

Report on Results of the
Questionnaire on the World Premier International
Research Center Initiative

(Summary Edition)

November 2009

Mitsubishi Research Institute, Inc.

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Additional Data

Totals for Leading Scientists Only: Awareness and Knowledge

1 Survey Objectives and Overview

1-1 Survey Objectives

Research scientists in related fields of study were surveyed regarding each of the research centers in the World Premier International Research Center Initiative (WPI Program), for the purpose of determining whether each Center is becoming a “globally visible center” based on their awareness of it and other factors, and so that analysis of the survey results may help increase the visibility of the Centers.

1-2 Survey Implementation

1-2-1 How the survey was administered

Period: July 22, 2009, to September 24, 2009

Methods: Web-based questionnaire (in English)
Requesting participation by postal mail and e-mail

Table 1-1 Response Rate

	AIMR	iCeMS	IFReC	IPMU	MANA	Total	Overall
Survey requests	1,119	1,110	1,273	1,110	1,123	5,735	5,721
Valid responses	406	274	337	433	405	1,855	1,851
Response rate	36.3%	24.7%	26.5%	39.0%	36.1%	32.3%	32.4%

1-2-2 Selection of survey participants

1-2-2-1 Survey participants

Scientists in research areas related to the five Centers below selected for the 2007 fiscal year

- (1) Tohoku University Advanced Institute for Materials Research (AIMR)
- (2) The University of Tokyo Institute for the Physics and Mathematics of the Universe (IPMU)
- (3) Kyoto University Institute for Integrated Cell-Material Sciences (iCeMS)
- (4) Osaka University Immunology Frontier Research Center (IFReC)
- (5) National Institute for Materials Science, International Center for Materials Nanoarchitectonics (MANA)

1-2-2-2 Selection process

Group (1): Leading scientists

- Scientists identified by the program officers based on lists of researchers highly experienced in operations at research centers recommended by working group members (around 30 persons per Center)

Group (2): Authors of papers published by internationally known journals in Center-related areas

- Around 1,000 persons per Center
- Based on a list of journals recommended by working group members, the program officers decided the list of journals from which to select authors and the number of authors to be selected from each journal, in consultation with each Center. The selection was made based on these lists by the Japan Research Institute and Japan Society for the Promotion of Science.
- With some exceptions, general audience journals such as Nature and Science were excluded from the list of journals.

Excluded from selection list:

- Scientists belonging to host institutions of the five Centers (Group (2) only)
- Principal investigators at the five Centers
- Program committee members

- Program director and program officers
- Working group members
- Stakeholders of the five Centers (advisory board members, etc.)

1-2-2-3 Lists of international journals from which selection was made and numbers selected
Tohoku University Advanced Institute for Materials Research (AIMR)

	Name of Journal	Research Area	Note	Number Selected
0	Leading Scientists			35
1	Advanced Functional Materials	Materials		31
2	Advanced Materials	Materials		34
3	Angewandte Chemie International Edition	Chemistry		40
4	Applied Physics Letters		Nanoscale science and design	33
			Device physics	33
			Structural, mechanical, thermodynamic, and optical properties of condensed matter	30
			Electronic transport and semiconductors	33
			Interdisciplinary and general physics	31
			Total	160
5	Journal of the American Chemical Society	Chemistry		32
6	Nature Materials	Materials		30
7	Physical Review B	Condensed matter physics		33
8	Physical Review Letters		Condensed matter: electronic properties, etc.	46
			Condensed matter: structure, etc.	43
			Total	89
9	Chemical Communications	Chemistry		25
10	Nano Letters	Nanoscience		34
11	Acta Materialia	Physics		25
12	Chemistry of Materials	Materials (general)		40
13	Journal of Applied Physics		Structural, mechanical, thermodynamic, and optical properties of condensed matter	49
			Electronic transport and semiconductors	34
			Magnetism and superconductivity	31
			Total	114
14	Journal of Materials Chemistry			30
15	Inorganic Chemistry			32

