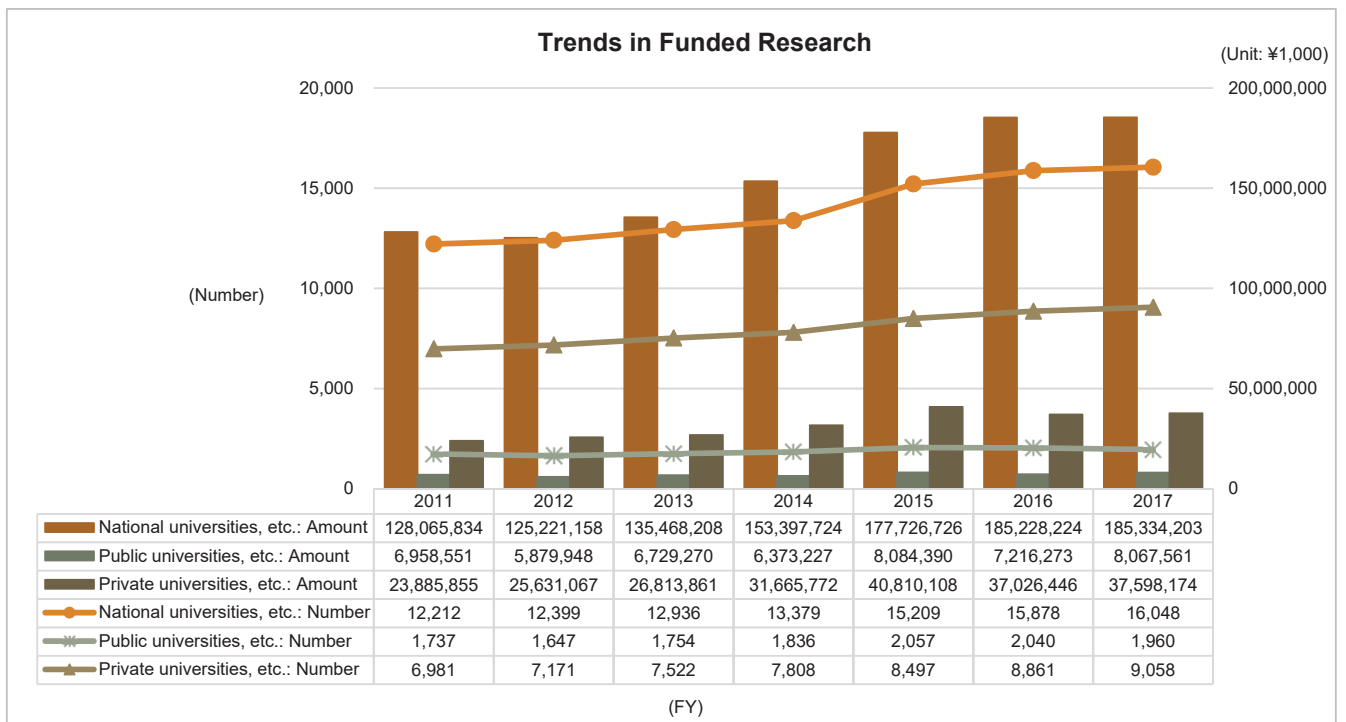
Kyushu University has been experiencing an upward trend, and in recent years this has exceeded 10 billion yen.

◆Kyushu University◆



*Source: *Kyushu University Information*

◆Nationwide◆



*Source: MEXT, *Industry-Academia Collaboration in Higher Education Institutions Joint Collaborative Research Outputs by Institution*, figures for each fiscal year.

11-2-1. Trends in Funded Research (Continued)

◆Comparisons with Other Universities◆

Number of Research Projects Funded by the Private Sector Nationwide: National, Public, and Private Universities

