Case Study

# Evaluation of Japanese universities' research activity based on the number of awards of Grants-in-Aid for Scientific Research from 1998 to 2002 and in 2003

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**ABSTRACT**

**The system of Grants-in-Aid for Scientific Research from the Ministry of Education, Culture, Sports, Science and Technology (MEXT) is one of the oldest funding systems for researchers belonging to universities and institutes in Japan. The fund is allotted to researchers by peer review of their applications for research projects. The total number of subjects of Grants-in-Aid for Scientific Research allotted to the individual research fields from fiscal years (FY) 1998 to 2002 were tallied for each university and institute. The purpose of this report is to rank funded subjects as an index of the research activities of each university and institute. Furthermore, using the database for FY 2003, for which the ministry undertook a large revision to the classification of academic fields, we show the relationship between the situations before and after the classification changes. We indicate whether the last revision has caused significant shifts in the allocation of funds. This paper contains information abstracted from six series of NII Technical Reports from FY 1998 to 2002 and five series for FY 2003.**

**KEYWORDS**

Japanese university, ranking, evaluation, Grants-in-Aid for Scientific Research

## 1 Outline of Grants-in-Aid for Scienti?c Research

### 1.1 History and budget growth

The system of Grants-in-Aid for Scientific Research from the Ministry of Education, Culture, Sports, Science and Technology (MEXT) is one of the oldest funding systems for researchers belonging to universities and institutes in Japan. The fund is allotted to individual researchers by peer review of their applications for research projects.

The origin of the Grants-in-Aid for Scientific Research subsidy goes back to 1918. Successive budget increases led to it funds exceeding 1 billion yen in fiscal year (FY) 1955, even after the negative influence of the Second World War was accounted for. In FY 1965, the three related budgets were combined into the present day "Grants-in-Aid for Scientific Research". The two-step examination began in FY 1968. According to both the report of the Science Council in 1992 and the science and technological Basic Law of 1995, the budget exceeded 100 billion yen in FY 1996. Table 1 lists budgets and their growth rate from FY 1985 to 2005. [1]

### 1.2 System improvement

The system of Grants-in-Aid for Scientific Research (Grants-in-Aid) must continuously improve if it is to meet the needs of society and strengthen the research base of our country. The Council for Science and Tech-

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Table 1 Budget and growth rate from 1985 to 2005 FY [1].

| Fiscal Year | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Budget (billions of Yen) | 42.0 | 43.5 | 45.1 | 48.9 | 52.6 | 55.8 | 58.9 | 64.6 | 73.6 | 82.4 | 92.4 | 101.8 | 112.2 | 117.9 | 131.4 | 141.9 | 158.0 | 170.3 | 176.5 | 183.0 | 188.0 |
| Rate of Increase (%) | 3.7 | 3.6 | 3.6 | 8.4 | 7.6 | 6.1 | 5.6 | 9.7 | 13.9 | 12.0 | 12.1 | 10.2 | 10.2 | 5.1 | 11.5 | 8.0 | 11.3 | 7.8 | 3.6 | 3.7 | 2.7 |

Table 2 Changes to the system of Grants-in-Aid after FY 1994.

| *Year* | *System changes* |
|---|---|
| FY1994: | (1) New Scientific Research ((A) (B) (C))* categories were established, and the former Developmental Scientific Research, Scientific Research (A) and Scientific Research (B)(C) categories were integrated. |
| | (2) Exploratory Research was established as a research category. |
| FY1998: | The system for Scientific Research in Priority Areas (A) and (B) were improved. |
| FY1999: | The International Scientific Research category was integrated into the Scientific Research category. |
| FY2000: | The Scientific Research in Priority Areas (C) category was established for effective promotion for area as bioscience. |
| FY2001: | (1) Scientific Research (S) category was established. |
| | (2) Creative Scientific Research category was established as substitutes for the Grant-in-Aid for New Program. |
| FY2002: | (1) Scientific Research in Priority Areas (A) (B) (C) categories were integrated into the Scientific Research in Priority Areas category. |
| | (2) The Grant-in-Aid for Young Scientists (A) and (B) categories were established as substitutes for the Encouragement of Young Scientists (A) category. |
| | (3) Specially Promoted Research (COE) category was established. |
| FY2003: | A major change was made to the field classfication for the application. |

* A, B, C, etc. as per Table 3(a)

nology of MEXT has attempted to revise the Grants-in-Aid system. Table 2 shows the changes that were made after FY 1994.

In FY 1999, some functions of the Grants-in-Aid program were transferred from former Monbusho (now MEXT) to the Japan Society for the Promotion of Science (JSPS). Tables 3 (a) and (b) list the research categories and their descriptions for FY 2004. The history and changes to the Grants-in-Aid system are detailed in the commentary of the Grants-in-Aid for Scientific Research. [2]

## 2 Research activity based on Grants-in-Aid

The number of Grants-in-Aid awards can be thought to be equivalent to the number of Research Active Staff (RAS) of a British university, because academic researchers individually apply for Grants-in-Aid without mentioning their organizations. Therefore, we consider a Japanese university in which a large number of researchers are awarded Grants-in-Aid to be an organization that has many active researchers, in the same sense as "RAS". The number of grant-holding researchers by field can be thought of as showing the degree of research activity in a particular field in that university.

A similar subsidy system to the one described above was established with the Grants-in-Aid in 1968. The field classification under which the researchers apply for awards has been continuously revised in accordance with the trends of the various research fields. Notably though, the classification for the Grants-in-Aid application has changed a great deal since FY 2003, in response to the reply of the Council for Science and Technology of MEXT. [4] Therefore, it seems to be important to compare data before the change in the system (FY 1998—2002) and data after the change (FY 2003) in order to check the effectiveness of the current Grants-in-Aid system.

### 2.1 Databases of Grants-in-Aid for Scientific Research

The official handbook [1] published each October by MEXT describes research subjects, budgets, etc., of Grants-in-Aid recipients. The National Institute of Informatics (NII) provides the "KAKEN" database (a service for disclosing the deliverables of grants-in-aid for scientific research) [5] as part of its "GiNii" platform.

We analyzed KAKEN database entries from FY 1998 to FY 2002 and in FY 2003.

We paid attention to the two points below when we looked at the number of subjects as a measure of research activity at a university.

(1) The applicant of the research subject is an individual or representative of a research group. The researchers do not have to be in the research organization that the research representative belongs to.

(2) There is a tendency for a researcher who belongs to

Table 3

(a) Research categories and descriptions of Grants-in-Aid allocated by JSPS in FY 2004 Reprint from the JSPS web page [3].

Allocated to JSPS

| Categories | | | Description |
|---|---|---|---|
| Scientific Research | | | Aid for Research |
| | Scientific Research | (S) | Creative and leading-edge research conducted by university researchers individually or in small groups<br>Duration: 5 years<br>Grant: 50-100 million yen per project |
| | | (A)<br>(B)<br>(C) | Creative research conducted by university researchers individually or in groups<br>Duration: 2 to 4 years, or 1 year for research planning<br>Category A: 20-50 million yen per project<br>Category B: 5-20 million yen per project<br>Category C: Up to 5 million yen per project |
| | Encouragement of Scientists | | Research carried out by individual pre-school, elementary, secondary school or teachers or by an individual citizen<br>Duration: 1 year<br>Grant: Up to 0.3 million yen per project |
| Publication of Scientific Research Results | | | |
| | Scientific Periodicals | | Publication of academic journals periodically by academic societies or groups of cooperating academic societies to promote international exchange |
| | Scientific Literature | | Publication of academic books to disseminate research results by individuals or groups of researchers |
| | Databases | | Compilation of databases by individuals or groups of researchers that have already proved practical and have the purpose of openly disseminating information through academic information systems, etc. |
| Creative Scientific Research | | | Aimed at the further cultivation of fruits obtained from highly creative research conducted under the Grants-in-Aid for Scientific Research and other funding programs<br>Duration: 5 years |

(b) Research categories and descriptions of Grants-in-Aid allocated by MEXT in FY 2004 [3].

Allocated to Monbu Kagakusho

| Categories | | | Description |
|---|---|---|---|
| Scientific Research | | | Aid for Research |
| | Specially Promoted Research | | Highly regarded research likely to bring outstanding results<br>Duration: 3-5 years |
| | Scientific Research in Priority Areas | | Specific areas that can elevate research in basic fields of science or that can contribute to the development of Japan's economy and society<br>Duration: 3-6 years<br>Grant: approx. 20-600 million yen yearly per area |
| | Exploratory Research (*) | | Uniquely original research using unexpectedly surprising ideas in an early stage of development<br>Duration: Up to 3 years<br>Grant: Up to 5 million yen per project |
| | Grant-in-Aid for Young Scientists | | Research carried out by individual researchers of up to age 37<br>Duration: 2-3 years |
| | (*) | (A)<br>(B) | Category A: 5-30 million yen per project<br>Category B: Up to 5 million yen per project |
| | Grant-in-Aid for Special Purposes | | Support for urgent or important research projects |
| Publication of Scientific Research Results | | | |
| | Announcement of Publication of Scientific Research Results | | Publication of research results with high academic evaluation and highly valuable academic information |
| Specially Designated Research Promotion | | | Support for research of a strong academic or societal character conducted by designated private research institutes |
| Grant-in-Aid for JSPS Fellows (*) | | | Support for research conducted by JSPS fellows (including foreign fellows)<br>Duration: Up to 3 years |

(*) Recruited and selected by JSPS

a large organization, especially a large university to become a research representative because the Grants-in-Aid application needs extensive accounting, documentation, preparations, etc.

## 2.2 Situation from FY 1998 through 2002

### 2.2.1 Outline of general analysis

Grants-in-Aid for Scientific Research no doubt supported the basic research of universities in postwar.

The budget began to be distributed preponderantly as a competitive research fund to promote science and technology with priority on graduate schools in 1991. Table 1 shows the Grants-in-Aid yearly budget and its rate of change. Although the budget has increased, the rate seems to have slowed since FY 2003. The top class of the classification table for the applications of Grants-in-Aid (Scientific Research (S), (A), (B), (C), Grants-in-Aid for Exploratory Research, and Grants-in-Aid for Young Scientists (A), (B)) consist of the seven traditional fields of literature (classified as Arts/Humanities in this section), law, economics, science, engineering, agriculture and medicine and Interdisciplinary studies and General studies. Table 4 shows the number of research subjects, and corresponding budget allotments from FY 1988 to FY 2002 by grant type and by research area. Fig. 1 shows the percentage of grants based on the number of awards as broken down by research area from FY 1998 to FY 2002. This figure shows that the field of medicine accounts for the largest part of the fund.