16	Journal of Crystal Growth			30
17	Solid State Communications			30
18	Surface Science			32
19	Metallurgical and Materials Transactions A			31
20	The Journal of Physical Chemistry B		Macromolecules, soft matter	32
			Surfactants, membranes	39
			Total	71
21	Japanese Journal of Applied Physics		Semiconductors	7
			Electrical properties of condensed matter	11
			Structure and mechanical and thermal properties of condensed matter	7
			Nano science and technologies	10
			Total	35
22	Europhysics Letters		Condensed matter: structural, mechanical and thermal properties	40
			Condensed matter: electronic structure, electrical, magnetic and optical properties	41
			Total	81
23	Journal of the Physical Society of Japan		Condensed matter: structure and mechanical and thermal properties	14
			Condensed matter: electronic structure and electrical, magnetic, and optical properties	11
			Total	25
				1,119

The University of Tokyo Institute for the Physics and Mathematics of the Universe (IPMU)

	Name of Journal	Research Area	Note	Number Selected
	Leading Scientists			30
1	Monthly Notices of the Royal Astronomical Society	Astronomy, astrophysics and cosmology		39
2	The Astronomical Journal	Astronomy, astrophysics and cosmology		44
3	Astronomy and Astrophysics	Astronomy, astrophysics and cosmology		44
4	The Astrophysical Journal Letters	Astronomy, astrophysics and cosmology		55
5	The Astrophysical Journal	Astronomy, astrophysics and cosmology		63
6	Physical Review Letters	Astronomy, astrophysics and cosmology	Gravitation and astrophysics	57
7	Journal of High Energy Physics	Particle physics		83
8	Nuclear Physics B	Particle physics		85
9	Physical Review D	Particle physics		86
10	Physics Letters B	Particle physics		88
11	Physical Review Letters	Particle physics	Elementary particles and fields	80
12	Journal of Physics A	Mathematical and theoretical physics		40
13	Journal of Mathematical Physics	Mathematical physics		28
14	Communications in Mathematical Physics	Mathematical physics		56
15	Journal of Geometry and Physics	Mathematical physics		27
16	Annali Mathematica Pure ed Applicata	Mathematics		58
17	Annals of Mathematics	Mathematics		47
18	Journal of American Mathematical Society	Mathematics		55
19	Inventiones mathematicae	Mathematics		45
				1,110

Kyoto University Institute for Integrated Cell-Material Sciences (iCeMS)

	Name of Journal	Research Area	Note	Number Selected
	Leading Scientists			36
1	Biomacromolecules	Materials sciences		53
2	Biomaterials	Biomaterials		55
3	Biophysical Journal	Biophysics		57
4	Cell	Broad biomedical research		105
5	Cell Stem Cell	Stem cell research		53
6	EMBO Journal	Cell biology		52
7	Journal of Controlled Release	Drug delivery		50
8	Journal of The American Chemical Society	General chemistry		52
9	Nature Biotechnology	Biotechnology		103
10	Nature Cell Biology	Cell biology		108
11	Nature Chemical Biology	Chemical biology		69
12	Nature Materials	Material science		52
13	Nature Medicine	Biomedical research		106
14	Nature Nanotechnology	Nanotechnology		51
15	Small	Chemistry		54
16	Stem Cells	Stem cell		54
				1,110

Osaka University Immunology Frontier Research Center (IFReC)

	Name of Journal	Research Area	Note	Number Selected
0	Leading Scientists			55
1	Blood			62
2	Cell	Biology in general		16
3	Immunity	Immunology		96
4	Journal of Experimental Medicine	Immunology		97
5	Journal of the American Chemical Society	Imaging biology and technology		21
6	Magnetic Resonance Imaging	Imaging biology and technology		25
7	Magnetic Resonance in Medicine	Imaging biology and technology		20
8	Molecular and Cellular Biology	Molecular and cell biology		52
9	Molecular Biology of the Cell	Molecular and cell biology		64
10	Nano Letters	Imaging biology and technology		15
11	Nature			40
12	Nature Biotechnology	Imaging biology and technology		19
13	Nature Cell Biology	Cell biology		103
14	Nature Immunology	Immunology		100
15	Nature Medicine	Medical science		54
16	Nature Reviews Immunology	Immunology		56
17	NMR in Biomedicine	Imaging biology and technology		22
19	The Journal of Cell Biology	Cell biology		60
20	The Journal of Clinical Investigation			54
21	The Journal of Immunology	Immunology		200
22	Proceedings of the National Academy of Sciences of the United States of America		Immunology	42
				1,273

National Institute for Materials Science
International Center for Materials Nanoarchitectonics (MANA)