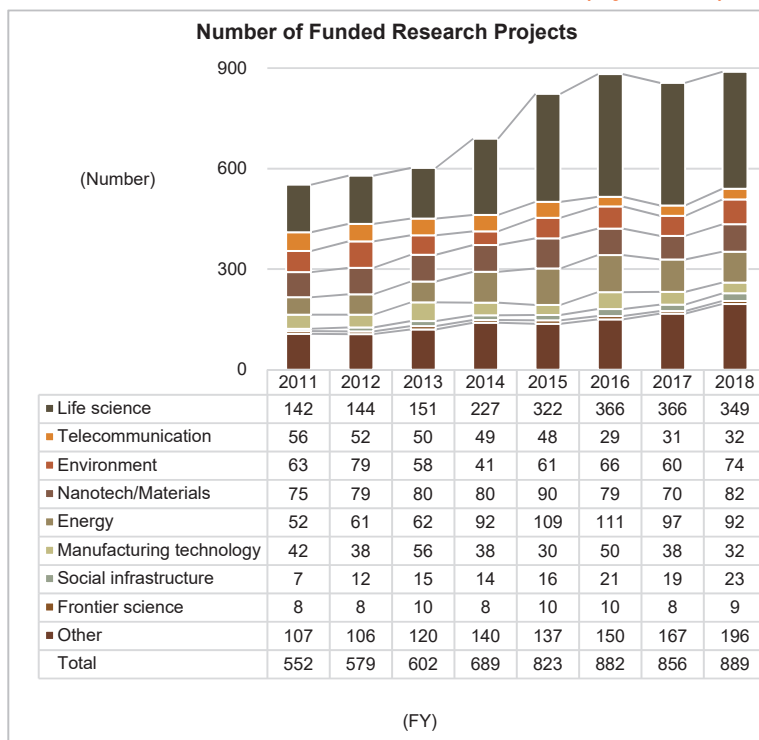
Income from Research Funded by the Private Sector Nationwide: National, Public, and Private Universities

Income per Project from Research Funded by the Private Sector Nationwide: National, Public, and Private Universities

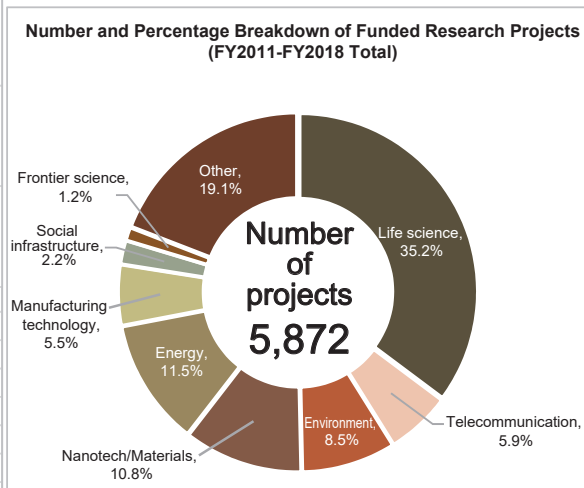
Rank	University	Number	Rank	University	Income	Rank	University	Income per project	Number
1	Kindai University	325	1	Keio University	794,632	1	Hokkaido Information University	9,079	16
2	Ritsumeikan University	248	2	Nihon University	522,088	2	Hitotsubashi University	7,670	10
3	Keio University	226	3	Kyushu University	434,570	3	Nagoya University	4,697	88
4	Nihon University	204	4	Waseda University	428,460	4	Tokyo Women's Medical University	4,096	32
5	Waseda University	162	5	Osaka University	423,086	5	Kyoto University	4,063	100
6	Takushoku University	157	6	Nagoya University	413,353	6	University of the Ryukyus	4,014	46
7	Osaka University	148	7	Kyoto University	406,250	7	Wakayama Medical University	3,783	40
8	The University of Tokyo	144	8	Kindai University	398,874	8	Kyushu University	3,714	117
9	Yamagata University	140	9	Ritsumeikan University	284,433	9	Keio University	3,516	226
10	Tokyo City University	127	10	The University of Tokyo	245,746	10	Osaka Institute of Technology	3,507	18
⋮			(Unit: ¥1,000)			(Unit: ¥1,000)			
11	Kyushu University	117	(2017)			(2017)			

*Source: MEXT, *Industry and Public Organizations in Higher Education Institutions in FY2017*

11-2-2. Trends in Funded Research (by Field)



◆Kyushu University◆



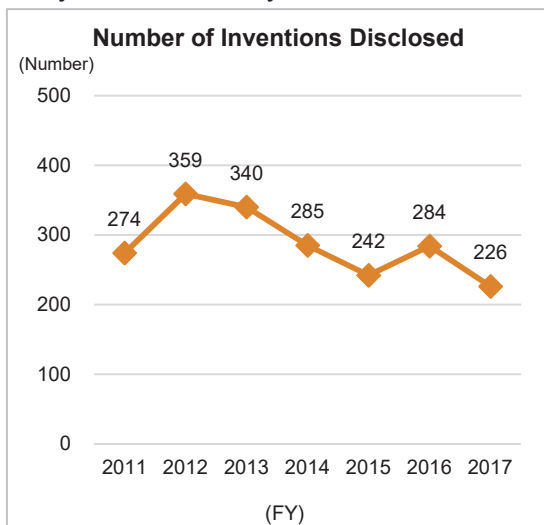
• In this study, funded research refers to research to a university by a private sector company, etc., in which, in most cases, the university, etc. alone conducts the research and development, with the expenses incurred being covered by the private organization, etc.