## Table 4 Number of Grants and their budgets by grants type and research area (FY 1998—2002).

| 1998(H10) | | | | 1999(H11) | | | | 2000(H12) | | | | 2001(H13) | | | | 2002(H14) | | | | (Note) Budget (thousand of Yen) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | # of Grants | Budget allotment | | | # of Grants | Budget allotment | | | # of Grants | Budget allotment | | | # of Grants | Budget allotment | | | # of Grants *5 | Budget allotment *6 | |
| | | | | | | | | | | | | Grant-in-Aid for Scientific Research (S)new | Law | 0 | 0 | Grant-in-Aid for Scientific Research (S) | Law | 1 | 16,900 | *1: includes some missing data (e.g. item number) |
| | | | | | | | | | | | | | Economics | 1 | 18,000 | | Economics | 2 | 41,210 | |
| | | | | | | | | | | | | | Arts/Humanities | 1 | 21,700 | | Arts/Humanities | 5 | 139,490 | |
| | | | | | | | | | | | | | Science | 11 | 347,300 | | Science | 26 | 950,690 | *2: excludes three error data (item numbers not otherwise specified) |
| | | | | | | | | | | | | | Engineering | 14 | 416,000 | | Engineering | 39 | 1,253,070 | |
| | | | | | | | | | | | | | Agriculture | 6 | 148,800 | | Agriculture | 11 | 391,040 | |
| | | | | | | | | | | | | | Medicine | 17 | 479,800 | | Medicine | 28 | 757,900 | |
| | | | | | | | | | | | | | Interdisciprinary | 11 | 287,100 | | Interdisciprinary | 23 | 705,640 | *3: excludes two error data (item numbers not otherwise specified) |
| Grant-in-Aid for Scientific Research (A) | Law | 8 | 49,600 | Grant-in-Aid for Scientific Research (A) | Law | 32 | 212,670 | Grant-in-Aid for Scientific Research (A) | Law | 29 | 192,000 | Grant-in-Aid for Scientific Research (A) | Law | 27 | 173,900 | Grant-in-Aid for Scientific Research (A) | Law | 26 | 263,900 | |
| | Economics | 13 | 48,800 | | Economics | 23 | 146,700 | | Economics | 26 | 194,200 | | Economics | 29 | 265,800 | | Economics | 37 | 438,620 | |
| | Arts/Humanities | 108 | 582,900 | | Arts/Humanities | 217 | 1,415,700 | | Arts/Humanities | 178 | 1,129,600 | | Arts/Humanities | 131 | 988,000 | | Arts/Humanities | 154 | 1,721,380 | |
| | Science | 263 | 2,332,300 | | Science | 348 | 3,036,000 | | Science | 284 | 2,555,700 | | Science | 248 | 2,446,400 | | Science | 245 | 3,620,110 | |
| | Engineering | 378 | 3,338,800 | | Engineering | 341 | 3,550,600 | | Engineering | 342 | 3,442,500 | | Engineering | 327 | 3,507,100 | | Engineering | 361 | 5,634,330 | *4: The International science research is shifted to Grant-in-Aid for Scientific Research |
| | Agriculture | 132 | 1,002,400 | | Agriculture | 144 | 1,227,600 | | Agriculture | 130 | 1,094,200 | | Agriculture | 120 | 1,119,500 | | Agriculture | 122 | 1,759,810 | |
| | Medicine | 304 | 2,490,900 | | Medicine | 295 | 2,819,600 | | Medicine | 270 | 2,625,500 | | Medicine | 251 | 2,786,700 | | Medicine | 272 | 4,285,970 | |
| | Interdisciprinary | 221 | 1,635,800 | | Interdisciprinary | 230 | 1,987,380 | | Interdisciprinary | 225 | 2,008,300 | | Interdisciprinary | 213 | 2,164,500 | | Interdisciprinary | 251 | 3,480,880 | |
| | General | 54 | 390,200 | | General | 79 | 700,500 | | General | 53 | 491,800 | | General | 51 | 502,700 | | General | 58 | 778,180 | *5: includes additional cases at the end of fiscal year |
| Grant-in-Aid for Scientific Research (B) | Law | 44 | 117,100 | Grant-in-Aid for Scientific Research (B) | Law | 65 | 189,600 | Grant-in-Aid for Scientific Research (B) | Law | 78 | 254,700 | Grant-in-Aid for Scientific Research (B) | Law | 82 | 272,100 | Grant-in-Aid for Scientific Research (B) | Law | 91 | 318,200 | *6: includes Indirect expenditure |
| | Economics | 78 | 210,600 | | Economics | 123 | 324,200 | | Economics | 128 | 363,000 | | Economics | 132 | 419,600 | | Economics | 153 | 502,100 | |
| | Arts/Humanities | 337 | 818,800 | | Arts/Humanities | 477 | 1,327,600 | | Arts/Humanities | 509 | 1,576,100 | | Arts/Humanities | 545 | 1,873,500 | | Arts/Humanities | 649 | 2,197,500 | |
| | Science | 699 | 2,856,600 | | Science | 937 | 3,653,800 | | Science | 895 | 3,647,400 | | Science | 852 | 3,692,200 | | Science | 883 | 3,781,500 | |
| | Engineering | 1,549 | 6,593,800 | | Engineering | 1,874 | 7,851,100 | | Engineering | 1,864 | 7,932,800 | | Engineering | 1,842 | 8,177,200 | | Engineering | 1,688 | 7,399,000 | |
| | Agriculture | 513 | 2,070,100 | | Agriculture | 661 | 2,630,600 | | Agriculture | 690 | 2,714,500 | | Agriculture | 659 | 2,808,300 | | Agriculture | 653 | 2,939,300 | |
| | Medicine | 1,685 | 6,813,900 | | Medicine | 2,040 | 8,433,300 | | Medicine | 2,080 | 9,043,900 | | Medicine | 2,054 | 9,258,500 | | Medicine | 2,154 | 9,844,300 | |
| | Interdisciprinary | 840 | 3,214,600 | | Interdisciprinary | 1,174 | 4,377,500 | | Interdisciprinary | 1,165 | 4,551,300 | | Interdisciprinary | 1,160 | 4,926,100 | | Interdisciprinary | 1,203 | 5,082,400 | |
| | General | 125 | 460,600 | | General | 161 | 586,700 | | General | 147 | 572,900 | | General | 128 | 525,500 | | General | 141 | 563,200 | |
| Grant-in-Aid for Scientific Research (C) | Law | 179 | 164,000 | Grant-in-Aid for Scientific Research (C) | Law | 202 | 202,400 | Grant-in-Aid for Scientific Research (C) | Law | 229 | 241,900 | Grant-in-Aid for Scientific Research (C) | Law | 250 | 265,200 | Grant-in-Aid for Scientific Research (C) | Law | 286 | 287,200 | |
| | Economics | 316 | 279,200 | | Economics | 338 | 337,600 | | Economics | 392 | 393,000 | | Economics | 409 | 403,900 | | Economics | 445 | 443,900 | |
| | Arts/Humanities | 1,240 | 1,123,700 | | Arts/Humanities | 1,407 | 1,380,000 | | Arts/Humanities | 1,509 | 1,484,100 | | Arts/Humanities | 1,643 | 1,660,800 | | Arts/Humanities | 1,801 | 1,802,400 | |
| | Science | 1,608 | 1,928,300 | | Science | 1,630 | 2,045,100 | | Science | 1,677 | 2,156,600 | | Science | 1,633 | 2,124,400 | | Science | 1,703 | 2,112,800 | |
| | Engineering | 2,021 | 2,729,800 | | Engineering | 2,104 | 3,018,500 | | Engineering | 2,113 | 2,974,200 | | Engineering | 2,128 | 3,049,000 | | Engineering | 2,143 | 2,968,700 | |
| | Agriculture | 719 | 963,700 | | Agriculture | 758 | 1,050,300 | | Agriculture | 741 | 1,006,400 | | Agriculture | 755 | 1,036,700 | | Agriculture | 765 | 1,025,100 | |
| | Medicine | 4,974 | 6,098,900 | | Medicine | 5,160 | 6,888,700 | | Medicine | 5,325 | 7,372,600 | | Medicine | 5,391 | 7,362,400 | | Medicine | 5,600 | 7,765,200 | |
| | Interdisciprinary | 1,802 | 2,190,700 | | Interdisciprinary | 1,934 | 2,447,100 | | Interdisciprinary | 2,027 | 2,622,800 | | Interdisciprinary | 2,088 | 2,771,400 | | Interdisciprinary | 2,171 | 2,803,600 | |
| | General | 339 | 453,000 | | Period*1 | 417 | 596,600 | | Period*1 | 422 | 615,400 | | Period*1 | 341 | 431,900 | | Period*1 | 258 | 340,600 | |
| Grant-in-Aid for Exploratory Research | Law | 24 | 16,700 | Grant-in-Aid for Exploratory Research | Law | 26 | 18,700 | Grant-in-Aid for Exploratory Research | Law | 22 | 17,100 | Grant-in-Aid for Exploratory Research | Law | 21 | 15,600 | Grant-in-Aid for Exploratory Research | Law | 26 | 21,600 | |
| | Economics | 37 | 27,600 | | Economics | 35 | 27,500 | | Economics | 34 | 26,400 | | Economics | 35 | 27,200 | | Economics | 39 | 37,600 | |
| | Arts/Humanities | 158 | 119,350 | | Arts/Humanities | 161 | 120,400 | | Arts/Humanities | 152 | 112,900 | | Arts/Humanities | 159 | 119,500 | | Arts/Humanities | 194 | 185,300 | |
| | Science | 258 | 249,500 | | Science | 237 | 231,100 | | Science | 228 | 233,100 | | Science | 237 | 233,500 | | Science | 300 | 409,300 | |
| | Engineering | 366 | 404,000 | | Engineering | 347 | 398,500 | | Engineering | 360 | 383,400 | | Engineering | 370 | 401,400 | | Engineering | 559 | 908,200 | |
| | Agriculture | 142 | 141,500 | | Agriculture | 142 | 144,200 | | Agriculture | 133 | 142,600 | | Agriculture | 140 | 150,200 | | Agriculture | 204 | 316,400 | |
| | Medicine | 736 | 733,600 | | Medicine | 716 | 745,300 | | Medicine | 737 | 756,700 | | Medicine | 761 | 795,400 | | Medicine | 1,038 | 1,480,300 | |
| | Interdisciprinary | 333 | 307,100 | | Interdisciprinary | 317 | 314,300 | | Interdisciprinary | 326 | 327,100 | | Interdisciprinary | 358 | 356,600 | | Interdisciprinary | 499 | 686,900 | |
| Grant-in-Aid for Encouragement of Scientists(A) | Law | 124 | 105,400 | Grant-in-Aid for Encouragement of Scientists(A) | Law | 114 | 100,900 | Grant-in-Aid for Encouragement of Scientists(A) | Law | 123 | 118,700 | Grant-in-Aid for Encouragement of Scientists(A) | Law | 140 | 132,300 | Grant-in-Aid for Young Scientists (A)new | Law | 1 | 2,730 | |
| | Economics | 176 | 144,300 | | Economics | 153 | 141,000 | | Economics | 180 | 165,800 | | Economics | 215 | 195,300 | | Economics | 3 | 9,100 | |
| | Arts/Humanities | 633 | 544,800 | | Arts/Humanities | 545 | 511,700 | | Arts/Humanities | 567 | 528,500 | | Arts/Humanities | 596 | 559,170 | | Arts/Humanities | 9 | 49,010 | |
| | Science | 1,022 | 935,600 | | Science | 844 | 875,500 | | Science | 911 | 954,000 | | Science | 942 | 971,300 | | Science | 33 | 459,550 | |
| | Engineering | 1,645 | 1,577,800 | | Engineering | 1,396 | 1,496,500 | | Engineering | 1,565 | 1,645,200 | | Engineering | 1,629 | 1,701,900 | | Engineering | 63 | 850,200 | |
| | Agriculture | 485 | 459,000 | | Agriculture | 402 | 425,000 | | Agriculture | 444 | 462,700 | | Agriculture | 453 | 476,500 | | Agriculture | 13 | 156,780 | |
| | Medicine | 3,313 | 2,859,100 | | Medicine | 2,750 | 2,694,000 | | Medicine | 2,923 | 2,936,300 | | Medicine | 2,914 | 2,926,520 | | Medicine | 44 | 491,010 | |
| | Interdisciprinary | 1,317 | 1,182,470 | | Interdisciprinary | 1,130 | 1,145,600 | | Interdisciprinary | 1,244 | 1,269,100 | | Interdisciprinary | 1,305 | 1,334,900 | | Interdisciprinary | 40 | 451,490 | |
| | | | | | | | | | | | | | | | | Grant-in-Aid for Young Scientists(B) | Law | 163 | 173,000 | |
| | | | | | | | | | | | | | | | | | Economics | 249 | 256,300 | |
| | | | | | | | | | | | | | | | | | Arts/Humanities | 700 | 706,200 | |
| | | | | | | | | | | | | | | | | | Science | 959 | 1,176,200 | |
| | | | | | | | | | | | | | | | | | Engineering | 1,560 | 2,011,400 | |
| | | | | | | | | | | | | | | | | | Agriculture | 453 | 584,200 | |
| | | | | | | | | | | | | | | | | | Medicine | 2,862 | 3,506,700 | |
| | | | | | | | | | | | | | | | | | Interdisciprinary | 1,339 | 1,634,600 | |
| Grant-in-Aid for JSPS Fellows | Total | 4,237 | 4,058,000 | Grant-in-Aid for JSPS Fellows*2 | Total | 4,479 | 4,266,030 | Grant-in-Aid for JSPS Fellows*3 | Total | 4,533 | 4,428,800 | Grant-in-Aid for JSPS Fellows | Total | 4,701 | 4,679,400 | Grant-in-Aid for JSPS Fellows | Total | 4,568 | 4,714,400 | |
| Total | | 35,555 | 64,824,920 | Total | | 36,965 | 76,093,680 | Total | | 38,010 | 77,765,800 | Total | | 38,526 | 81,808,690 | Total | | 40,366 | 99,694,590 | |

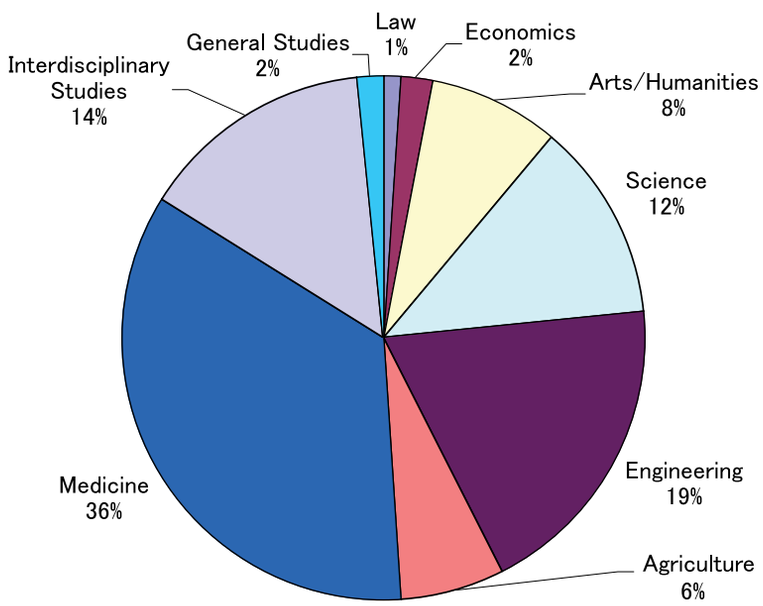


Fig. 1 Percentage of grants broken down by research area(FY 1998—2002).

### 2.2.2 Analysis of individual research areas, JSPS fellows and large-scale and huge research projects

Next, we show the results of individually analyzing six composite domains of (1) law, economics, arts and humanities and education, (2) science, engineering and agriculture, (3) medical science, dentistry, pharmacy and nursing, (4) interdisciplinary studies, (5) Grants-in-Aid for JSPS Fellows and (6) Large-scale Project Funds. The tables and figures of the analysis show that national and large private universities play the most important role, but some smaller universities also take large.

Although the details can't be discussed for reason of space, the reader can see that the number of Grants-in-Aid awarded per field reflects the degree of research activity in the fields that the university especially focuses on. The detailed breakdowns are available in the technical report of the National Institute of Informatics (NII). [6]–[16]

The research field classification table that includes the top and second level research areas for application in FY 2002 is shown in Appendix 1.

(1) Law, Economics, Arts/Humanities, and Education

Table 5 shows the top 50 organizations that grant-holding researchers belong to. The first columns of the table show breakdowns for the area composed of law, economics, arts/humanities. The other columns list data individually for law, economics, arts/humanities, and the area composed of psychology, sociology, education, and cultural anthropology subfields belonging to arts/humanities classification. The last area is selected in order to measure an activity of faculty of education in the Japanese universities. On the whole, the table shows that the large national universities (the former imperial universities under the old system of higher education) are generally ranked higher in every field, but certain private universities are also well represented. The research characteristics of universities and institutes are clearly revealed in the categories of law, economics, arts/humanities, and education. Figs. 2 and 3 show the budget and the percentages of number of subjects included in arts/humanities and social sciences (law and economics).

(2) Science, Engineering and Agriculture

Science and engineering in Japan have been extensively supported by this system, and the importance of the system to these areas is increasing. This report clarifies the roles of individual universities in each research field of science, engineering, and agriculture.

Table 6 shows the top 50 organizations that grant-holding researchers belong to. The table lists totals for science, engineering, and agriculture, as well as science and engineering together.

On the whole, the large national universities that were imperial universities under the old system of higher education are generally ranked higher in every field, but some private universities are well represented. The research characteristics of universities and institutes are clearly revealed in the science, engineering,

Table 5 Top 50 organizations receiving grants for research in law, economics, arts/humanities and education related area (psychology/ sociology/ education/ cultural anthropology) (in thousands of yen).