	Name of Journal	Research Area	Note	Number Selected
0	Leading Scientists			29
1	ACS Nano	Nanoscience		29
2	Advanced Materials	Chemistry and physics of materials (general)		25
3	Applied Physics Express (APEX)	Applied physics (general)		17
4	Applied Physics Letters	Applied physics (general)	Electronic transport and semiconductors	20
			Magnetism and superconductivity	5
			Nanoscale science and design	17
			Applied biophysics	5
			Total	47
5	Applied Surface Science	Surface science		30
6	Chemical Physics Letters	General chemistry		20
7	Chemistry of Materials	Materials (general)		20
8	Europhysics Letters	Physics (general)	Condensed matter: structural, mechanical and thermal properties	11
			Condensed matter: electronic structure, electrical, magnetic and optical properties	4
			Interdisciplinary physics and related areas of science and technology	7
			Total	22
9	Inorganic Chemistry	Inorganic materials (general)		41
10	Japanese Journal of Applied Physics	Applied physics (general)	Superconductors	2
			Magnetism	1
			Optics and quantum electronics	3
			Electrical properties of condensed matter	13
			Surfaces, interfaces, and films	1
			Instrumentation, measurement, and fabrication technology	2
			Applied bioscience	1
			Nano science and technologies	10
Total	33			
11	Journal of Crystal Growth	Materials (general)		23
12	Journal of Magnetism and Magnetic Materials	Magnetism		20

13	Journal of Physics and Chemistry of Solids	Physical chemistry (general)		30
14	Journal of Physics Condensed Matter	Physics (general)		30
15	Journal of the Physical Society of Japan	General physics	Condensed matter: structure and mechanical and thermal properties	14
			Condensed matter: electronic structure and electrical, magnetic, and optical properties	11
			Cross-disciplinary physics and related areas of science and technology	5
			Total	30
16	Journal of Physical Chemistry C	Physical chemistry (general)		25
17	Journal of the American Ceramic Society	Ceramic science		15
18	Journal of The American Chemical Society	General chemistry		42
19	Journal of Vacuum Science and Technology A	Vacuum related topics		10
20	Journal of Vacuum Science and Technology B	Vacuum related topics		10
21	Langmuir	Surface and interface chemistry		38
22	Macromolecules	Macromolecules, polymers		41
23	Nano Letters	Nanoscience		54
24	Nanotechnology	Nanotechnology general		50
25	Nature Materials	Materials science and technology (general)		20
26	Nature Nanotechnology	Materials science nanotechnology		13
27	Physical Review B	General physics		40
28	Physical Review Letters	General physics	Condensed matter: structure, etc.	25
			Condensed matter: electronic properties, etc.	32
			Soft matter, biological, and interdisciplinary physics	7
			Total	64
29	Physica Status Solidi (c)	Physics		28
30	Solid State Communications	Condensed matter science		20
31	Surface Science	Surface science		23

32	The Journal of Physical Chemistry B	Soft condensed matter	Macromolecules, soft matter	19
			Biophysical chemistry	14
			Total	33
33	Angewante Chemie International Edition	Chemistry (general)		35
34	Journal of Materials Chemistry	Chemistry, materials (general)		30
35	Green Chemistry	Green chemistry		32
36	Journal of the Electrochemical Society	Electrochemistry		27
37	Enviromental Science & Technology	Enviromental science		27
				1,123

2 Survey Results

Aggregate results of the survey are shown below. Although in principle the questions were asked about each Center, questions for Respondent Attributes (2-1) and About the WPI Program (2-7) were asked of each respondent only one time, even those who were asked about multiple Centers; accordingly, only the overall answers are indicated.

2-1 Respondent Attributes

The attributes of respondents are as indicated below. Most commonly a respondent was a “principal investigator or group leader”; there were few post-doctoral or student respondents.