*Source: *Kyushu University Information*

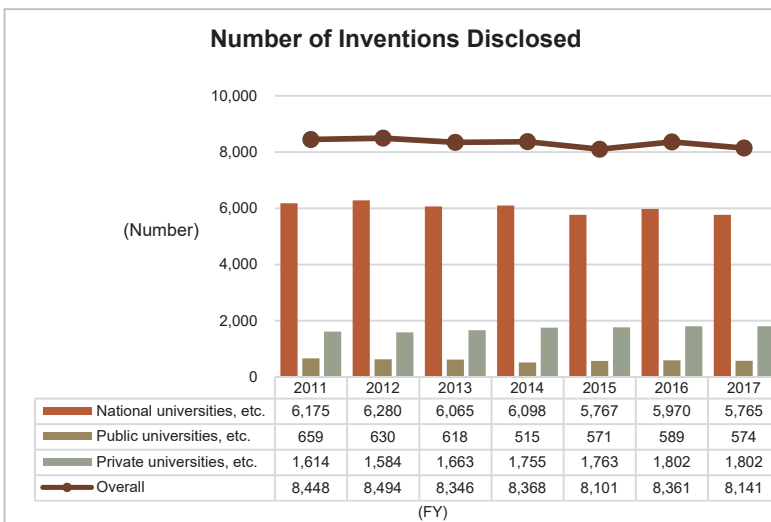
11-3. Intellectual Property

The number of inventions disclosed by Kyushu University and the number of patent applications have been on the decline in recent years. The number of patents held is increasing stably.