| Law・Economics・Arts/Humanities: Total of 5years | | | | | Law: Total of 5 years | | | | | Economics: Total of 5 years | | | | | Arts/Humanity: Total of 5 years | | | | | Psychology/Sociology/Education/cultural anthropology (Classified as the Arts/Humanities): Total of 5 years | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ranking | classification | Uni. Name | # of Projects | Amount of funding | Ranking | Classification | Uni. Name | # of Projects | Amount of funding | Ranking | Classification | Uni. Name | # of Projects | Amount of funding | Ranking | Classification | Uni. Name | # of Projects | Amount of funding | Ranking | Classification | Uni. Name | # of Projects | Amount of funding |
| 1 | N | The Univ. of Tokyo | 1,165 | 2,677,870 | 1 | N | The Univ. of Tokyo | 271 | 507,750 | 1 | N | Kobe Univ. | 201 | 405,870 | 1 | N | The Univ. of Tokyo | 762 | 1,922,390 | 1 | N | Kyoto Univ. | 230 | 634,330 |
| 2 | N | Kyoto Univ. | 725 | 1,576,680 | 2 | N | Hokkaido Univ. | 157 | 342,030 | 2 | N | Hitotsubashi Univ. | 182 | 341,650 | 2 | N | Kyoto Univ. | 542 | 1,246,180 | 2 | N | Hiroshima Univ. | 227 | 446,590 |
| 3 | N | Hokkaido Univ. | 618 | 1,236,070 | 3 | N | Kobe Univ. | 128 | 205,380 | 3 | N | Osaka Univ. | 147 | 324,900 | 3 | N | Hiroshima Univ. | 461 | 787,020 | 3 | N | The Univ. of Tokyo | 217 | 588,060 |
| 4 | N | Hiroshima Univ. | 582 | 937,410 | 4 | N | Kyushu Univ. | 126 | 233,900 | 4 | N | The Univ. of Tokyo | 132 | 247,730 | 4 | N | Univ. of Tsukuba | 366 | 711,370 | 4 | N | Univ. of Tsukuba | 212 | 449,770 |
| 5 | N | Kyushu Univ. | 580 | 1,067,600 | 5 | PRI | Waseda Univ. | 94 | 156,960 | 5 | PRI | Waseda Univ. | 125 | 219,210 | 5 | N | Hokkaido Univ. | 356 | 727,800 | 5 | N | Nagoya Univ. | 172 | 335,620 |
| 6 | N | Kobe Univ. | 537 | 992,650 | 6 | N | Kyoto Univ. | 82 | 146,770 | 6 | N | Univ. of Tsukuba | 105 | 177,760 | 6 | N | Kyushu Univ. | 355 | 683,530 | 6 | N | Kyushu Univ. | 170 | 447,260 |
| 7 | PRI | Waseda Univ. | 511 | 876,600 | 7 | PRI | Ritsumeikan Univ. | 78 | 101,490 | 6 | N | Hokkaido Univ. | 105 | 166,240 | 7 | N | Nagoya Univ. | 330 | 582,550 | 7 | N | Hokkaido Univ. | 155 | 356,420 |
| 8 | N | Tohoku Univ. | 501 | 854,690 | 8 | N | Nagoya Univ. | 75 | 122,600 | 6 | N | Tohoku Univ. | 105 | 161,100 | 8 | N | Tohoku Univ. | 325 | 607,190 | 8 | N | Tohoku Univ. | 142 | 297,300 |
| 9 | N | Univ. of Tsukuba | 499 | 968,410 | 9 | N | Tohoku Univ. | 71 | 86,400 | 9 | N | Kyoto Univ. | 101 | 183,730 | 9 | N | Osaka Univ. | 292 | 541,160 | 9 | NR | NIER | 127 | 247,500 |
| 10 | N | Nagoya Univ. | 495 | 868,390 | 10 | N | Hiroshima Univ. | 59 | 68,590 | 10 | N | Kyushu Univ. | 99 | 150,170 | 9 | PRI | Waseda Univ. | 292 | 500,430 | 10 | PRI | Waseda Univ. | 110 | 162,870 |
| 11 | N | Osaka Univ. | 477 | 935,900 | 11 | PUB | Osaka City Univ. | 47 | 70,600 | 11 | N | Nagoya Univ. | 90 | 163,240 | 11 | N | Kobe Univ. | 208 | 381,400 | 11 | N | Tokyo Gakugei Univ. | 105 | 154,300 |
| 12 | N | Hitotsubashi Univ. | 304 | 538,670 | 12 | PRI | Hosei Univ. | 41 | 79,260 | 12 | N | Yokohama Nat'l Univ. | 84 | 132,800 | 12 | N | Tokyo Gakugei Univ. | 169 | 233,480 | 12 | N | Kobe Univ. | 94 | 191,470 |
| 13 | PRI | Ritsumeikan Univ. | 264 | 366,850 | 12 | N | Okayama Univ. | 41 | 59,400 | 13 | PRI | Ritsumeikan Univ. | 66 | 112,230 | 13 | P | Tokyo Metro. Univ. | 154 | 258,280 | 13 | N | Shizuoka Univ. | 85 | 167,280 |
| 14 | N | Niigata Univ. | 215 | 269,360 | 14 | N | Osaka Univ. | 38 | 69,840 | 14 | N | Hiroshima Univ. | 62 | 81,800 | 14 | N | Chiba Univ. | 151 | 252,370 | 14 | N | Osaka Univ. | 84 | 148,690 |
| 15 | N | Chiba Univ. | 209 | 347,900 | 14 | PRI | Rikkyo Univ. | 38 | 56,800 | 15 | PRI | Keio Univ. | 59 | 105,990 | 15 | N | Tokyo Univ. of Foreign Studies | 144 | 452,080 | 15 | NR | Nat'l Museum of Ethnology | 75 | 326,810 |
| 16 | PUB | Tokyo Metro. Univ. | 202 | 322,780 | 16 | N | Chiba Univ. | 37 | 68,330 | 15 | N | Otaru Univ. of Commerce | 59 | 77,450 | 15 | N | Niigata Univ. | 144 | 187,060 | 15 | O | The Nat'l Inst. of Special Edu. | 75 | 107,400 |
| 17 | PRI | Keio Univ. | 199 | 361,360 | 16 | N | Hitotsubashi Univ. | 37 | 58,600 | 17 | N | Shiga Univ. | 50 | 49,300 | 17 | N | Shizuoka Univ. | 137 | 238,480 | 17 | N | Chiba Univ. | 68 | 113,320 |
| 18 | PRI | Rikkyo Univ. | 193 | 327,320 | 16 | N | Niigata Univ. | 37 | 47,000 | 18 | PUB | Osaka City Univ. | 48 | 100,400 | 18 | N | Saitama Univ. | 129 | 192,360 | 18 | PRI | Ritsumeikan Univ. | 65 | 82,330 |
| 18 | N | Okayama Univ. | 193 | 253,500 | 19 | N | Univ. of Tsukuba | 28 | 79,280 | 19 | PRI | Chuo Univ. | 47 | 117,510 | 19 | NR | NIER | 127 | 247,500 | 19 | N | Osaka Kyoiku Univ. | 61 | 84,200 |
| 20 | N | Shizuoka Univ. | 191 | 319,760 | 20 | N | Fukushima Univ. | 27 | 28,600 | 19 | PRI | Meiji Univ. | 47 | 61,640 | 20 | PRI | Rikkyo Univ. | 126 | 242,820 | 20 | N | Hyogo Univ. of Teacher Edu. | 59 | 132,270 |
| 21 | N | Tokyo Gakugei Univ. | 174 | 240,680 | 20 | N | Kumamoto Univ. | 27 | 28,000 | 21 | PRI | Aoyama Gakuin Univ. | 46 | 68,600 | 21 | PRI | Keio Univ. | 121 | 228,770 | 20 | N | Ochanomizu Univ. | 59 | 83,400 |
| 22 | PUB | Osaka City Univ. | 169 | 298,900 | 22 | N | Kagawa Univ. | 24 | 50,980 | 22 | PRI | Hosei Univ. | 44 | 96,350 | 22 | NR | NIJL | 120 | 504,780 | 22 | N | Saitama Univ. | 56 | 113,460 |
| 23 | N | Saitama Univ. | 167 | 235,960 | 23 | PRI | Doshisha Univ. | 23 | 33,600 | 22 | PRI | Nihon Univ. | 44 | 49,800 | 22 | PRI | Ritsumeikan Univ. | 120 | 153,130 | 22 | PRI | Keio Univ. | 56 | 106,320 |
| 24 | N | Tokyo Univ. of Foreign Studies | 155 | 478,880 | 24 | PRI | Kansai Univ. | 22 | 26,800 | 24 | PRI | Kansai Univ. | 41 | 75,160 | 24 | N | Okayama Univ. | 115 | 142,300 | 24 | PUB | Tokyo Metrop. Univ. | 54 | 130,880 |
| 25 | PRI | Kansai Univ. | 149 | 262,960 | 25 | N | Shizuoka Univ. | 21 | 18,800 | 25 | N | Kagawa Univ. | 39 | 37,800 | 25 | N | Kumamoto Univ. | 111 | 137,860 | 24 | PRI | Toyo Univ. | 54 | 129,090 |
| 26 | PRI | Meiji Univ. | 148 | 199,310 | 25 | N | Kagoshima Univ. | 21 | 18,200 | 26 | N | Okayama Univ. | 37 | 51,800 | 26 | N | Ochanomizu Univ. | 107 | 127,400 | 26 | N | Niigata Univ. | 52 | 50,400 |
| 27 | PRI | Hosei Univ. | 146 | 289,010 | 27 | PUB | Univ. of Shizuoka | 20 | 83,840 | 27 | N | Niigata Univ. | 34 | 35,300 | 27 | N | Univ. of the Ryukyus | 99 | 163,600 | 27 | N | Univ. of the Ryukyus | 50 | 75,100 |
| 28 | N | Kumamoto Univ. | 142 | 179,060 | 27 | PRI | Sophia Univ. | 20 | 43,200 | 28 | N | Shizuoka Univ. | 33 | 62,480 | 28 | N | Kanazawa Univ. | 93 | 133,400 | 28 | N | Fukushima Univ. | 47 | 51,600 |
| 29 | PRI | Chuo Univ. | 138 | 293,930 | 27 | PUB | Tokyo Metro. Univ. | 20 | 27,100 | 28 | N | Saitama Univ. | 33 | 39,700 | 29 | N | Osaka Kyoiku Univ. | 91 | 116,600 | 29 | N | Fukuoka Univ. of Edu. | 46 | 50,400 |
| 30 | PRI | Nihon Univ. | 136 | 184,080 | 27 | N | Kanazawa Univ. | 20 | 19,300 | 28 | PUB | Nagoya City Univ. | 33 | 31,100 | 30 | NR | Nat'l Museum of Ethnology | 86 | 379,370 | 30 | PRI | Rikkyo Univ. | 45 | 78,800 |
| 31 | N | Yokohama Nat'l Univ. | 130 | 203,500 | 31 | PRI | Keio Univ. | 19 | 26,600 | 31 | PRI | Kyoto Sangyo Univ. | 32 | 35,200 | 30 | PRI | Kansai Univ. | 86 | 161,000 | 31 | PRI | Kwansei Gakuin | 44 | 72,200 |
| 32 | NR | NIER | 127 | 247,500 | 32 | N | Mie Univ. | 18 | 18,200 | 31 | N | Toyama Univ. | 32 | 34,200 | 32 | N | Hitotsubashi Univ. | 85 | 138,420 | 31 | N | Okayama Univ. | 44 | 48,600 |
| 33 | N | Univ. of the Ryukyus | 124 | 225,410 | 33 | N | Univ. of the Ryukyus | 17 | 55,910 | 33 | PRI | Univ. of Marketing and Distribution | 31 | 55,500 | 32 | PRI | Nihon Univ. | 85 | 128,680 | 31 | N | Shinshu Univ. | 44 | 37,600 |
| 33 | N | Fukushima Univ. | 124 | 126,700 | 34 | PRI | Gakushuin Univ. | 16 | 20,900 | 33 | N | Nagasaki Univ. | 31 | 36,600 | 32 | PRI | Meiji Univ. | 85 | 121,870 | 34 | N | Hitotsubashi Univ. | 42 | 100,120 |
| 35 | PRI | Sophia Univ. | 122 | 211,450 | 34 | PRI | Meiji Univ. | 16 | 15,800 | 35 | PRI | Sophia Univ. | 30 | 35,800 | 35 | PRI | Chuo Univ. | 84 | 155,280 | 35 | PRI | Shukutoku Univ. | 40 | 138,230 |
| 35 | N | Kanazawa Univ. | 122 | 160,500 | 36 | PRI | Aoyama Gakuin Univ. | 15 | 17,100 | 35 | PRI | Kwansei Gakuin | 30 | 32,400 | 36 | O | Nat'l Res. Inst. for Cult. Prop., Nara | 81 | 118,690 | 36 | PRI | Japan Women's Univ. | 39 | 110,990 |
| 37 | NR | NIJL | 120 | 504,780 | 36 | PRI | Ryukoku Univ. | 15 | 14,500 | 37 | N | Tokyo Inst. of Technology | 29 | 88,870 | 37 | PRI | Toyo Univ. | 77 | 159,680 | 36 | O | Tokyo Metrop. Inst. of Gerontology | 39 | 65,450 |
| 37 | PRI | Doshisha Univ. | 120 | 162,840 | 38 | N | Shimane Unviersity | 14 | 22,100 | 37 | PRI | Rikkyo Univ. | 29 | 27,700 | 38 | O | The Nat'l Inst. of Special Edu. | 75 | 107,400 | 36 | N | Aichi Univ. of Edu. | 39 | 37,000 |
| 39 | PRI | Aoyama Gakuin Univ. | 111 | 151,100 | 39 | N | Toyama Univ. | 13 | 35,690 | 39 | PUB | Tokyo Metro. Univ. | 28 | 37,400 | 38 | N | Shinshu Univ. | 75 | 69,900 | 39 | N | Joetsu Univ. of Edu. | 37 | 35,000 |
| 40 | PRI | Toyo Univ. | 109 | 196,780 | 40 | PRI | Meiji Gakuin Univ. | 12 | 35,700 | 39 | N | Fukushima Univ. | 28 | 22,700 | 40 | P | Osaka City Univ. | 74 | 127,900 | 40 | PRI | Nihon Univ. | 36 | 64,500 |
| 40 | N | Ochanomizu Univ. | 109 | 129,600 | 40 | PRI | Senshu Univ. | 12 | 28,870 | 41 | PRI | Toyo Univ. | 27 | 29,900 | 41 | N | Shimane Unviersity | 73 | 74,500 | 40 | PRI | Tokai Univeristy | 36 | 61,470 |
| 42 | N | Toyama Univ. | 108 | 183,810 | 40 | PRI | Konan Univ. | 12 | 23,000 | 42 | PRI | Doshisha Univ. | 26 | 64,040 | 42 | PRI | Sophia Univ. | 72 | 132,450 | 42 | PRI | Sophia Univ. | 35 | 51,100 |
| 43 | PRI | Kwansei Gakuin | 106 | 166,420 | 40 | PRI | InterNat'l Christian Univ. | 12 | 20,700 | 42 | PUB | Kobe Univ. of Commerce | 26 | 31,100 | 43 | N | Ehime Univ. | 71 | 84,540 | 42 | N | Hokkaido Univ. of Edu. | 35 | 47,900 |
| 44 | N | Shiga Univ. | 103 | 113,400 | 44 | N | Yokohama Nat'l Univ. | 11 | 26,100 | 44 | N | Yamaguchi Univ. | 25 | 25,100 | 43 | PRI | Doshisha Univ. | 71 | 65,200 | 44 | PRI | Hosei Univ. | 34 | 66,700 |
| 45 | N | Kagoshima Univ. | 101 | 136,670 | 44 | PRI | Meijo Univ. | 11 | 15,500 | 45 | N | Oita Univ. | 24 | 20,400 | 45 | PRI | Kwansei Gakuin | 70 | 109,200 | 44 | PUB | Osaka City Univ. | 34 | 52,200 |
| 46 | N | Yamaguchi Univ. | 100 | 102,400 | 46 | PUB | Osaka Pref. Univ. | 10 | 10,700 | 46 | PUB | Yokohama City Univ. | 23 | 35,500 | 45 | N | Ibaraki Univ. | 70 | 84,200 | 44 | N | Hirosaki Univ. | 34 | 38,500 |
| 47 | N | Shinshu Univ. | 99 | 98,000 | 46 | PRI | Fukuoka Univ. | 10 | 9,800 | 47 | N | Shinshu Univ. | 22 | 26,100 | 47 | N | Hyogo Univ. of Teacher Edu. | 69 | 145,470 | 44 | N | Naruto Univ. of Edu. | 34 | 33,300 |
| 48 | N | Shimane Unviersity | 93 | 103,500 | 46 | N | Ibaraki Univ. | 10 | 9,400 | 48 | PRI | Tohoku Gakuin | 21 | 31,800 | 47 | N | Fukushima Univ. | 69 | 75,400 | 48 | N | Ehime Univ. | 33 | 46,840 |
| 49 | N | Ibaraki Univ. | 92 | 127,490 | 49 | PRI | Tezukayama Univ. | 9 | 13,400 | 48 | N | Chiba Univ. | 21 | 27,200 | 47 | N | Yamaguchi Univ. | 69 | 71,600 | 49 | O | Nat'l Center for Univ. Entr. Exam. | 32 | 74,900 |
| 49 | N | Osaka Kyoiku Univ. | 92 | 117,200 | 49 | N | Gifu Univ. | 9 | 9,800 | 50 | PRI | Ryukoku Univ. | 19 | 26,800 | 50 | N | Iwate Univ. | 67 | 69,600 | 49 | N | Kumamoto Univ. | 32 | 35,200 |
| | | | | | | | | | | 50 | PUB | Osaka Pref. Univ. | 19 | 24,700 | | | | | | | | | | |
| | | | | | | | | | | 50 | PRI | Hannan Univ. | 19 | 15,700 | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Total | 20,999 | 35,072,950 | | | Total | 2,413 | 3,996,270 | | | Total | 3,801 | 5,973,670 | | | Total | 14,785 | 25,103,010 | | | Total | 6,995 | 12,408,500 |

## Table 6　Top 50 organizations receiving grants for research in science, engineering and agriculture (in thousands of yen).