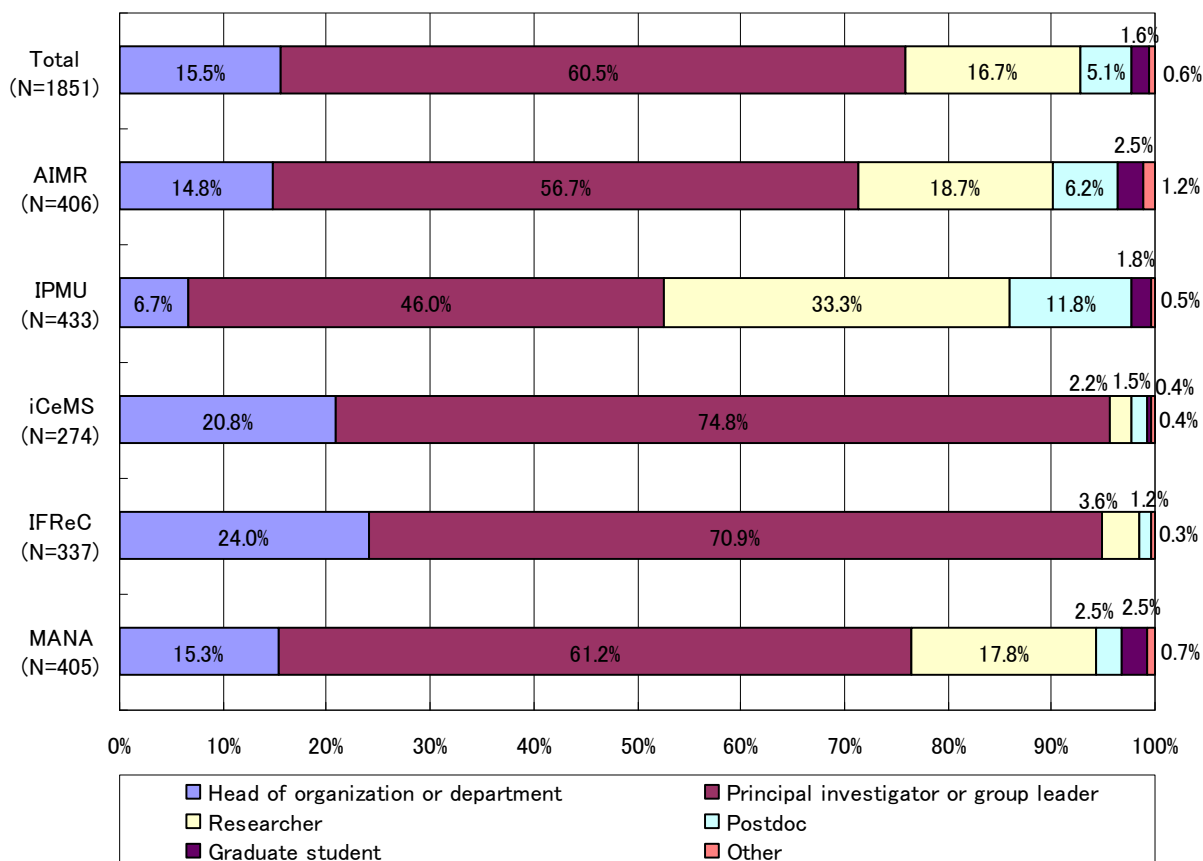


Figure 2-1 Your Position

Most of the respondents were tenured.