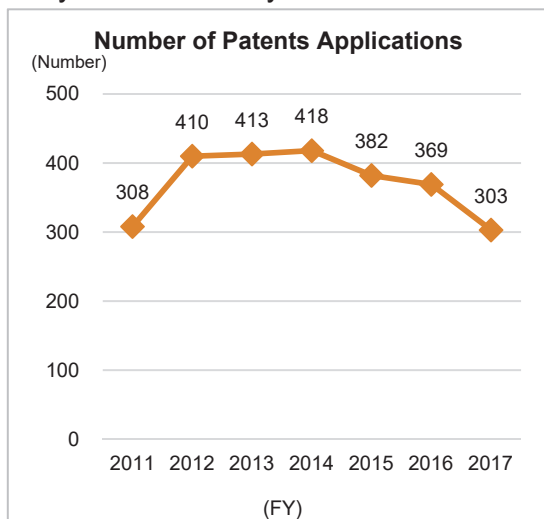
◆ Kyushu University ◆



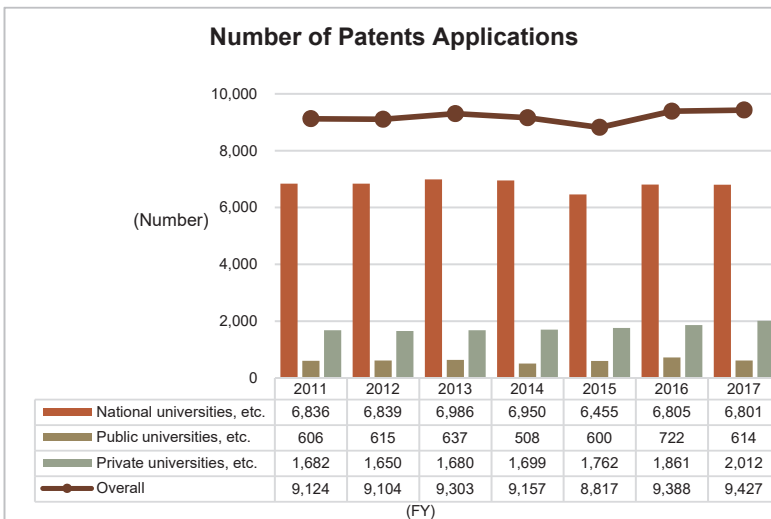
◆ Nationwide ◆



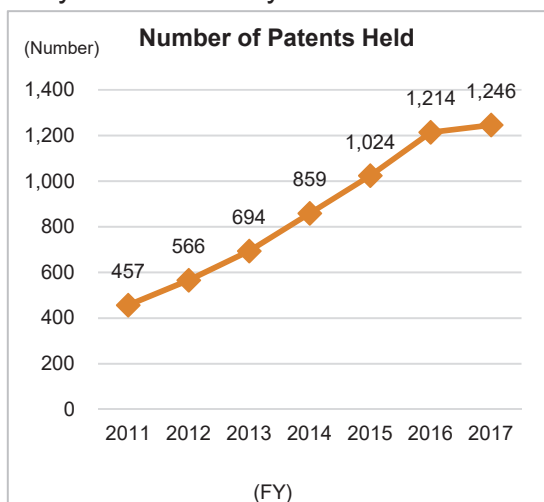
◆ Kyushu University ◆



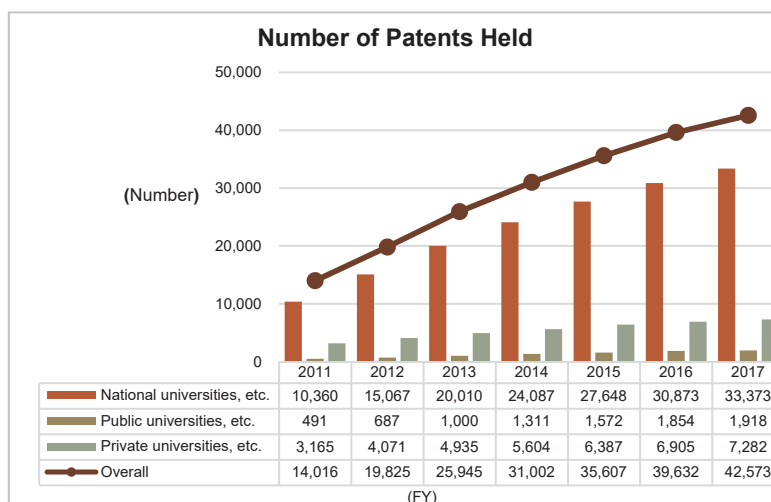
◆ Nationwide ◆



◆ Kyushu University ◆



◆ Nationwide ◆



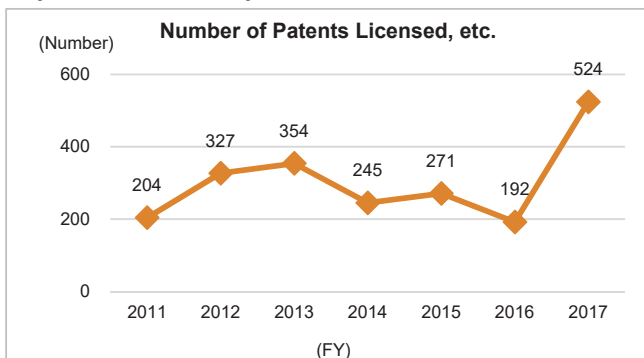
*Source: MEXT, *Industry-Academia Collaboration in Higher Education Institutions Joint Collaborative Research Outputs by Institution*, figures for each fiscal year.
(Number of Inventions Disclosed: Kyushu University Website > AiRiMaQ Academic Research / Industry-University Collaboration Headquarters homepage > Performance, Regulations, Forms > Industry-University-Government Collaboration Performance)

11-3. Intellectual Property (Continued)

Nationwide, recent years have seen an upward trend in the number of patents licensed, the amount of income from licensing, and the number of start-ups created by universities. At Kyushu University, income from licensing patents, etc. rose sharply in FY2015, and the number of patents licensed, etc. rose sharply in FY2017.

◆ Kyushu University ◆

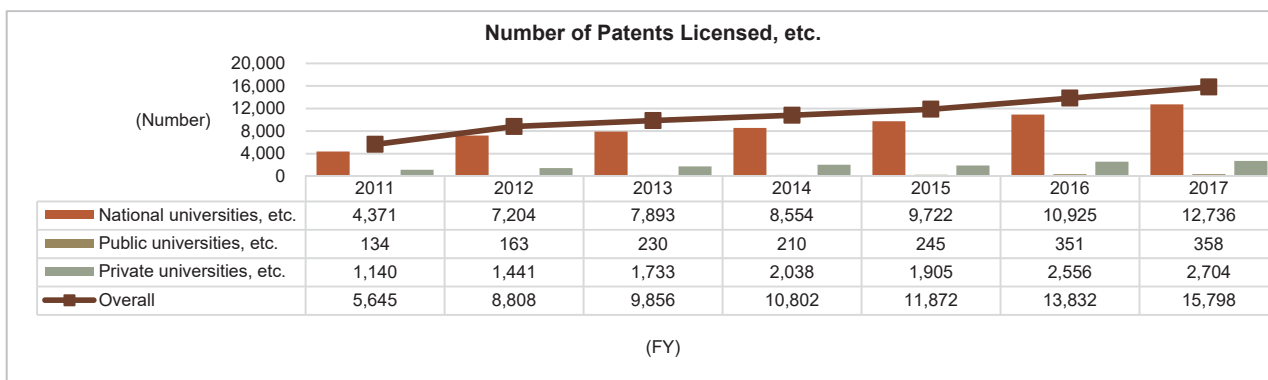
Number of Patents Licensed ,etc. (including Overseas)