| Sciences/Total of 5 years | | | | | Engineering/ Total of 5 years | | | | | Sciences and Engineering/ Total of 5 years | | | | | Agriculture/ Total of 5 years | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ranking | Classification | Uni Name | # of Projects | The amout of funding | Ranking | Classification | Uni Name | # of Projects | The amout of funding | Ranking | Classification | Uni Name | # of Projects | The amout of funding | Ranking | Classification | Uni Name | # of Projects | The amout of funding |
| 1 | N | The Univ. of Tokyo | 1,912 | 6,962,270 | 1 | N | The Univ. of Tokyo | 2,206 | 9,691,450 | 1 | N | The Univ. of Tokyo | 4,118 | 16,653,720 | 1 | N | The Univ. of Tokyo | 1,223 | 5,101,440 |
| 2 | N | Kyoto Univ. | 1,338 | 4,634,920 | 2 | N | Tohoku Univ. | 2,046 | 8,318,800 | 2 | N | Kyoto Univ. | 3,242 | 11,070,980 | 2 | N | Kyoto Univ. | 971 | 3,115,950 |
| 3 | N | Tohoku Univ. | 1,100 | 3,679,450 | 3 | N | Kyoto Univ. | 1,904 | 6,436,060 | 3 | N | Tohoku Univ. | 3,146 | 11,998,250 | 3 | N | Hokkaido Univ. | 750 | 2,588,180 |
| 4 | N | Hokkaido Univ. | 896 | 2,868,520 | 4 | N | Tokyo Inst. of Tech. | 1,791 | 6,214,890 | 4 | N | Osaka Univ. | 2,579 | 8,515,500 | 4 | N | Kyushu Univ. | 425 | 1,276,490 |
| 5 | N | Osaka Univ. | 861 | 2,575,730 | 5 | N | Osaka Univ. | 1,718 | 5,939,770 | 5 | N | Tokyo Inst. of Tech. | 2,296 | 7,739,900 | 5 | N | Tohoku Univ. | 416 | 1,173,600 |
| 6 | N | Kyushu Univ. | 770 | 1,959,250 | 6 | N | Kyushu Univ. | 1,376 | 4,272,770 | 6 | N | Kyushu Univ. | 2,146 | 6,232,020 | 6 | N | Nagoya Univ. | 411 | 1,497,380 |
| 7 | N | Nagoya Univ. | 735 | 2,563,720 | 7 | N | Nagoya Univ. | 1,089 | 3,884,590 | 7 | N | Nagoya Univ. | 1,824 | 6,448,310 | 7 | N | Tokyo Univ. of Agri. and Tech. | 254 | 674,110 |
| 8 | N | Hiroshima Univ. | 558 | 1,314,740 | 8 | N | Hokkaido Univ. | 906 | 2,979,990 | 8 | N | Hokkaido Univ. | 1,802 | 5,848,510 | 8 | N | Univ. of Tsukuba | 235 | 746,380 |
| 9 | N | Tokyo Inst. of Tech. | 505 | 1,525,010 | 9 | N | Hiroshima Univ. | 521 | 1,356,580 | 9 | N | Hiroshima Univ. | 1,079 | 2,671,320 | 9 | N | Okayama Univ. | 218 | 515,520 |
| 10 | N | Univ. of Tsukuba | 460 | 1,269,520 | 10 | PRI | Waseda Univ. | 444 | 1,265,170 | 10 | N | Univ. of Tsukuba | 834 | 2,401,550 | 10 | PUB | Osaka Pref. Univ. | 212 | 427,040 |
| 11 | PUB | Tokyo Metro. Univ. | 392 | 1,086,700 | 11 | N | Kobe Univ. | 423 | 1,113,320 | 11 | N | Kobe Univ. | 737 | 1,926,600 | 11 | N | Obihiro Univ. of Agri. and Veterinary Med. | 209 | 584,060 |
| 12 | N | Kobe Univ. | 314 | 813,280 | 12 | N | Univ. of Tsukuba | 374 | 1,132,030 | 12 | PUB | Tokyo Metro. Univ. | 675 | 1,759,790 | 12 | N | Tottori Univ. | 184 | 426,590 |
| 13 | NR | High Energy Accelerator Res. Org. | 283 | 894,680 | 13 | N | Okayama Univ. | 372 | 903,200 | 13 | PRI | Waseda Univ. | 618 | 1,623,320 | 13 | N | Kobe Univ. | 183 | 455,760 |
| 14 | NR | Okazaki Nat'l Res. Inst.s | 271 | 971,020 | 14 | N | Nagoya Inst. of Tech. | 360 | 850,110 | 14 | N | Okayama Univ. | 608 | 1,552,280 | 13 | N | Mie Univ. | 183 | 429,270 |
| 14 | N | Chiba Univ. | 271 | 756,030 | 15 | N | Nagaoka Univ. of Tech. | 349 | 884,240 | 15 | N | Chiba Univ. | 534 | 1,319,010 | 15 | N | Hiroshima Univ. | 175 | 495,780 |
| 16 | PUB | Osaka City Univ. | 264 | 591,080 | 16 | PUB | Osaka Pref. Univ. | 335 | 837,340 | 16 | N | Kanazawa Univ. | 500 | 1,047,130 | 16 | N | Univ. of Miyazaki | 173 | 325,180 |
| 17 | N | Kanazawa Univ. | 262 | 547,430 | 17 | N | Kyushu Inst. of Tech. | 333 | 823,150 | 17 | N | Shizuoka Univ. | 482 | 1,201,200 | 17 | N | Kagoshima Univ. | 170 | 378,000 |
| 18 | N | Okayama Univ. | 236 | 649,080 | 18 | N | Tokyo Univ. of Agri. and Tech. | 330 | 1,088,640 | 18 | PRI | Keio Univ. | 460 | 1,281,240 | 18 | N | Iwate Univ. | 168 | 433,640 |
| 19 | O | The Inst. of Phys. and Chem.. Res. | 222 | 429,000 | 19 | N | Yokohama Nat'l Univ. | 329 | 1,026,590 | 19 | PRI | Tokyo Univ. of Sci. | 441 | 877,570 | 18 | N | Gifu Univ. | 168 | 371,800 |
| 20 | N | Niigata Univ. | 213 | 431,640 | 20 | N | Kumamoto Univ. | 310 | 655,030 | 20 | PUB | Osaka Pref. Univ. | 435 | 991,240 | 20 | N | Tokyou Univ. of Fisheries | 152 | 393,890 |
| 21 | PRI | Tokyo Univ. of Sci. | 211 | 384,160 | 21 | N | Toyohashi Univ. of Tech. | 298 | 781,720 | 21 | N | Kumamoto Univ. | 434 | 942,620 | 21 | PRI | Kitasato Univ. | 146 | 251,260 |
| 22 | N | Shizuoka Univ. | 198 | 439,480 | 22 | PRI | Keio Univ. | 285 | 892,940 | 22 | N | Nagoya Inst. of Tech. | 432 | 1,006,350 | 22 | N | Shizuoka Univ. | 143 | 255,900 |
| 23 | N | Ehime Univ. | 195 | 369,460 | 23 | N | Shizuoka Univ. | 284 | 761,720 | 23 | N | Niigata Univ. | 422 | 853,810 | 23 | N | Utsunomiya Univ. | 142 | 240,400 |
| 24 | N | Yamaguchi Univ. | 188 | 319,000 | 24 | PUB | Tokyo Metro. Univ. | 283 | 673,090 | 23 | N | Yamaguchi Univ. | 422 | 772,250 | 24 | N | Shinshu Univ. | 121 | 224,700 |
| 25 | NR | Nat'l Astron. Obs. of Japan | 178 | 597,250 | 25 | N | Chiba Univ. | 263 | 562,980 | 25 | N | Tokyo Univ. of Agri. and Tech. | 415 | 1,269,210 | 25 | N | Niigata Univ. | 118 | 263,620 |
| 26 | PRI | Keio Univ. | 175 | 388,300 | 26 | N | Gifu Univ. | 261 | 500,830 | 26 | PUB | Osaka City Univ. | 407 | 924,890 | 25 | PRI | Nihon Univ. | 118 | 236,600 |
| 27 | PRI | Waseda Univ. | 174 | 358,150 | 27 | N | Kyoto Inst. of Tech. | 253 | 482,600 | 27 | N | Yokohama Nat'l Univ. | 404 | 1,204,930 | 27 | PRI | Tokyo Univ. of Agri. | 117 | 246,850 |
| 28 | N | Ibaraki Univ. | 159 | 304,230 | 28 | N | Saitama Univ. | 238 | 590,580 | 28 | N | Kyushu Inst. of Tech. | 390 | 913,250 | 28 | N | Ehime Univ. | 101 | 199,000 |
| 29 | N | Shimane Unviersity | 147 | 333,910 | 28 | N | Kanazawa Univ. | 238 | 499,700 | 29 | N | Saitama Univ. | 378 | 825,780 | 29 | N | Kochi Univ. | 100 | 166,000 |
| 29 | N | Nara Women's Univ. | 147 | 262,760 | 30 | N | Yamaguchi Univ. | 234 | 453,250 | 30 | O | The Inst. of Phys. and Chem.. Res. | 370 | 822,950 | 30 | O | The Inst. of Phys. and Chem.. Res. | 98 | 278,600 |
| 31 | N | Saitama Univ. | 140 | 235,200 | 31 | PRI | Tokyo Univ. of Sci. | 230 | 493,410 | 31 | N | Nagaoka Univ. of Tech. | 358 | 909,840 | 30 | N | Yamaguchi Univ. | 98 | 243,180 |
| 32 | PUB | Himeji Inst. of Tech. | 139 | 423,770 | 32 | N | Yamagata Univ. | 220 | 533,120 | 32 | N | Gifu Univ. | 343 | 678,550 | 32 | N | Saga Univ. | 92 | 339,240 |
| 33 | PRI | Nihon Univ. | 137 | 208,870 | 33 | N | Shinshu Univ. | 209 | 480,270 | 32 | N | Ibaraki Univ. | 343 | 658,580 | 32 | N | Chiba Univ. | 92 | 171,200 |
| 34 | N | Ochanomizu Univ. | 133 | 232,850 | 33 | N | Niigata Univ. | 209 | 422,170 | 34 | N | Ehime Univ. | 332 | 652,970 | 34 | N | Ibaraki Univ. | 88 | 182,460 |
| 35 | N | The Univ. of Electro-Comm. | 128 | 233,500 | 35 | N | The Univ. of Tokushima | 203 | 359,010 | 35 | N | Shinshu Univ. | 330 | 663,570 | 34 | N | Shimane Unviersity | 88 | 153,920 |
| 36 | N | Kumamoto Univ. | 124 | 287,590 | 36 | N | The Univ. of Electro-Comm. | 199 | 451,870 | 35 | N | Kyoto Inst. of Tech. | 330 | 630,500 | 36 | PRI | Azabu Univ. | 85 | 189,510 |
| 37 | N | Shinshu Univ. | 121 | 183,300 | 37 | N | Ibaraki Univ. | 184 | 374,320 | 37 | N | Yamagata Univ. | 329 | 711,750 | 36 | PRI | Rakuno Gakuen Univ. | 85 | 138,600 |
| 38 | N | Toyama Univ. | 118 | 147,900 | 38 | N | Tottori Univ. | 176 | 289,030 | 38 | N | The Univ. of Electro-Comm. | 327 | 685,370 | 38 | PRI | Kinki Univ. | 80 | 169,860 |
| 39 | PRI | Sophia Univ. | 115 | 160,400 | 39 | N | Nagasaki Univ. | 172 | 415,550 | 39 | NR | High Energy Accelerator Res. Org. | 318 | 1,007,310 | 39 | N | Kagawa Univ. | 79 | 129,400 |
| 40 | N | Kagoshima Univ. | 112 | 192,580 | 40 | PRI | Nihon Univ. | 168 | 381,400 | 40 | N | Toyohashi Univ. of Tech. | 311 | 811,720 | 40 | PUB | Kyoto Pref. Univ. | 75 | 171,130 |
| 41 | N | Yamagata Univ. | 109 | 178,630 | 41 | PRI | Kinki Univ. | 166 | 226,050 | 41 | PRI | Nihon Univ. | 305 | 590,270 | 41 | N | Yamagata Univ. | 73 | 180,660 |
| 42 | N | Kochi Univ. | 103 | 198,150 | 42 | N | Akita Univ. | 164 | 290,100 | 42 | NR | Okazaki Nat'l Res. Inst.s | 301 | 1,025,920 | 42 | N | Nagasaki Univ. | 72 | 206,290 |
| 43 | PUB | Osaka Pref. Univ. | 100 | 153,900 | 43 | N | Univ. of Fukui | 162 | 210,600 | 43 | PUB | Himeji Inst. of Tech. | 288 | 676,670 | 43 | N | Hirosaki Univ. | 68 | 97,800 |
| 43 | N | Univ. of the Ryukyus | 100 | 143,700 | 44 | N | Utsunomiya Univ. | 159 | 302,600 | 44 | N | The Univ. of Tokushima | 281 | 493,610 | 44 | N | Univ. of the Ryukyus | 59 | 93,100 |
| 45 | N | Saga Univ. | 98 | 143,200 | 45 | N | Gunma Univ. | 158 | 369,290 | 45 | N | Kagoshima Univ. | 249 | 452,880 | 45 | J | Akita Pref. Coll. of Agri. | 46 | 93,000 |
| 46 | PRI | Okayama Univ. of Sci. | 87 | 143,000 | 46 | N | Muroran Inst. of Tech. | 155 | 308,100 | 46 | N | Gunma Univ. | 244 | 519,390 | 46 | PUB | Fukui Pref. Univ. | 44 | 55,700 |
| 47 | N | Gunma Univ. | 86 | 150,100 | 47 | PRI | Kanazawa Inst. of Tech. | 152 | 215,300 | 47 | PRI | Kinki Univ. | 242 | 341,450 | 47 | PRI | Tokai Univ. | 42 | 111,360 |
| 48 | N | Tokyo Univ. of Agri. and Tech. | 85 | 180,570 | 48 | PUB | Himeji Inst. of Tech. | 149 | 252,900 | 48 | N | Shimane Univ. | 219 | 474,710 | 48 | N | Tokyo Inst. of Tech. | 38 | 119,680 |
| 49 | N | Gifu Univ. | 82 | 157,750 | 49 | O | The Inst. of Phys. and Chem.. Res. | 148 | 393,950 | 49 | PRI | Tokai Univ. | 217 | 269,100 | 49 | PUB | Akita Pref. Univ. | 37 | 72,000 |
| 50 | NR | Japan Aerospace Exploration Agency | 80 | 219,540 | 49 | PRI | Kansai Univ. | 148 | 343,760 | 50 | N | Nagasaki Univ. | 213 | 472,750 | 49 | PRI | Nippon Veterinary and Animal Sci. Univ. | 37 | 48,100 |
| 50 | O | The Nat'l Sci. Museum | 80 | 193,120 | | | | | | | | | | | | | | | |
| 50 | PRI | The Toho Univ. | 80 | 109,700 | | | | | | | | | | | | | | | |
| 50 | PRI | Tokai Univ. | 80 | 90,900 | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | Total | 19,913 | 50,853,960 | | | Total | 30,988 | 86,791,930 | | | Total | 50,901 | 137,645,890 | | | Total | 10,590 | 28,827,920 |

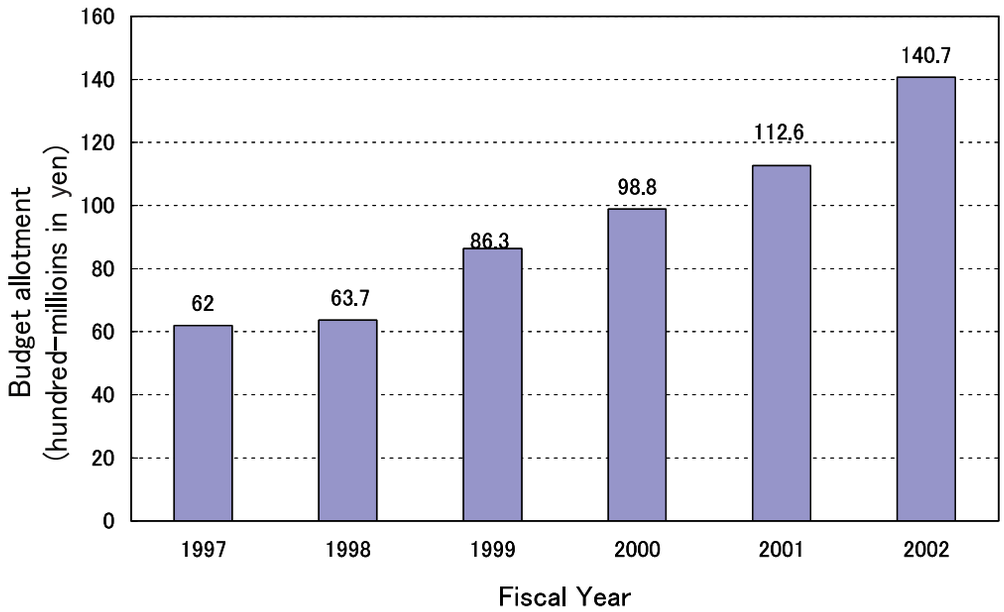


Fig. 2 Budget allotment to arts/humanities and social sciences.

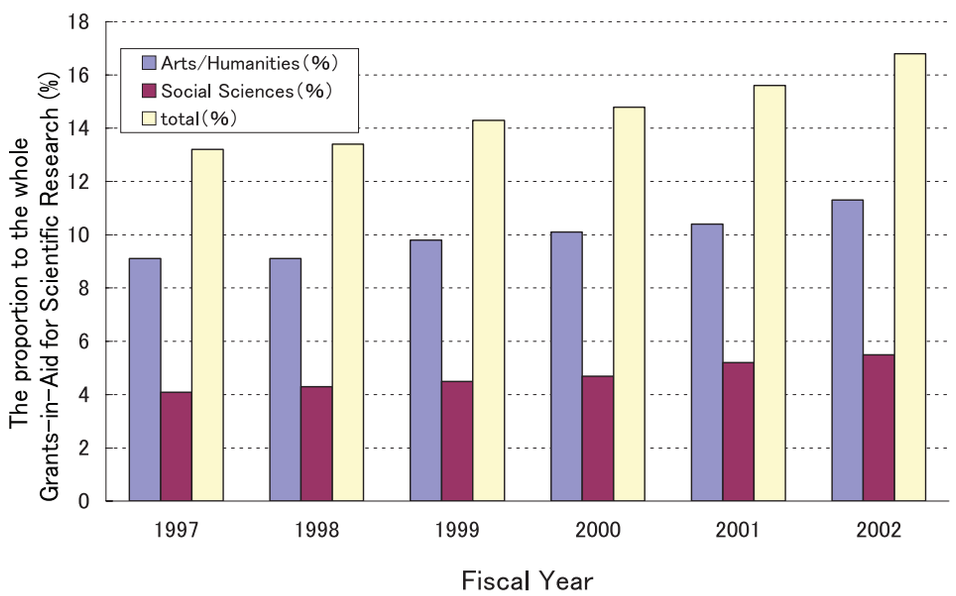


Fig. 3 Proportion of number of subjects included in arts/humanities and social sciences to the whole.

and agriculture categories.

Fig. 4 shows changes in the number of subjects funded in science, engineering, and agriculture over FY 1998—2002. Each area has shown a little growth in number of subjects funded during this period.