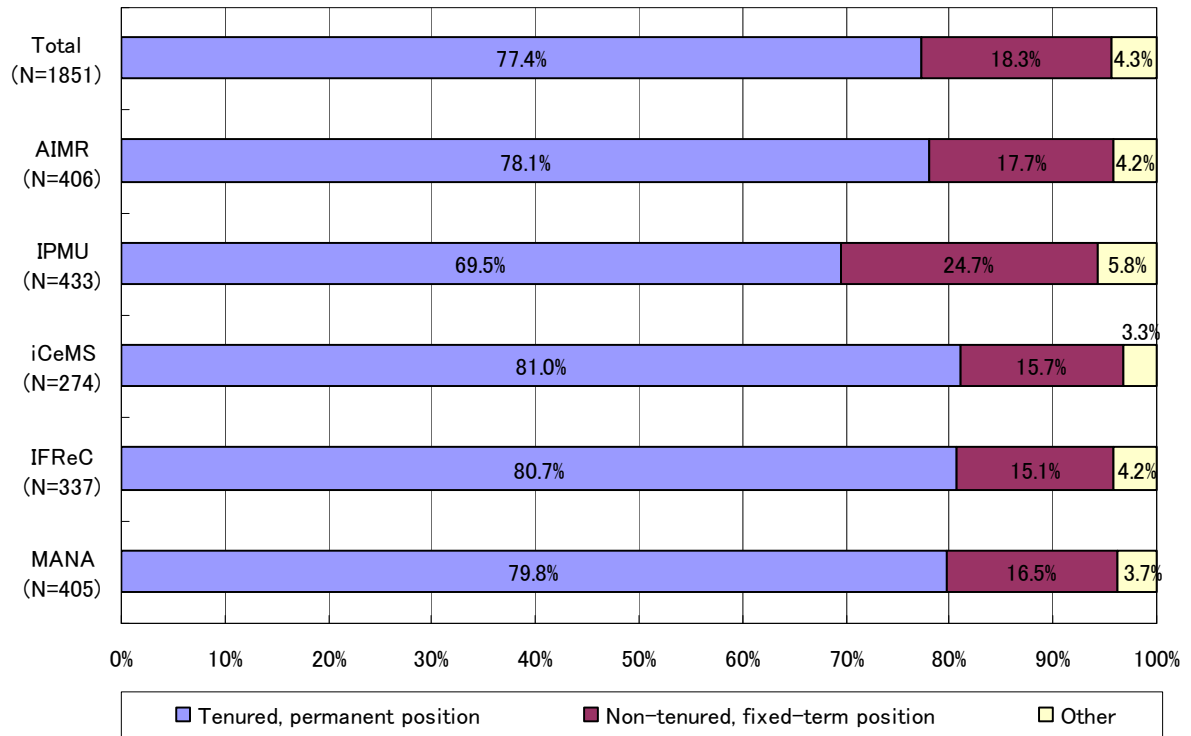


Figure 2-2 Your Status

Most (three-fourths) of the respondents were affiliated with a university, followed by public research institutes. Very few worked in private-sector corporations.

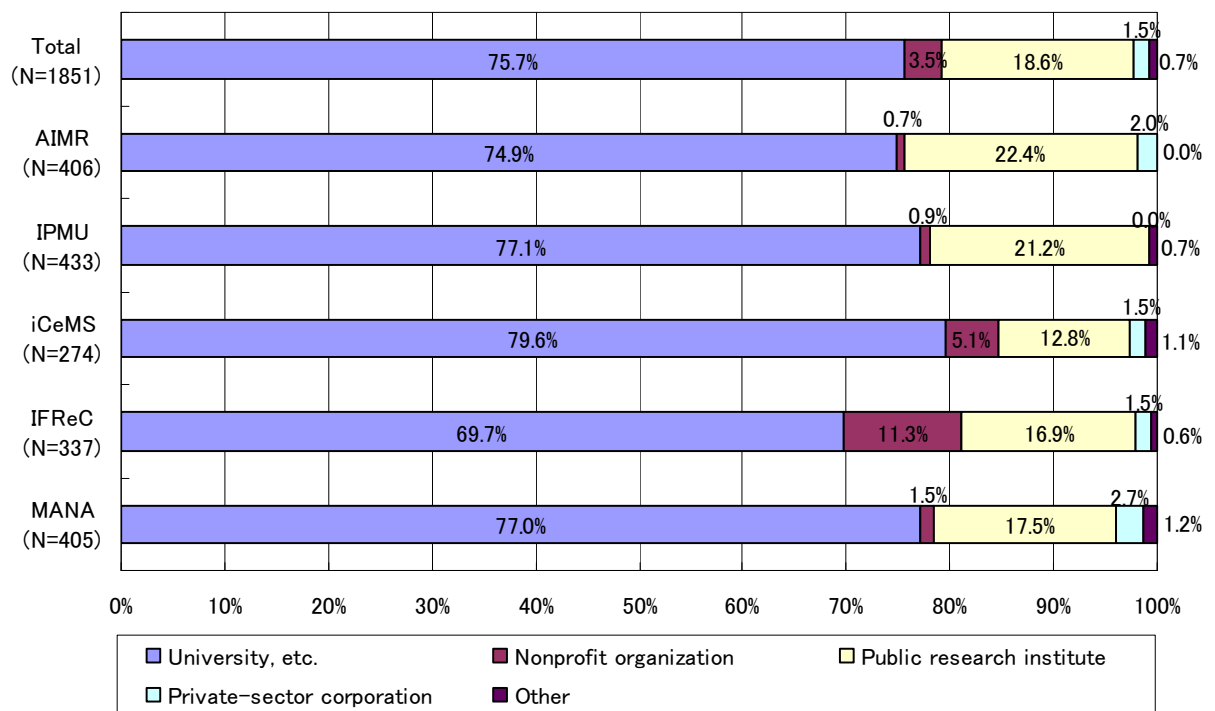


Figure 2-3 Your Affiliation

Among their main research areas, the most common were material science, nanoscience, immunology, chemistry, theoretical particle/nuclear physics, and molecular and cellular biology.