Rank	University	Number
1	The University of Tokyo	3,523
2	Kyoto University	1,356
3	Kanto Gakuin University	1,127
4	Osaka University	806
5	Tokyo Institute of Technology	721
6	Hokkaido University	642
7	Tohoku University	566
8	Nagoya University	535
9	Kyushu University	524
10	Shinshu University	350

(2017)

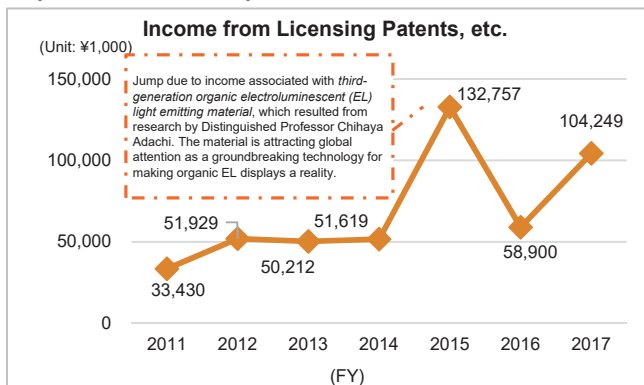
◆ Nationwide ◆



◆ Kyushu University ◆

Income from Licensing Patents, etc. (including Overseas)

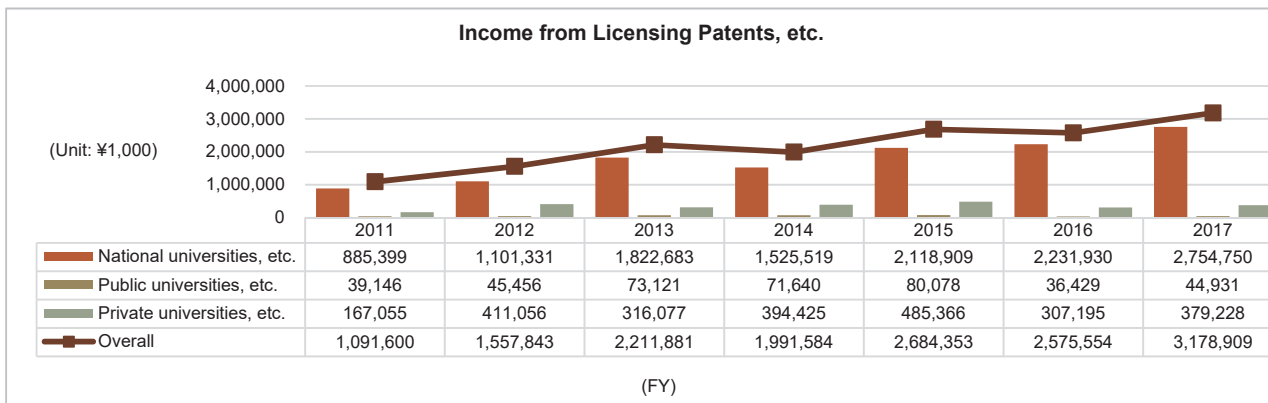
(Unit: ¥1,000)



Rank	University	Income
1	The University of Tokyo	805,006
2	Kyoto University	640,281
3	Tokyo Institute of Technology	275,548
4	Tohoku University	124,825
5	Kyushu University	104,249
6	Nihon University	98,505
7	Osaka University	94,278
8	Nagoya University	72,228
9	Tottori University	62,580
10	Keio University	52,300

(2017)