(3) Medical Science, Dentistry, Pharmacy and Nursing

These research fields develop medical treatments and promote the welfare of the Japanese people. Their importance is thus reflected in the large number of awards of Grants-in-Aid for medical science, dentistry, pharmacy and nursing. In fact, their share is 34% of all funded research subjects. The large share is especially evident in comparison with the shares of science, engineering, and agriculture. Note that the detailed clas-

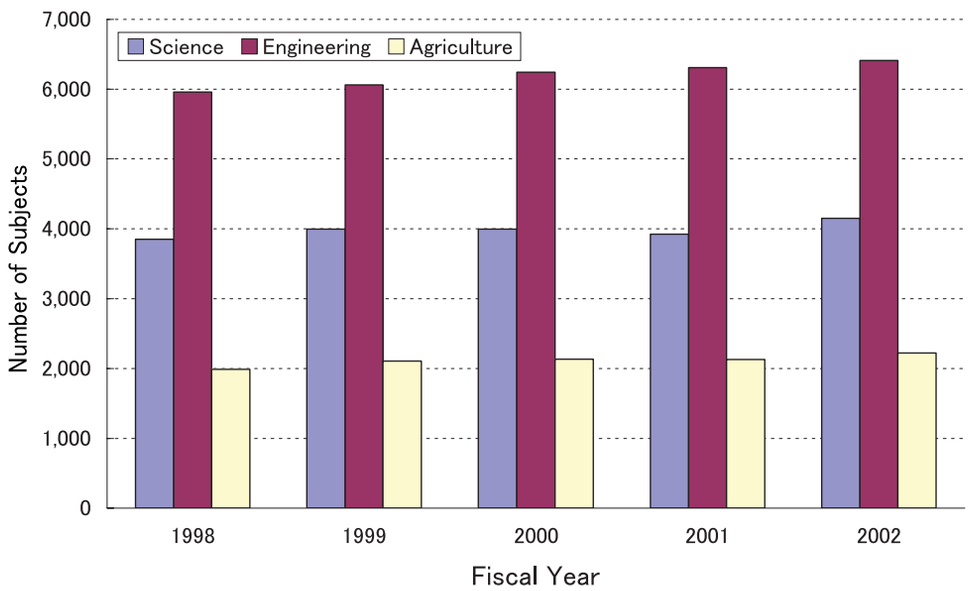


Fig. 4 Changes in number of subjects included in science, engineering and agriculture classifications.

sification code of MEXT of the medical domain consists of nine subfields: physiology, pathology, social medicine, internal medicine, surgery, dentistry, pharmacy, medicine in general, and nursing science. Here, we reclassified these nine subfields into five fields: (A) basic medicine [physiology and pathology], (B) clinical medicine [internal medicine, surgery, and medicine in general], (C) dentistry, (D) pharmacy and (E) social medicine and nursing, after considering the present situations of medical departments in Japanese universities.

Fig. 5 shows changes in the number of subjects in the five fields over FY 1998—2002. Each field has had a little growth during this period. Fig. 6 also shows changes in the amount of funding for each field.

Table 7 shows the top 50 organizations that researchers belong to. The table shows the breakdown for the overall research field of medicine and for individual areas of physiology, pathology, internal medicine, surgery, and medicine in general ((A) plus (B)); dentistry (C), pharmacy (D); and social medicine and nursing (E).

On the whole, although the former imperial universities were generally ranked higher in every field, the general aspect of this ranking is completely different from those of the previous two rankings. Many private and medical universities are in the middle in the top 50. The research characteristics of universities and institutes are clearly revealed in the categorization of medical science, dentistry, pharmacy, and nursing.

(4) Interdisciplinary Studies

This area includes interdisciplinary studies, general studies, and new research fields that are difficult to include in the traditional disciplines. The ranking of these fields indicates the research activities of interdisciplinary and new fields.

Fig. 7 shows the changes in the number of subjects funded in interdisciplinary and general areas, and projects with limited periods. Fig. 8 shows the oportion of funded subjects broken down by individual interdisciplinary area of study.

The national and large private universities are well represented, as are some smaller universities.

Table 8 shows the top 50 and 30 organizations to which funded researchers belong to in the interdisciplinary and general area classification.

The research characteristics of universities and institutes are clearly revealed in the individual research areas.

(5) JSPS Fellows

The Japan Society for the Promotion of Science (JSPS) has a special fellowship system to educate young researchers. The Grants-in-Aid are allotted to JSPS fellows to encourage research. Therefore, the number of funded subjects corresponds to the number of young researchers at each university and also to the degree that each university educates young researchers.

Fig. 9 shows the proportion of number of funded subjects of Grants-in-Aid for JSPS fellows broken down by research field in FY 2002.

Table 7　Top 50 organizations receiving grants for research in medicine, dentistry, pharmacy and social medicine/nursing (in thousand of yen).

| Medicine domain (total) Total of 5 years | | | | | Basic Medicine (Physiology/ Pathology/ Internal Medicine/ Surgery/Medicine in General) Total of 5 years | | | | | Dentistry Total of 5 years | | | | | Pharmacy Total of 5 years | | | | | Social Medicine and Nursing Total of 5 years | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ranking | Classification | Uni. Name | # of Projects | Amount of Funding | Ranking | Classification | Uni. Name | # of Projects | Amount of Funding | Ranking | Classification | Uni. Name | # of Projects | Amount of Funding | Ranking | Classification | Uni. Name | # of Projects | Amount of Funding | Ranking | Classification | Uni. Name | # of Projects | Amount of Funding |
| 1 | N | The Univ. of Tokyo | 2,344 | 7,470,520 | 1 | N | The Univ. of Tokyo | 1,894 | 5,949,060 | 1 | N | Tokyo Med. and Dent. Univ. | 578 | 1,898,220 | 1 | N | The Univ. of Tokyo | 314 | 1,193,260 | 1 | N | Osaka Univ. | 120 | 246,400 |
| 2 | N | Osaka Univ. | 2,283 | 6,532,320 | 2 | N | Osaka Univ. | 1,567 | 4,457,350 | 2 | N | Osaka Univ. | 433 | 1,322,430 | 2 | N | Kyoto Univ. | 228 | 767,130 | 2 | N | Nagoya Univ. | 114 | 295,220 |
| 3 | N | Tohoku Univ. | 1,929 | 5,042,130 | 3 | N | Kyoto Univ. | 1,388 | 4,991,880 | 3 | PRI | Nihon Univ. | 431 | 765,460 | 3 | N | Tohoku Univ. | 182 | 553,890 | 3 | N | The Univ. of Tokyo | 113 | 275,400 |
| 4 | N | Kyushu Univ. | 1,722 | 4,581,690 | 4 | PRI | Keio Univ. | 1,345 | 2,760,280 | 4 | N | Tohoku Univ. | 392 | 740,100 | 4 | N | Hokkaido Univ. | 175 | 506,300 | 4 | N | Chiba Univ. | 97 | 111,500 |
| 5 | N | Kyoto Univ. | 1,691 | 5,966,500 | 5 | N | Tohoku Univ. | 1,292 | 3,545,620 | 5 | N | Okayama Univ. | 388 | 975,210 | 5 | N | Osaka Univ. | 163 | 506,140 | 5 | N | Gunma Univ. | 79 | 189,940 |
| 6 | PRI | Keio Univ. | 1,401 | 2,879,760 | 6 | N | Kyushu Univ. | 1,205 | 3,276,360 | 6 | N | Hiroshima Univ. | 387 | 936,140 | 6 | PRI | Tokyo Univ. of Pharm. and Life Sci. | 132 | 182,400 | 6 | N | Kanazawa Univ. | 78 | 169,190 |
| 7 | N | Tokyo Med. and Dent. Univ. | 1,350 | 3,708,460 | 7 | PRI | The Jikei Univ. | 814 | 886,330 | 7 | N | Niigata Univ. | 386 | 988,370 | 7 | N | Chiba Univ. | 126 | 265,600 | 6 | PRI | Univ. of Occup. and Envir. Health | 78 | 98,100 |
| 8 | N | Hokkaido Univ. | 1,325 | 3,629,920 | 8 | N | Hokkaido Univ. | 788 | 2,186,460 | 8 | N | The Univ. of Tokushima | 382 | 811,320 | 8 | PUB | Nagoya City Univ. | 116 | 212,100 | 8 | PRI | Kitasato Univ. | 77 | 95,700 |
| 9 | N | Okayama Univ. | 1,110 | 2,283,190 | 9 | PRI | Kurume Univ. | 721 | 945,900 | 9 | N | Kyushu Univ. | 378 | 1,034,410 | 9 | N | The Univ. of Tokushima | 108 | 349,350 | 9 | N | Yamagata Univ. | 76 | 71,800 |
| 10 | N | Nagasaki Univ. | 1,079 | 2,135,240 | 10 | PRI | Tokyo Women's Med. Univ. | 718 | 1,012,340 | 10 | PRI | Showa Univ. | 366 | 773,250 | 10 | N | Kumamoto Univ. | 106 | 282,130 | 10 | N | Hokkaido Univ. | 73 | 211,630 |
| 11 | N | The Univ. of Tokushima | 1,075 | 2,303,770 | 11 | N | Kumamoto Univ. | 708 | 1,653,190 | 11 | N | Nagasaki Univ. | 313 | 561,020 | 10 | N | Toyama Med. and Pharm. Univ. | 106 | 187,300 | 11 | N | Okayama Univ. | 72 | 121,210 |
| 12 | N | Hiroshima Univ. | 1,040 | 2,325,290 | 12 | N | Tokyo Med. and Dent. Univ. | 707 | 1,672,940 | 12 | PRI | Aichi Gakuin Univ. | 301 | 450,360 | 12 | PRI | Showa Univ. | 104 | 198,200 | 12 | PRI | St.Luke's Coll. of Nursing | 71 | 147,850 |
| 13 | N | Niigata Univ. | 930 | 2,146,080 | 13 | N | Nagoya Univ. | 672 | 1,539,190 | 13 | N | Hokkaido Univ. | 289 | 725,530 | 13 | PRI | Kyoto Pharm. Univ. | 89 | 149,700 | 12 | N | Hiroshima Univ. | 71 | 113,200 |
| 14 | N | Chiba Univ. | 889 | 1,901,070 | 14 | N | Kanazawa Univ. | 662 | 1,340,910 | 13 | PRI | Tokyo Dent. Coll. | 289 | 517,320 | 13 | PRI | Teikyo Univ. | 89 | 134,500 | 14 | N | Kyushu Univ. | 68 | 99,000 |
| 15 | PRI | The Jikei Univ. | 870 | 972,620 | 15 | N | Chiba Univ. | 631 | 1,441,570 | 15 | PRI | Nippon Med. Sch. | 275 | 456,960 | 15 | N | Kanazawa Univ. | 82 | 199,800 | 14 | PUB | Ssapporo Med. Univ. | 68 | 71,300 |
| 16 | N | Kumamoto Univ. | 850 | 2,009,920 | 16 | PRI | Jichi Med. Sch. | 624 | 1,023,890 | 16 | PRI | Kanagawa Dent. Coll. | 260 | 397,300 | 16 | N | Hiroshima Univ. | 81 | 223,400 | 16 | PRI | Tokai Univeristy | 67 | 96,600 |
| 17 | N | Kanazawa Univ. | 844 | 1,756,900 | 17 | PUB | Kyoto Pref. Univ. of Med. | 621 | 1,226,710 | 17 | N | Kagoshima Univ. | 237 | 480,450 | 16 | N | Nagasaki Univ. | 81 | 219,760 | 17 | N | Nagasaki Univ. | 66 | 117,900 |
| 18 | N | Nagoya Univ. | 835 | 1,960,740 | 18 | N | Nagasaki Univ. | 619 | 1,236,560 | 18 | PUB | Kyushu Dent. Coll. | 198 | 299,970 | 18 | N | Okayama Univ. | 75 | 154,100 | 17 | PRI | The Jap. Red Cross Coll. of Nursing | 66 | 78,100 |
| 19 | PRI | Kurume Univ. | 768 | 995,000 | 19 | N | Okayama Univ. | 575 | 1,032,670 | 19 | PRI | Health Sci. Univ. of Hokkaido | 189 | 355,360 | 19 | N | Kyushu Univ. | 71 | 171,920 | 19 | PUB | Kochi Women's Univ. | 65 | 130,450 |
| 20 | PRI | Tokyo Women's Med. Univ. | 764 | 1,060,040 | 20 | N | Gunma Univ. | 553 | 1,320,030 | 20 | PRI | Tsurumi Univ. | 178 | 286,500 | 20 | PRI | Kitasato Univ. | 70 | 112,520 | 19 | N | Kobe Univ. | 65 | 91,600 |
| 21 | PRI | Showa Univ. | 749 | 1,316,450 | 21 | N | The Univ. of Tokushima | 540 | 1,094,500 | 21 | PRI | Iwate Med. Univ. | 174 | 253,400 | 21 | PUB | Univ. of Shizuoka | 68 | 142,800 | 21 | PUB | Coll. of Nursing Art and Sci., Hyogo | 64 | 144,880 |
| 22 | PRI | Nihon Univ. | 715 | 1,205,420 | 22 | N | Univ. of Tsukuba | 535 | 1,290,690 | 22 | PRI | Osaka Dent. Univ. | 164 | 296,500 | 22 | PUB | Gifu Pharm. Univ. | 65 | 107,900 | 22 | N | Tohoku Univ. | 63 | 202,520 |
| 23 | PRI | Jichi Med. Sch. | 680 | 1,174,990 | 23 | N | Niigata Univ. | 509 | 1,102,810 | 23 | PRI | Fukuoka Dent. Coll. | 148 | 183,700 | 23 | PRI | Kobe Pharm. Univ. | 64 | 92,600 | 23 | N | Univ. of Tsukuba | 60 | 137,430 |
| 24 | PUB | Kyoto Pref. Univ. of Med. | 667 | 1,312,710 | 23 | PRI | Nippon Med. Sch. | 509 | 679,000 | 24 | PRI | Meikai Univ. | 132 | 256,000 | 24 | O | The Inst. of Phys. and Chem. Res. | 60 | 94,600 | 23 | O | Osaka Pref. Inst. of Public Health | 60 | 92,500 |
| 25 | N | Gunma Univ. | 649 | 1,537,170 | 25 | PRI | Kansai Med. Univ. | 506 | 792,930 | 25 | PRI | Asahi Univ. | 121 | 192,050 | 25 | PRI | Tokyo Univ. of Sci. | 56 | 101,700 | 23 | N | Hamamatsu Univ. Sch. of Med. | 60 | 76,000 |
| 26 | N | Univ. of Tsukuba | 621 | 1,485,820 | 26 | N | Hiroshima Univ. | 501 | 1,052,550 | 26 | PRI | Matsumoto Dent. Univ. | 104 | 197,440 | 26 | O | Nat'l Inst. of Health Sci. | 52 | 91,070 | 26 | PUB | Nagano Coll. of Nursing | 58 | 54,500 |
| 27 | N | Kagoshima Univ. | 611 | 1,149,260 | 27 | N | Kobe Univ. | 498 | 1,269,480 | 27 | PRI | Ohu Univ. | 80 | 97,100 | 27 | PRI | Hoshi Univ. | 51 | 59,000 | 27 | N | Yamanashi Med. Univ. | 56 | 103,740 |
| 28 | PRI | Kitasato Univ. | 583 | 723,220 | 28 | PUB | Ssapporo Med. Univ. | 478 | 994,450 | 28 | N | Nagoya Univ. | 44 | 121,630 | 28 | PRI | Kobe Gakuin Univ. | 45 | 69,100 | 27 | N | Saga Med. Sch. | 56 | 79,600 |
| 29 | N | Kobe Univ. | 571 | 1,371,180 | 29 | PUB | Yokohama City Univ. | 452 | 682,110 | 29 | O | Nat'l Inst. of Infect. Diseases | 43 | 98,500 | 29 | PRI | Osaka Univ. of Pharm. Sci. | 42 | 44,100 | 29 | N | Tokyo Med. and Dent. Univ. | 55 | 121,900 |
| 30 | PUB | Sapporo Med. Univ. | 568 | 1,137,850 | 30 | PRI | Jundendo Univ. | 443 | 640,500 | 30 | N | Kyoto Univ. | 41 | 140,050 | 30 | PRI | Meiji Pharm. Univ. | 39 | 61,300 | 30 | PUB | Fukushima Med. Univ. | 54 | 49,300 |
| 31 | PUB | Nagoya City Univ. | 548 | 1,087,900 | 31 | N | Shinshu Univ. | 429 | 822,200 | 31 | N | Chiba Univ. | 35 | 82,400 | 30 | PRI | Setsunan Univ. | 39 | 58,900 | 31 | N | Oita Med. Univ. | 53 | 69,200 |
| 32 | PRI | Nippon Med. Sch. | 533 | 723,500 | 32 | PRI | Kitasato Univ. | 422 | 499,800 | 32 | PRI | Hyogo Coll. of Med. | 27 | 37,000 | 32 | PRI | Tokushima Bunri Univ. | 35 | 49,300 | 31 | PUB | Tokyo Metro. Univ. of Health Sci. | 53 | 53,180 |
| 33 | PRI | Kansai Med. Univ. | 526 | 847,620 | 33 | N | Gifu Univ. | 420 | 834,730 | 33 | N | Ehime Univ. | 26 | 90,720 | 32 | PRI | Hokuriku Univ. | 35 | 45,000 | 33 | N | Mie Univ. | 49 | 98,400 |
| 34 | PUB | Yokohama City Univ. | 488 | 723,610 | 34 | N | Yamaguchi Univ. | 407 | 823,080 | 34 | N | The Univ. of Tokyo | 23 | 52,800 | 32 | PRI | Kyoritsu Univ. of Pharm. | 35 | 44,100 | 34 | PRI | Jichi Med. Sch. | 48 | 143,400 |
| 35 | N | Gifu Univ. | 477 | 920,230 | 35 | PRI | Tokai Univeristy | 396 | 802,580 | 35 | N | Kanazawa Univ. | 22 | 47,000 | 35 | PRI | The Toho Univ. | 34 | 42,600 | 35 | PRI | The Jikei Univ. | 47 | 72,490 |
| 36 | N | Shinshu Univ. | 475 | 912,700 | 36 | PUB | Nagoya City Univ. | 394 | 814,800 | 35 | PUB | Nara Med. Univ. | 22 | 31,800 | 36 | PRI | Meijo Univ. | 31 | 33,800 | 35 | PUB | Osaka Pref. Coll. of Nursing | 47 | 48,200 |
| 37 | N | Toyama Med. and Pharm. Univ. | 471 | 815,740 | 37 | N | Hamamatsu Univ. Sch. of Med. | 373 | 575,390 | 37 | PUB | Ssapporo Med. Univ. | 21 | 71,300 | 37 | PRI | Mukogawa Women's Univ. | 30 | 49,800 | 37 | N | Shinshu Univ. | 45 | 89,300 |
| 38 | PRI | Tokai Univeristy | 469 | 907,080 | 38 | N | Mie Univ. | 371 | 893,160 | 38 | N | Univ. of Tsukuba | 19 | 40,700 | 38 | PRI | Nihon Univ. | 27 | 37,300 | 37 | N | Siga Univ. of Med. Sci. | 45 | 80,940 |
| 39 | PRI | Jundendo Univ. | 466 | 686,970 | 39 | N | Ehime Univ. | 369 | 755,030 | 39 | N | Gifu Univ. | 18 | 27,000 | 39 | PRI | Health Sci. Univ. of Hokkaido | 25 | 40,800 | 37 | N | The Univ. of Tokushima | 45 | 48,600 |
| 40 | N | Yamaguchi Univ. | 457 | 921,280 | 40 | N | Akita Univ. | 367 | 634,900 | 40 | N | Tottori Univ. | 17 | 28,600 | 39 | O | Nat'l Inst. of Infect. Diseases | 25 | 38,500 | 40 | N | Fukui Med. Univ. | 44 | 103,670 |
| 41 | N | Hamamatsu Univ. Sch. of Med. | 441 | 659,190 | 41 | PUB | Osaka City Univ. | 361 | 531,000 | 40 | PRI | Kanazawa Med. Univ. | 17 | 21,100 | 39 | PRI | Niigata Univ. of Pharm. and App. Life | 25 | 30,400 | 41 | N | Yamaguchi Univ. | 43 | 90,000 |
| 42 | N | Ehime Univ. | 431 | 891,150 | 42 | PRI | Saitama Med. Sch. | 354 | 508,730 | 42 | N | Miyazaki Med. Coll. | 16 | 16,600 | 42 | O | Nat'l Inst. of Radiological Sci. | 24 | 65,240 | 41 | PUB | Kobe City Coll. of Nursing | 43 | 60,100 |
| 43 | N | Mie Univ. | 429 | 1,021,660 | 43 | N | Kagoshima Univ. | 335 | 615,810 | 43 | PRI | Keio Univ. | 15 | 15,000 | 43 | O | Tokyo Metro. Inst. of Gerontology | 23 | 36,300 | 41 | PRI | Health Sci. Univ. of Hokkaido | 43 | 37,700 |
| 44 | N | Yamagata Univ. | 424 | 759,050 | 44 | N | Yamagata Univ. | 334 | 660,050 | 44 | PUB | Yokohama City Univ. | 14 | 27,200 | 44 | PRI | Fukuoka Univ. | 22 | 30,700 | 44 | N | Akita Univ. | 42 | 81,800 |
| 45 | N | Akita Univ. | 421 | 730,700 | 45 | N | Asahikawa Med. Coll. | 329 | 593,040 | 44 | PRI | Kitasato Univ. | 14 | 15,200 | 45 | PRI | Fukuyama Univ. | 20 | 29,300 | 45 | PRI | Saitama Med. Sch. | 40 | 65,500 |
| 46 | PRI | Univ. of Occup. and Envir. Health | 407 | 577,960 | 46 | N | Hirosaki Univ. | 322 | 546,790 | 44 | PUB | Yokohama City Univ. | 14 | 14,800 | 45 | PRI | Showa Pharm. Univ. | 20 | 23,200 | 46 | PRI | Keio Univ. | 39 | 103,080 |
| 47 | PRI | Saitama Med. Sch. | 394 | 574,230 | 47 | N | Toyama Med. and Pharm. Univ. | 321 | 543,900 | 44 | J | Fukuoka Coll. of Health Sci. | 14 | 13,600 | 47 | PRI | Josai Univ. | 19 | 19,400 | 46 | N | Toyama Med. and Pharm. Univ. | 39 | 80,140 |
| 48 | PRI | Teikyo Univ. | 385 | 679,900 | 47 | PRI | Univ. of Occup. and Envir. Health | 321 | 473,460 | 48 | N | Shimane Med. Univ. | 13 | 17,100 | 48 | PRI | Kinki Univ. | 15 | 34,000 | 48 | N | Hirosaki Univ. | 38 | 111,280 |
| 49 | N | Yamanashi Med. Univ. | 378 | 639,780 | 49 | N | Miyazaki Med. Coll. | 313 | 541,110 | 48 | PRI | Kurume Univ. | 13 | 12,400 | 49 | O | Tokyo Metro. Org. for Med. Res. | 12 | 19,800 | 48 | PUB | Nagoya City Univ. | 38 | 61,000 |
| 50 | PUB | Osaka City Univ. | 376 | 553,000 | 50 | N | Fukui Med. Univ. | 312 | 562,770 | 50 | N | Yamanashi Med. Univ. | 12 | 32,900 | 49 | O | Saitama Cancer Center | 12 | 18,700 | 48 | N | Univ. of the Ryukyus | 38 | 41,300 |
| | | | | | 50 | N | Siga Univ. of Med. Sci. | 312 | 521,450 | 50 | N | Hirosaki Univ. | 12 | 27,700 | 49 | N | Gifu Univ. | 12 | 17,100 | | | | | |
| | | | | | | | | | | 50 | N | Saga Med. Sch. | 12 | 20,100 | 49 | PRI | Tohoku Pharm. Univ. | 12 | 15,100 | | | | | |
| | | | | | | | | | | 50 | N | Akita Univ. | 12 | 14,000 | | | | | | | | | | |
| | | Total | 56,694 | 116,032,950 | | | Total | 39,772 | 81,681,310 | | | Total | 8,363 | 17,768,770 | | | Total | 3,816 | 8,647,250 | | | Total | 4,743 | 7,935,620 |