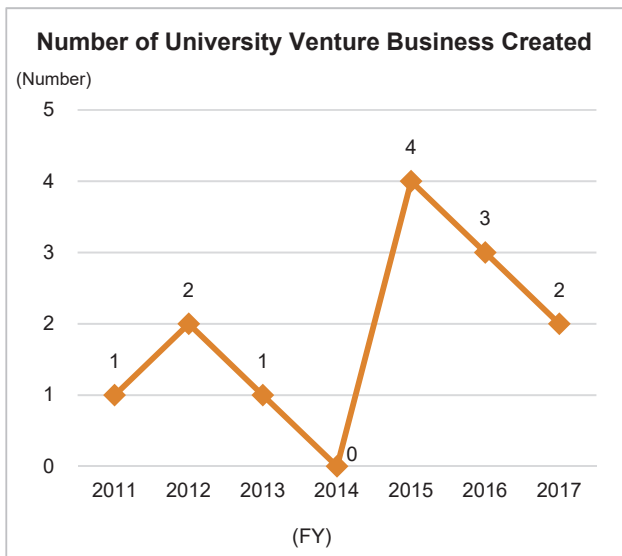
◆ Nationwide ◆



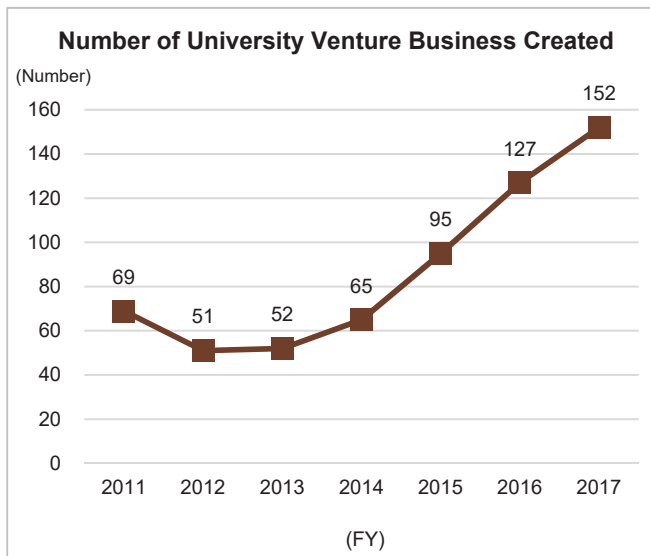
*In this survey, "number of patents licensed,etc." and "amount of income from licensing patents,etc." refers to the number of patent rights licensed or assigned (including at the "right to obtain a patent" stage) and the amount of income received as a result.

*Source: MEXT, *Industry-Academia Collaboration in Higher Education Institutions Joint Collaborative Research Outputs by Institution*, figures for each fiscal year.

◆ Kyushu University ◆



◆ Nationwide ◆



*Source: Kyushu University: *Kyushu University Research Strategy Data Collection 2019*
 Nationwide: MEXT, *Industry-Academia Collaboration in Higher Education Institutions Joint Collaborative Research Outputs by Institution*, figures for each fiscal year.