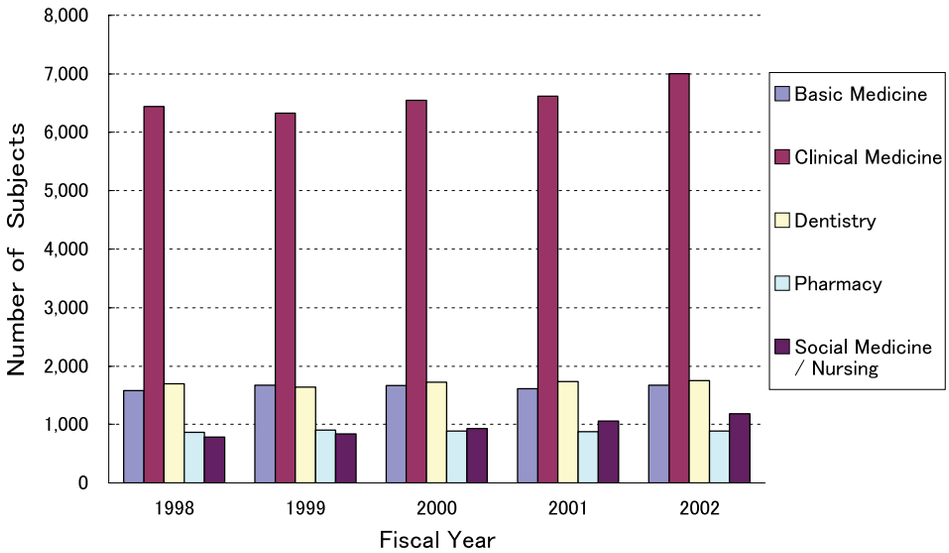


Fig. 5 Changes in number of subjects in the medicine classification.
(Basic Medicine includes physiology and pathology. Clinical Medicine includes internal medicine, surgery, and medicine in general).

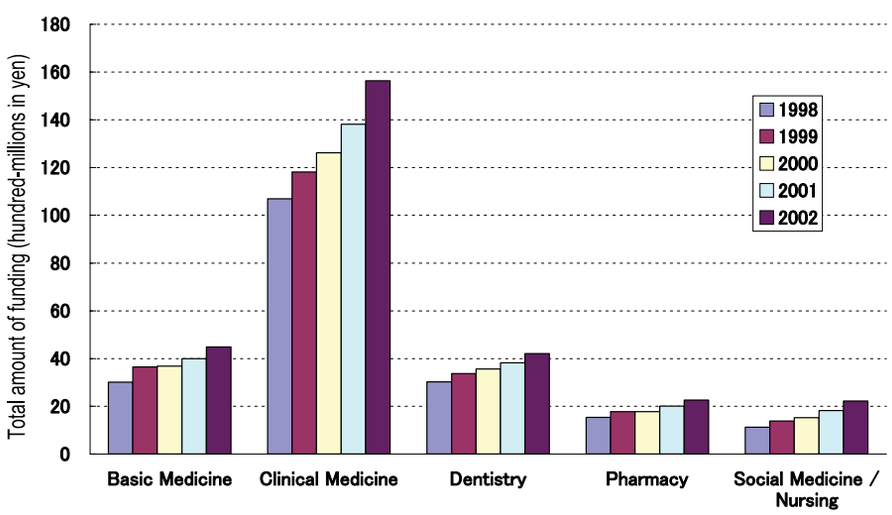


Fig. 6 Changes in funding for each area in medicine classification.
(Basic Medicine includes physiology and pathology. Clinical Medicine includes internal medicine, surgery, and medicine in general).

Fig. 10 shows the number of funded subjects for JSPS fellows per organization. This figure shows that the University of Tokyo has the predominant number of funded subjects, and Kyoto University is has the second largest. There is a large difference between the top group consisting of the former imperial universities and the Tokyo Institute of Technology and lower ranked organizations starting with Tsukuba University, Waseda University and Keio University. This figure shows the importance of the old imperial universities in training the researchers of our country.

(6) Large-scale Project Funds

Large-scale projects are funded with large grants called Scientific Research on Priority Areas and University and Society Collaboration, and huge grants

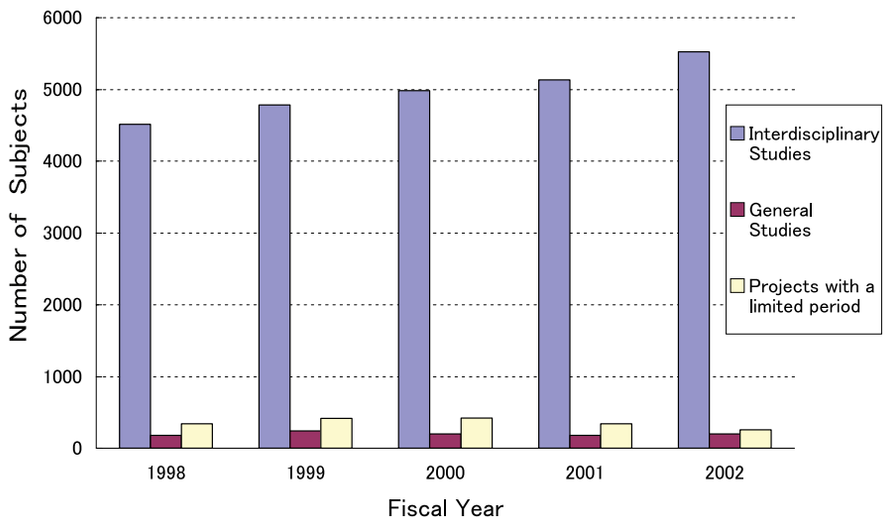


Fig. 7 Changes in number of subjects included in interdisciplinary studies / general studies / projects with a limited period classification.

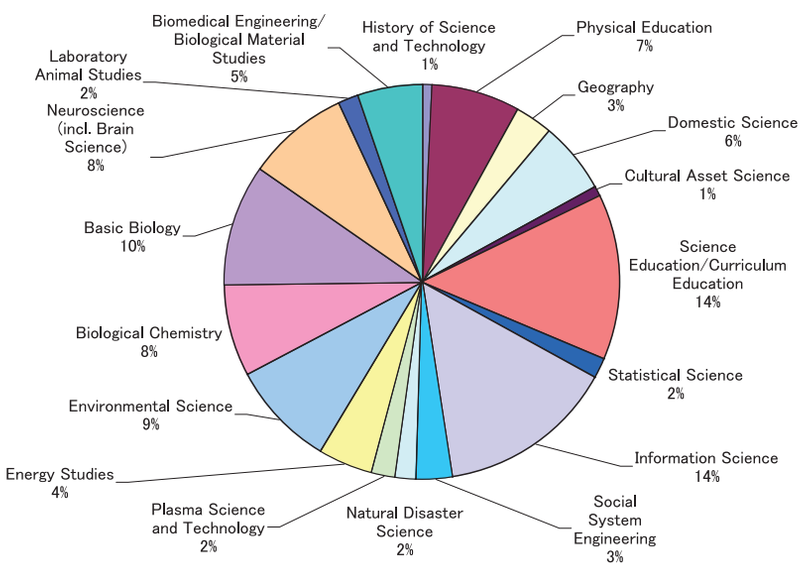


Fig. 8 Percentage of subjects in the interdisciplinary studies classification.

called Specially Promoted Research, Special Purpose Research, Creative Scientific Research (former Grants-in-Aid for New Program), and Center of Excellence (COE) Research. Since the project leaders of these research projects mostly belong to large national universities, many special research grants are allotted to the researchers in large national universities. In addition, large private universities are well represented, and some smaller universities are also highly ranked.

Fig. 11 shows the proportion of total budget broken down according to the above-stated research categories for FY 2001.

In the case of Scientific Research on Priority Areas, as shown in Fig. 12, large national universities such as the University of Tokyo and Kyoto University occupy the top ranks. However, certain research institutes or graduate school universities, for example, Okazaki National Research Institutes, the Institute of Physical and Chemical Research and Nara Institute of Science and Technology are ranked higher in this category than they

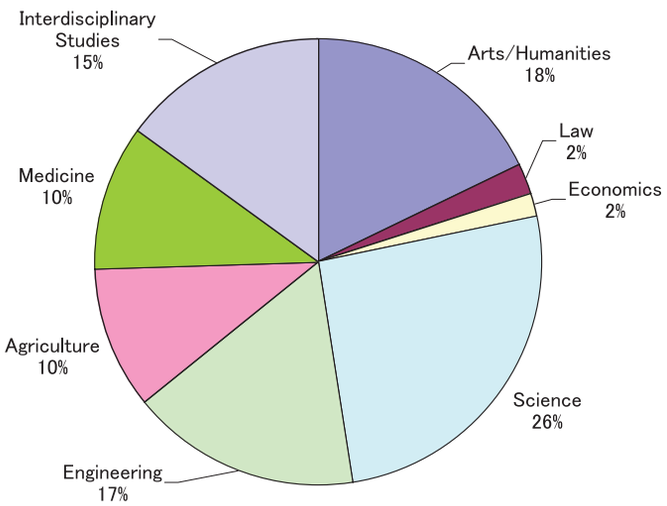


Fig. 9 Proportion of number of funded subjects for JSPS fellows broken down by research field (FY 2002).