◆ Comparisons with Other Universities ◆

Number of Patents Generating Running Royalty Income

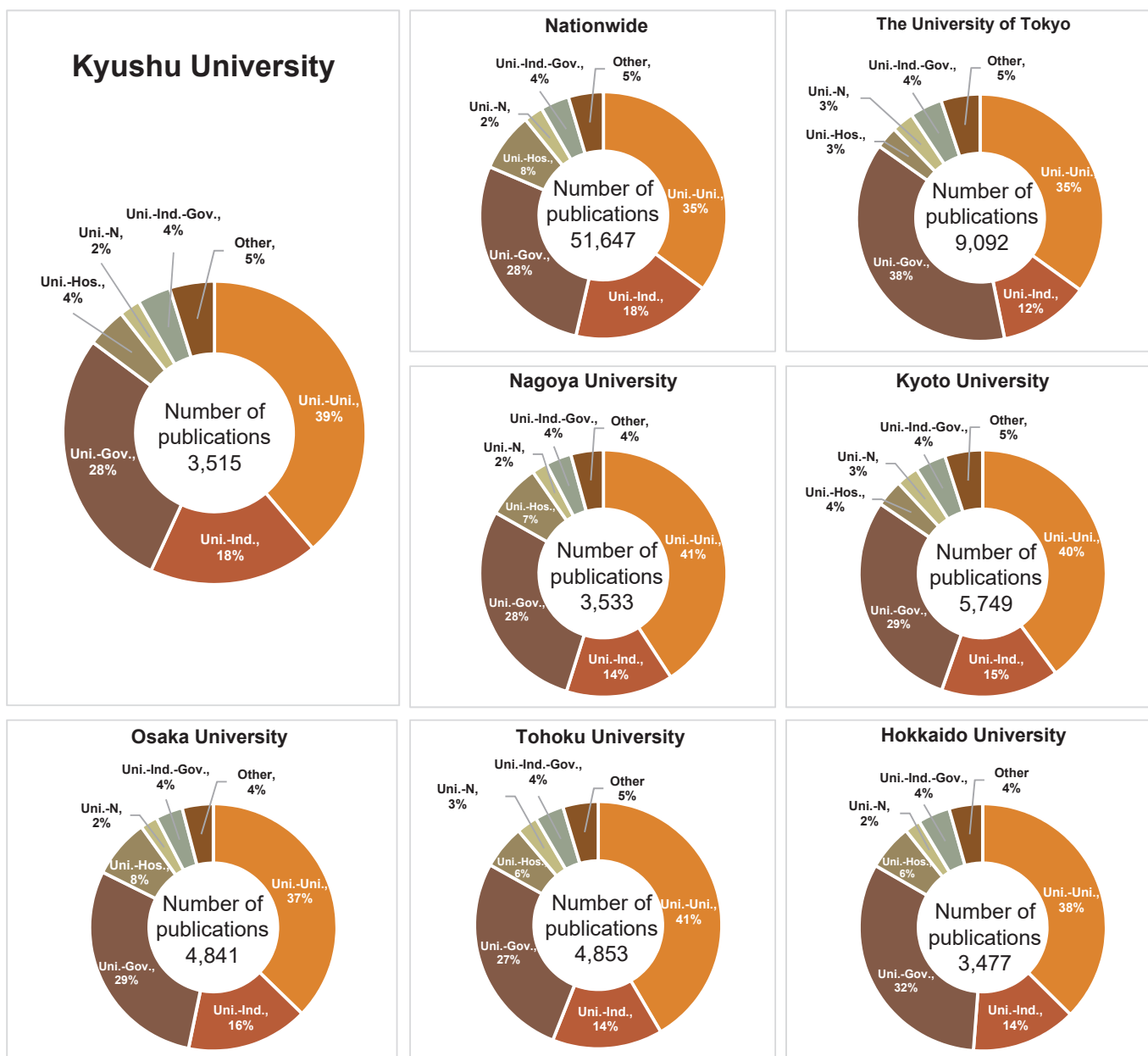
Rank	University	Number
1	Kyushu University	244
2	The University of Tokyo	186
3	Hiroshima University	159
4	Tohoku University	156
5	Tokyo Institute of Technology	153
6	Kanazawa University	134
7	Shizuoka University	124
8	Osaka University	99
9	Kyoto University	98
10	Kobe University	86

(2017)

*Source: MEXT, *Industry and Public Organizations in Higher Education Institutions in FY2017*

11-4. Industry-University-Government Collaboration Viewed through Co-authorship Relationships

Comparing the co-authorship rates of Kyushu University with other universities, while Kyushu University is about the same as the national average, the number of publications is fewer than other universities.



The six institution categories used in the graph are as follows.

Institution category	Institutions involved
Uni.	Universities*, inter-university research institutes, and national colleges of technology
Ind.	Industry: private organizations
Gov.	National organizations, semi government corporations and independent administrative corporations, and local public entities
Hos.	Hospital, medical institutions
N.	Nonprofit organizations
Other	Organizations other than those listed above

*Based on a database of conference records and proceedings compiled by JST.

*Uses data extracted by selecting all fields and selecting following universities, Hokkaido University, Tohoku University, The University of Tokyo, Nagoya University, Kyoto University, Osaka University and Kyushu University.

* Include university hospitals and junior colleges

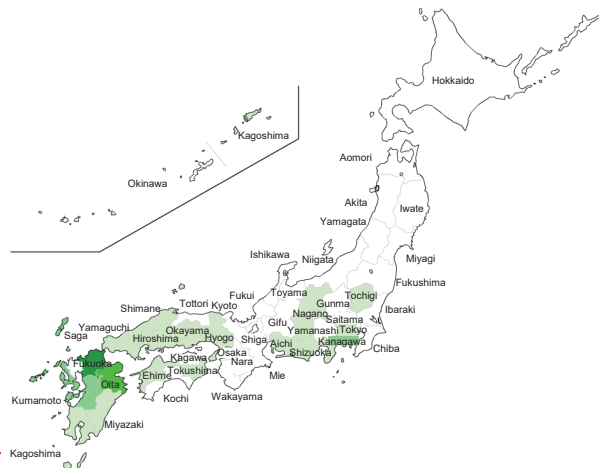
*Source: Japan Science and Technology Agency (JST), *Japan Information Platform for Science and Technology Innovation, Patterns of Industry-University-Government Collaboration as Seen Through Co-authorship Relationships (2011)*

11-5. Number of Publications Co-authored with Local Public Entities

The maps of Japan below show the extent of collaboration between Kyushu University and local public entities such as public experimental research institutes, focusing on co-authorship relationships. Tallying the Number of publications co-authored with local government organizations by prefecture shows the extent to which the university is collaborating with "regional hubs". Over the ten-year period examined, the number of co-authored publications has almost doubled from 90 to 170, while the number of prefectures with which those publications were co-authored has grown from 19 to 31, demonstrating that collaboration with local governments is progressing smoothly.