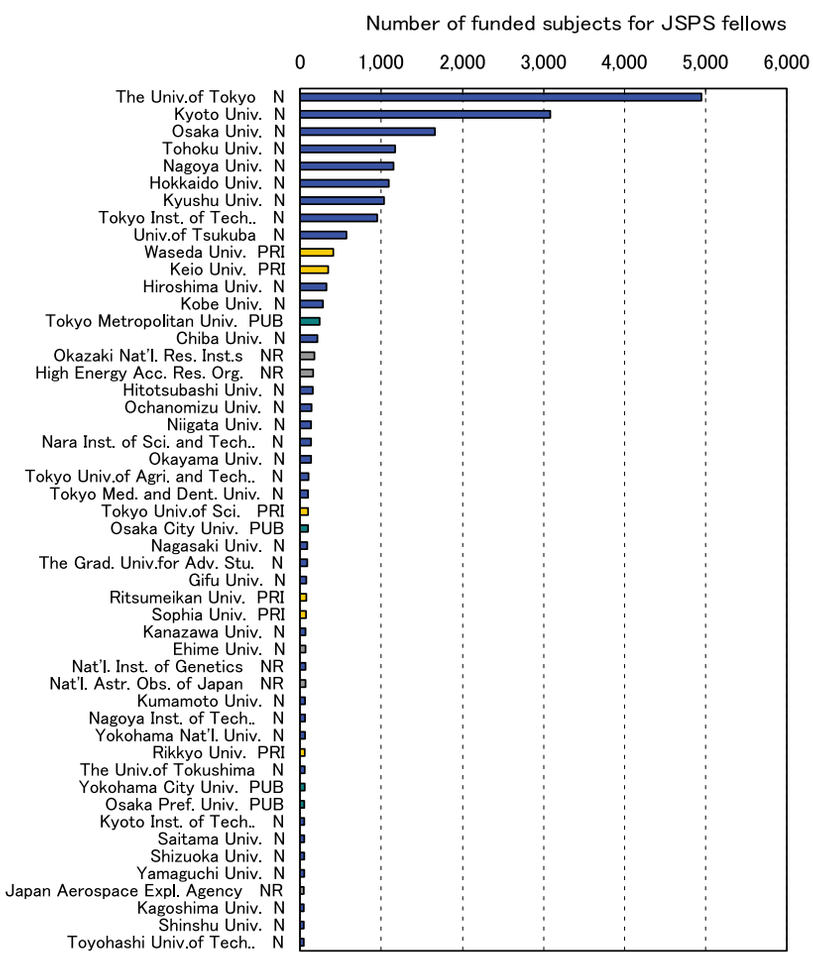


Fig. 10 Number of funded subjects for JSPS fellows by organization.

Table 8 Top 50 (30) organizations receiving grants for interdisciplinary and general studies.

| Interdisciplinary Studies Total of 5 years | | | | | The Top 30 in General Studies Total of 5 years | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Ranking | Classification | Uni. Name | The # of Projects | The amount of funding | Ranking | Classification | Uni. Name | The # of Projects | The amount of funding |
| 1 | N | The Univ. of Tokyo | 1,470 | 5,617,280 | 1 | N | The Univ. of Tokyo | 127 | 839,060 |
| 2 | N | Kyoto Univ. | 1,106 | 3,578,110 | 2 | N | Kyoto Univ. | 76 | 578,140 |
| 3 | N | Osaka Univ. | 1,095 | 3,277,680 | 3 | N | Hokkaido Univ. | 53 | 341,280 |
| 4 | N | Tohoku Univ. | 784 | 2,512,740 | 4 | N | Osaka Univ. | 36 | 234,760 |
| 5 | N | Univ. of Tsukuba | 729 | 1,694,090 | 5 | N | Nagoya Univ. | 32 | 177,970 |
| 6 | N | Nagoya Univ. | 728 | 2,164,910 | 6 | N | Tohoku Univ. | 30 | 173,290 |
| 7 | N | Kyushu Univ. | 670 | 1,742,030 | 7 | N | Kyushu Univ. | 23 | 103,200 |
| 8 | N | Tokyo Inst. of Tech. | 618 | 1,924,420 | 8 | N | Hiroshima Univ. | 22 | 112,560 |
| 9 | N | Hokkaido Univ. | 595 | 1,674,990 | 9 | PRI | Keio Univ. | 20 | 94,360 |
| 10 | N | Hiroshima Univ. | 544 | 1,015,060 | 10 | N | Tokyo Inst. of Tech. | 17 | 123,690 |
| 11 | O | The Inst. of Phys. and Chem. Res. | 350 | 698,600 | 10 | N | Kobe Univ. | 17 | 76,010 |
| 12 | N | Kobe Univ. | 301 | 692,080 | 12 | PUB | Tokyo Metro.Univ. | 16 | 88,440 |
| 13 | N | Nara Inst. of Sci. and Tech. | 259 | 662,990 | 13 | N | Okayama Univ. | 15 | 92,260 |
| 14 | N | Kanazawa Univ. | 230 | 614,270 | 14 | N | Univ. of Tsukuba | 14 | 52,600 |
| 15 | PRI | Waseda Univ. | 212 | 534,340 | 15 | PRI | Tokai Univeristy | 13 | 107,850 |
| 16 | NR | Okazaki Nat'l Res. Inst.s | 211 | 598,640 | 15 | N | Tokyo Univ. of Agri. and Tech. | 13 | 54,200 |
| 17 | N | The Univ. of Tokushima | 209 | 429,100 | 17 | NR | High Energy Accelerator Res. Org. | 12 | 95,650 |
| 18 | N | Kumamoto Univ. | 206 | 553,950 | 17 | N | Chiba Univ. | 12 | 76,360 |
| 19 | N | Shizuoka Univ. | 205 | 340,340 | 17 | N | Hitotsubashi Univ. | 12 | 76,070 |
| 20 | N | Okayama Univ. | 204 | 423,640 | 20 | NR | Okazaki Nat'l Res. Inst.s | 11 | 97,070 |
| 21 | N | Niigata Univ. | 201 | 426,980 | 20 | N | Gifu Univ. | 11 | 44,300 |
| 22 | N | Gunma Univ. | 197 | 400,880 | 22 | PRI | Waseda Univ. | 10 | 43,900 |
| 23 | N | The Univ. of Electro–Comm. | 196 | 316,900 | 22 | N | Tokyo Univ. of Foreign Studies | 10 | 41,900 |
| 24 | PRI | Keio Univ. | 190 | 496,900 | 22 | PUB | Osaka City Univ. | 10 | 32,300 |
| 25 | NR | Nat'l Inst. for Fusion Sci. | 186 | 388,190 | 25 | N | Tokyo Med. and Dental Univ. | 8 | 50,660 |
| 26 | N | Chiba Univ. | 185 | 324,920 | 25 | N | Nagoya Inst. of Tech. | 8 | 35,600 |
| 27 | N | Japan Adv. Inst. of Sci. and Tech. | 166 | 266,300 | 25 | N | Kumamoto Univ. | 8 | 32,100 |
| 28 | N | Tokyo Med. and Dental Univ. | 165 | 457,890 | 28 | N | Kagoshima Univ. | 7 | 46,840 |
| 29 | N | Shinshu Univ. | 158 | 277,020 | 28 | O | The Museum Archaeological Inst. of Kashihara, Nara Pref. | 7 | 41,100 |
| 30 | N | Kyushu Inst. of Tech. | 156 | 227,900 | 28 | N | Ibaraki Univ. | 7 | 39,880 |
| 31 | PUB | Tokyo Metro.Univ. | 152 | 343,830 | 28 | NR | Nat'l Astronomical Obs. of Japan | 7 | 30,620 |
| 31 | N | Tokyo Gakugei Univ. | 152 | 242,720 | 28 | N | Shizuoka Univ. | 7 | 24,400 |
| 33 | O | Tokyo Metro.Org. for Med. Res. | 149 | 456,750 | 28 | N | Hirosaki Univ. | 7 | 16,300 |
| 33 | N | Ehime Univ. | 149 | 321,600 | | | | | |
| 35 | PUB | Osaka City Univ. | 146 | 330,850 | | | | | |
| 36 | NR | Nat'l Inst. for Edu.Policy Res. | 142 | 342,050 | | | | | |
| 37 | N | Nara Women's Univ. | 141 | 330,460 | | | | | |
| 38 | N | Yamagata Univ. | 133 | 223,200 | | | | | |
| 39 | PRI | Tokyo Univ. of Sci. | 132 | 219,700 | | | | | |
| 40 | N | Mie Univ. | 131 | 256,500 | | | | | |
| 41 | N | Gifu Univ. | 128 | 320,920 | | | | | |
| 42 | PRI | Tokai Univeristy | 127 | 241,890 | | | | | |
| 43 | N | Yamaguchi Univ. | 126 | 215,740 | | | | | |
| 44 | N | Yokohama Nat'l Univ. | 123 | 231,160 | | | | | |
| 45 | PUB | Osaka Pref. Univ. | 122 | 246,900 | | | | | |
| 45 | N | Nagasaki Univ. | 122 | 219,400 | | | | | |
| 47 | N | Toyama Univ. | 120 | 187,420 | | | | | |
| 48 | PUB | Himeji Inst. of Tech. | 116 | 242,100 | | | | | |
| 49 | N | Ochanomizu Univ. | 113 | 251,220 | | | | | |
| 50 | J | Tsukuba College of Tech. | 107 | 155,600 | | | | | |
| | | | | | | | | | |
| | | Total | 24,946 | 57,002,740 | | | Total | 997 | 5,723,090 |

are in the general category of Scientific Research of Grants-in-Aid.

The Specially Promoted Research is for research regarded as likely to bring outstanding results and high evaluations at the international level. The funds for a research subject of this category are usually about 500 million yen. Fig. 13 shows the number of awarded subjects for each organization from FY 1998 to 2002. The University of Tokyo and Kyoto University have especially large numbers of funded subjects. In contrast, universities below the tenth rank are hardly represented. The number of subjects funded in this category is not proportional to the scale of the organization. It is obvious that the subjects in this category are awarded according to the individual researcher's achievement.

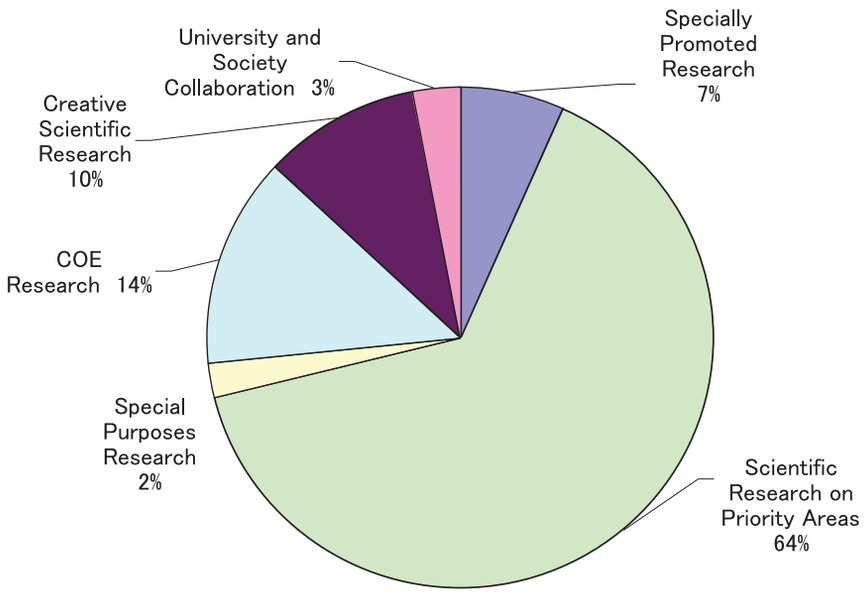


Fig. 11 Proportion of budget categories funded as Large-scale Projects (FY2001).

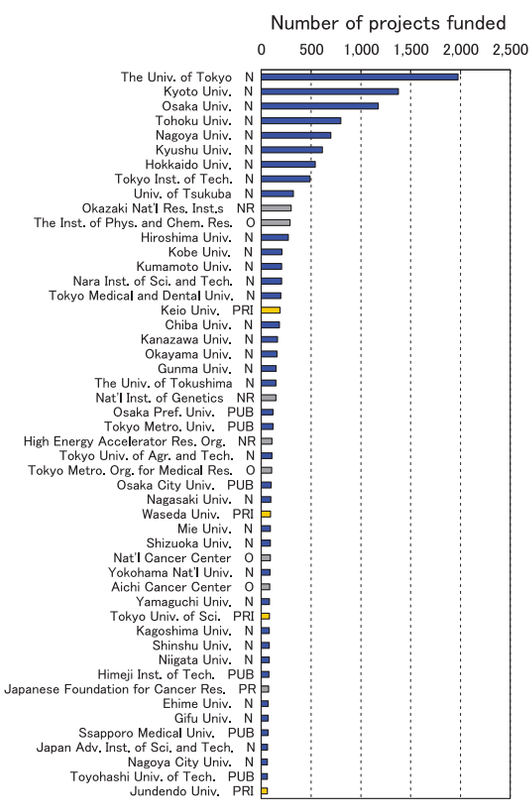


Fig. 12 Number of projects funded under Scientific Research on Priority Areas by organization (FY 1998—2002).

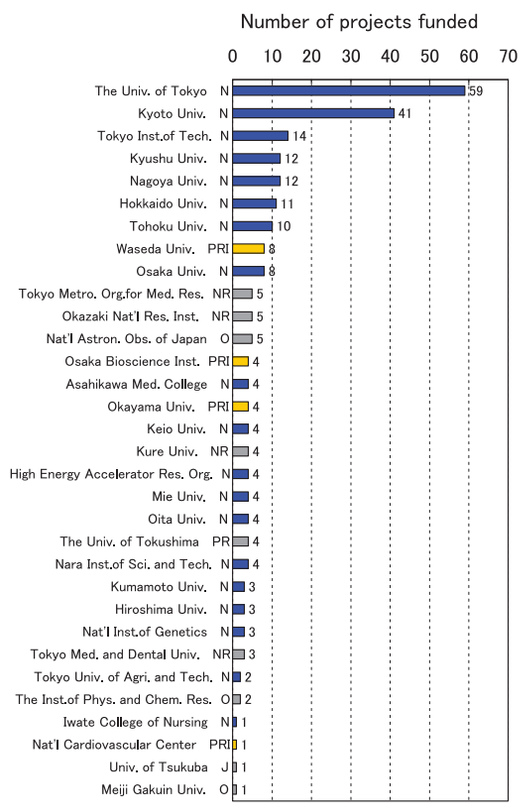


Fig. 13 Number of projects funded as Specially Promoted Research by organization (FY 1998—2002).

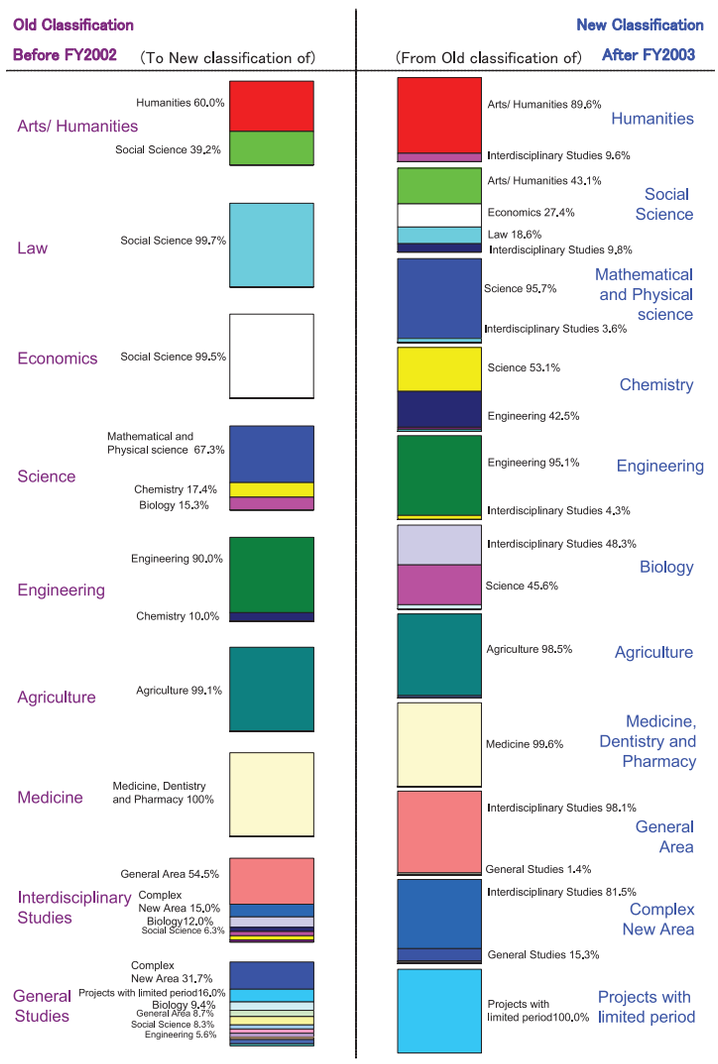


Fig. 14 Before and after the field classification change.