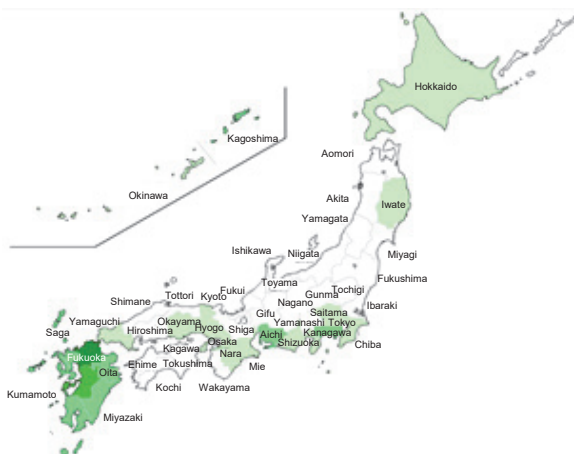
2001

Rank	Prefecture	Number of publications	Percentage
1	Fukuoka Prefecture	57	63.3%
2	Oita Prefecture	7	7.8%
3	Kanagawa Prefecture	4	4.4%
4	Nagasaki Prefecture	3	3.3%
4	Kumamoto Prefecture	3	3.3%
6	Shimane Prefecture	2	2.2%
6	Kagoshima Prefecture	2	2.2%
Other	12 prefectures	12	13.4%
Kyushu University total		90	
(Total number of publications)		4,479	



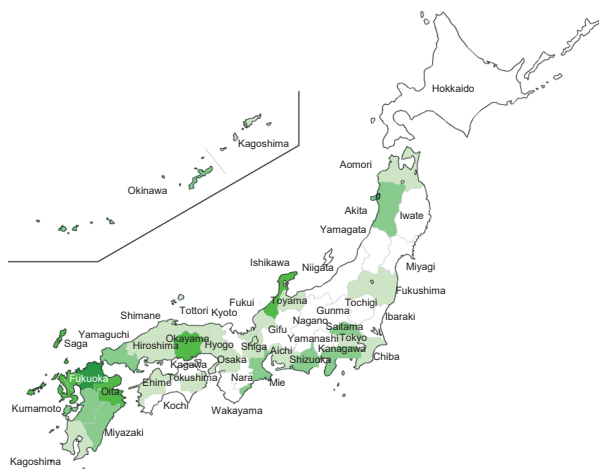
2006

Rank	Prefecture	Number of publications	Percentage
1	Fukuoka Prefecture	78	59.5%
2	Kumamoto Prefecture	7	5.3%
3	Aichi Prefecture	5	3.8%
3	Miyazaki Prefecture	5	3.8%
5	Nagasaki Prefecture	4	3.1%
6	Kanagawa Prefecture	3	2.3%
6	Saga Prefecture	3	2.3%
6	Oita Prefecture	3	2.3%
6	Kagoshima Prefecture	3	2.3%
Other	13 prefectures	20	15.3%
Kyushu University total		131	
(Total number of publications)		8,133	



2011

Rank	Prefecture	Number of publications	Percentage
1	Fukuoka Prefecture	63	37.1%
2	Saga Prefecture	14	8.2%
3	Oita Prefecture	10	5.9%
4	Nagasaki Prefecture	9	5.3%
5	Ishikawa Prefecture	7	4.1%
5	Okayama Prefecture	7	4.1%
7	Miyazaki Prefecture	5	2.9%
8	Akita Prefecture	4	2.4%
8	Saitama Prefecture	4	2.4%
8	Shizuoka Prefecture	4	2.4%
8	Yamaguchi Prefecture	4	2.4%
8	Kumamoto Prefecture	4	2.4%
8	Okinawa Prefecture	4	2.4%
Other	18 prefectures	31	18.3%
Kyushu University total		170	
(Total number of publications)		8,285	



*Source: Japan Science and Technology Agency (JST), *Japan Information Platform for Science and Technology Innovation: Collaboration with Regions (Co-authorship Relationships in Each Prefecture) and Collaboration with Regions (Number of publications)*