### 2.3 Situation in FY 2003 (after modification to field classification)

#### 2.3.1 Outline of general analysis

According to development of the science and technology, the research field codes of Grants-in-Aid for Scientific Research have been revised every five years. In middle of FY 2002, a large modification was undertaken in the research field codes in response to the reply of the Council for Science and Technology [4] of MEXT. A new revised table of research field codes was used for the application for FY 2003 research projects.

The table was changed from nine areas, which consist of seven traditional fields (literature, law, economics, science, engineering, agriculture and medical science) and interdisciplinary and general areas together, to four research areas of general / complex new areas, humanities and social science, science and engineering, and biosciences. The sub-areas increased from 243 to 278, meanwhile the grant categories and budget by category were left almost unchanged. The classification table for application in FY 2003 is shown in Appendix 2.

Using the database for FY 2003, the research projects that are designated a “continuation” from FY 2002 were extracted from the grant category (including Scientific Research, Grants-in-Aid for Young Scientists, and Exploratory Research) to which the application work fields are given. Fig. 14 shows the relationship between the situations before and after the field classification change based on number of “continuation” re-

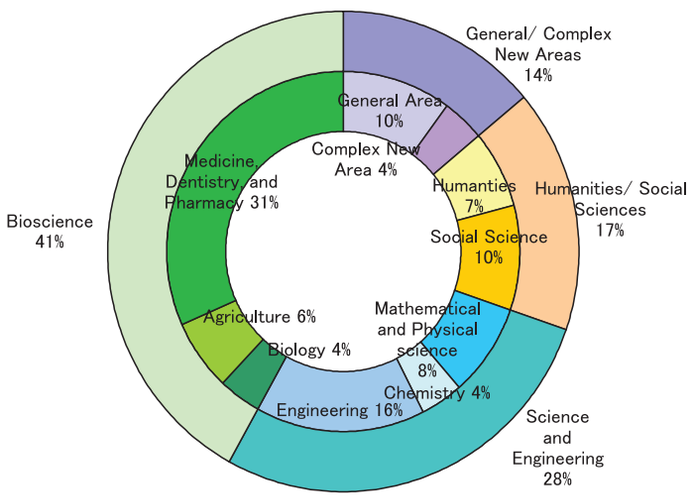


Fig. 15 Proportion of projects awarded in FY 2003 broken down by top class fields (outer) and specific area (inner).

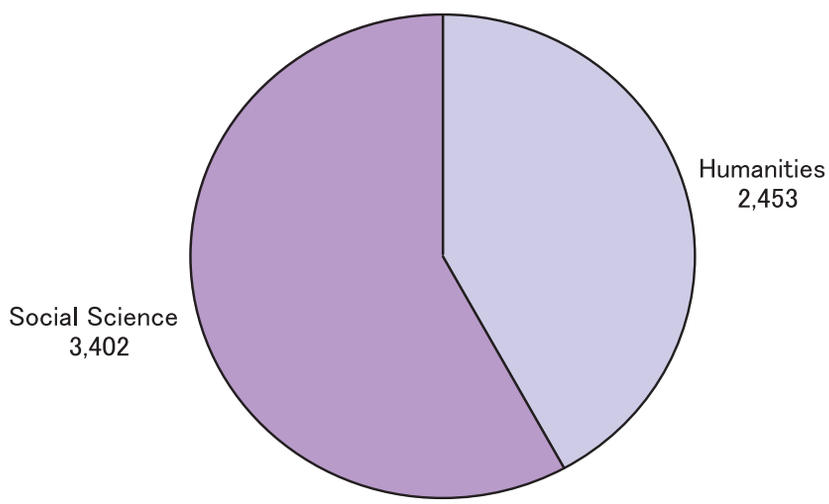


Fig. 16 Number of projects awarded in humanities/social sciences (2003 FY).

search projects. It shows the differences of the field classification in each area.

Fig. 15 shows the percentage of projects awarded in FY 2003 broken down by top class fields (outer) and specific area(inner).

### 2.3.2 Analysis of individual research areas

(1) Humanities and Social Sciences

In the humanities and social sciences, one of the major revisions was in the humanities classification. The fields of psychology and pedagogy (education) were shifted from the arts and humanities to the social sciences. Linguistics became a subfield in the humanities. Fig. 16 shows the number of funded projects broken down by subject in the humanities and social sciences in FY 2003.

(2) Sciences and Engineering

In science and engineering, one of the major revisions was in the sciences category. The classification "Biology" was changed to "Biosciences", "Chemistry" was identified as its own field, and "Applied Chemistry" and "Materials Science" became part of "Engineering". Fig. 17 shows the number of awarded projects broken down by field in science and engineering in FY 2003.

(3) Biosciences

Biosciences comprise biology, agriculture, medical

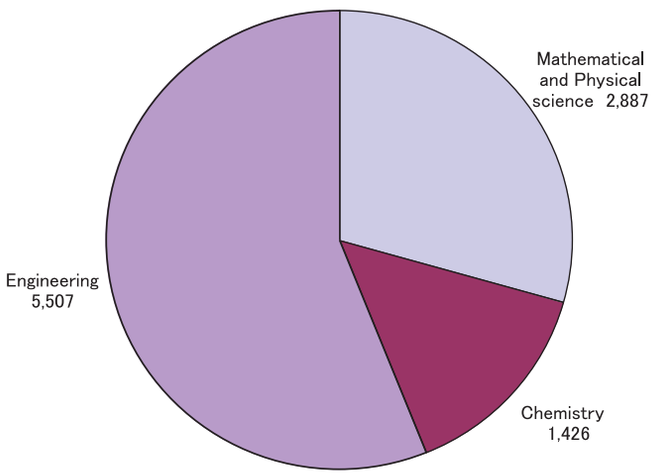


Fig. 17 Number of projects awarded in science and engineering (FY 2003).

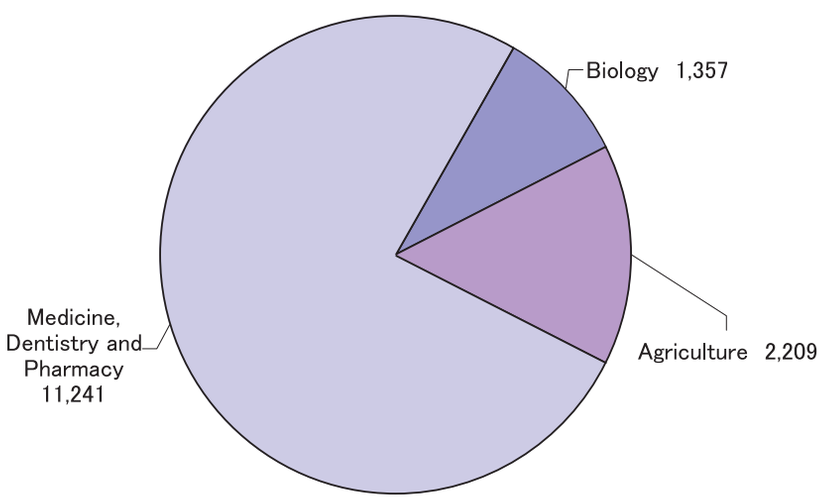


Fig. 18 Number of projects awarded in the Biosciences area (FY 2003).

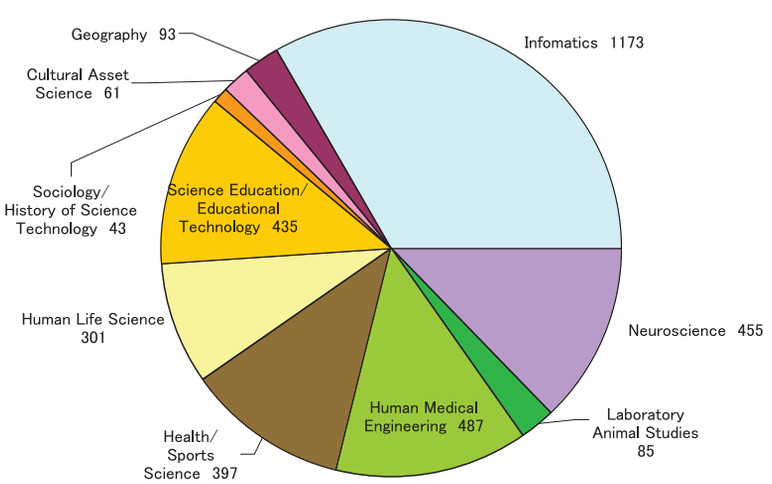


Fig. 19 Number of projects in the General area (FY 2003).

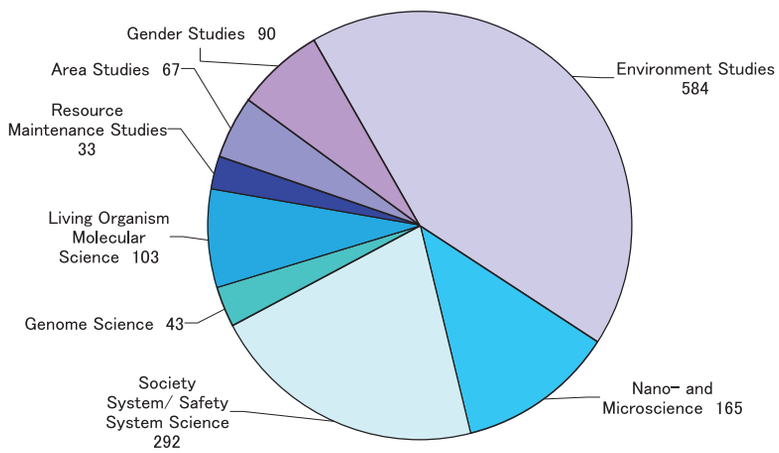


Fig. 20 Number of projects awarded in the Complex New areas (FY 2003).

science, dentistry, and pharmacy. The medical science category comprises basic medicine, internal medicine, and surgery. 31% of the total fund, which is the largest portion of the research budget, was allocated to the medical, dental, and pharmaceutical fields. Fig. 18 shows the number of projects awarded broken down by research field in the Biosciences area in FY 2003.

(4) General and Complex New Areas

The General and Complex New areas include subfields rearrangements of the previous Interdisciplinary Studies area. Figs. 19 and 20 show the breakdown of the General area and the Complex New research area. These areas include nano- and microsciences.

The total number of funded subjects in FY 2003 was tallied for each university and institute for new research fields and compared with the totals of 1998—2002 that were reported in the previous section and in NII Technical Reports. The results for the total number and amount of funds distributed by organization are also shown in the NII Technical Report. For more details, please refer to the NII Technical Report and related books. [6]–[18]

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Appendix 1　Research field classification table including the top and second level research areas for application in TY 2002.

| Research Area (Top level) | Subfield (Level 2) | No. of sub-area (level 3) |
|---|---|---|
| Arts/Humanities | Philosophy | 8 |
| | Psychology/Sociology/Pedagogy/Cultural Anthropology | 5 |
| | History | 4 |
| | Literature | 9 |
| Law | Law | 7 |
| Economics | Economics | 8 |
| Science | Mathematics | 5 |
| | Astronomy | 1 |
| | Physics | 5 |
| | Earth Science | 7 |
| | Chemistry | 6 |
| | Biology | 6 |
| | Anthropology (including Physiological Anthropology) | 1 |
| Engineering | Applied Physics/Engineering Basics | 5 |
| | Machanical Engineering | 7 |
| | Electric and Electronic Engineering | 7 |
| | Civil Engineering | 6 |
| | Architectonics | 4 |
| | Material Engineering | 6 |
| | Process Engineering | 5 |
| | Industrial Chemistry | 6 |
| | Integrated Engineering | 4 |
| Agriculture | Agriculture | 5 |
| | Agricultural Chemistry | 4 |
| | Forestry | 2 |
| | Fishery studies | 2 |
| | Agronomy | 1 |
| | Agricultural Engineering | 3 |
| | Livestock Science/Veterinary Medicine | 4 |
| | Boundary Agriculture | 2 |
| Medicine | Physiology | 6 |
| | Pathology | 6 |
| | Social Medicine | 3 |
| | Internal Medicine | 14 |
| | Surgery | 12 |
| | Dentistry | 8 |
| | Pharmacy | 5 |
| | Medicine in General | 4 |
| | Nursing Science | 2 |
| Interdisciprinary Studies | History of Science and Technology (including Sociology of Sciense/Basic Theory of Science and Technology) | 1 |
| | Physical Education | 1 |
| | Geography | 2 |
| | Domestic Science | 2 |
| | Cultural Asset Science | 1 |
| | Science Education/Curriculum Education | 4 |
| | Statistical Science | 1 |
| | Information Science | 3 |
| | Social System Engineering | 1 |
| | Natural Disaster Science | 1 |
| | Plasma Science and Technology | 1 |
| | Energy Studies | 3 |
| | Environmental Science | 3 |
| | Biological Chemistry | 3 |
| | Basic Biology | 4 |
| | Neuroscience (including Brain Science) | 4 |
| | Laboratory Animal Studies | 1 |
| | Biomedical Engineering/Biological Material Studies | 1 |
| General Studies | General Studies | 1 |

## Appendix 2 Research field classification tables for application in FY 2003.

[Interdisciplinary and New Area]

| Research Area | Subfield | No. of sub-area |
|---|---|---|
| General Area | Informatics | 11 |
| | Neuroscience | 4 |
| | Laboratory Animal Science | 1 |
| | Human Medical Engineering | 3 |
| | Health/Sports Science | 3 |
| | human life science | 2 |
| | Science Education/Educational Technology | 2 |
| | Sociology/History of Sience and Technology | 1 |
| | Cultural Asset Science | 1 |
| | Geography | 1 |
| Complex New Area | Enviroment Studies | 4 |
| | Nano/Micro Science | 3 |
| | Society/Safety System Science | 2 |
| | Genome Science | 2 |
| | Living Organism Molecular Science | 1 |
| | Resource Maintenance Studies | 1 |
| | Area Studies | 1 |
| | Gender Studies | 1 |

[Humanities and Social Sciences]

| Research Area | Subfield | No. of sub-area |
|---|---|---|
| Humanities | Philosophy | 6 |
| | Literature | 3 |
| | Linguistics | 5 |
| | History | 5 |
| | Human Geography | 1 |
| | Cultural Anthropology | 1 |
| Social Science | Law | 7 |
| | Politics | 2 |
| | Economics | 7 |
| | Business Administration | 3 |
| | Sociology | 2 |
| | Psychology | 4 |
| | Pedagogy | 4 |

[Science and Engineering]

| Research Area | Subfield | No. of sub-area |
|---|---|---|
| Mathematical and Physical science | Mathematics | 5 |
| | Astronomy | 1 |
| | Physics | 6 |
| | Earth Planet Science | 7 |
| | Plasma Science | 1 |
| Chemistry | Basic Chemistry | 3 |
| | Compound Chemistry | 6 |
| | Material Chemistry | 4 |
| Engineering | Applied Physics/Engineering Basics | 5 |
| | Mechanical Engineering | 7 |
| | Electric and Electronic Engineering | 7 |
| | Civil Engineering | 6 |
| | Architectonics | 4 |
| | Material Science | 6 |
| | Process Engineering | 4 |
| | Integrated Engineering | 7 |

[Biosciences]

| Research Area | Subfield | No. of sub-area |
|---|---|---|
| Biology | Basic Biology | 6 |
| | Biological Science | 7 |
| | Anthropology | 2 |
| Agriculture | Agriculture | 5 |
| | Agricultural Chemistry | 5 |
| | Forestry | 2 |
| | Fishery Studies | 2 |
| | Agronomy | 1 |
| | Agricultural Engineering | 3 |
| | Livestock Science/Veterinary Science | 5 |
| | Boundary Agriculture | 2 |
| Medicine, Dentistry, and Pharmacy | Pharmacy | 6 |
| | Basic Medicine | 13 |
| | Boundary Medicine | 3 |
| | Social Medicine | 3 |
| | Internal Clinical Medicine | 15 |
| | Surgical Clinincal Medicine | 13 |
| | Dentistry | 9 |
| | Nursing Science | 3 |