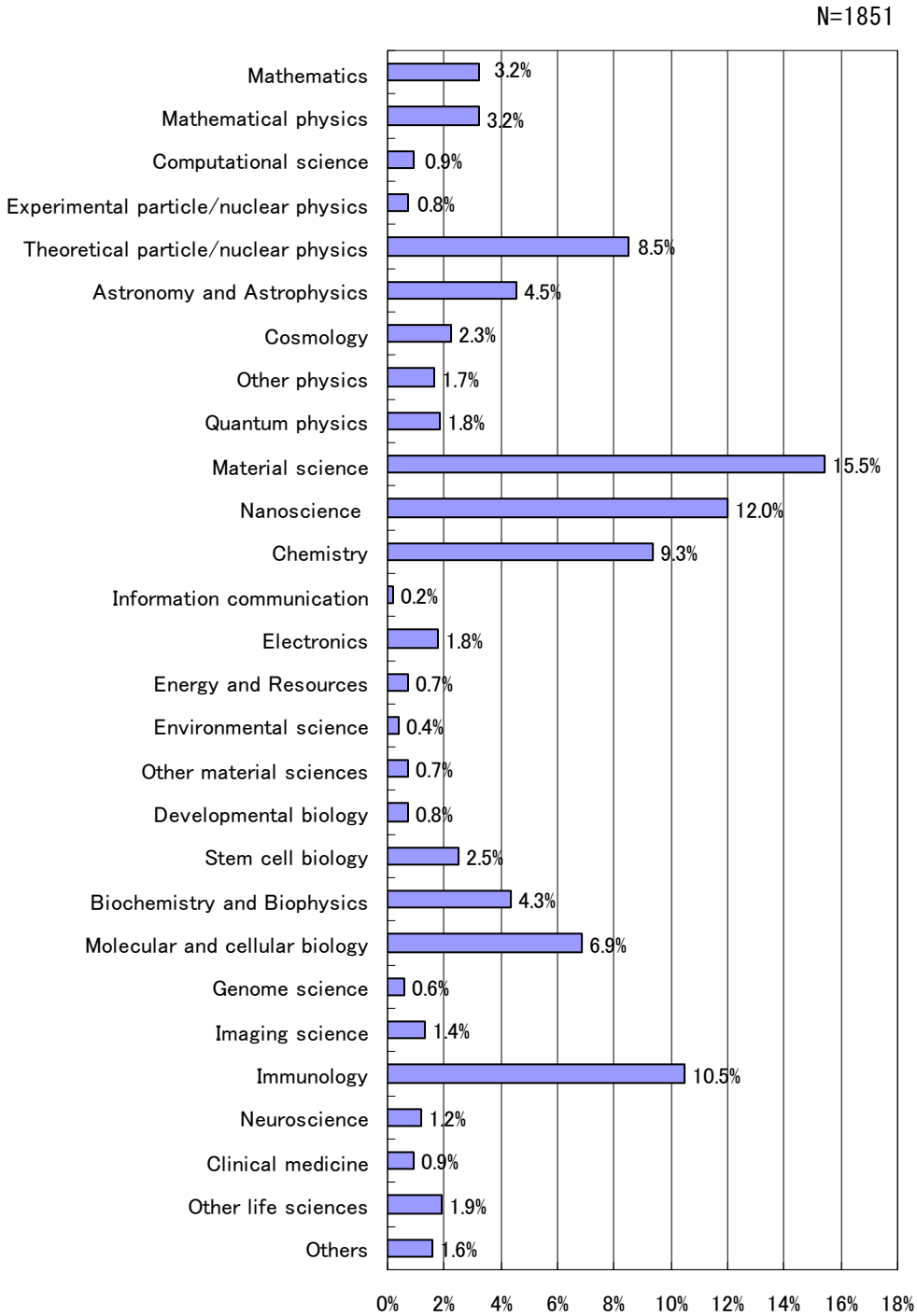


Figure 2-4 Your Main Research Area

Among nationalities (multiple responses), American was most common at more than a fourth. Around 10 percent were Japanese.

Taiwan was most common of the “other” responses, while Argentina, Brazil, Finland, Greece, Poland, and Singapore were also among the represented nationalities.

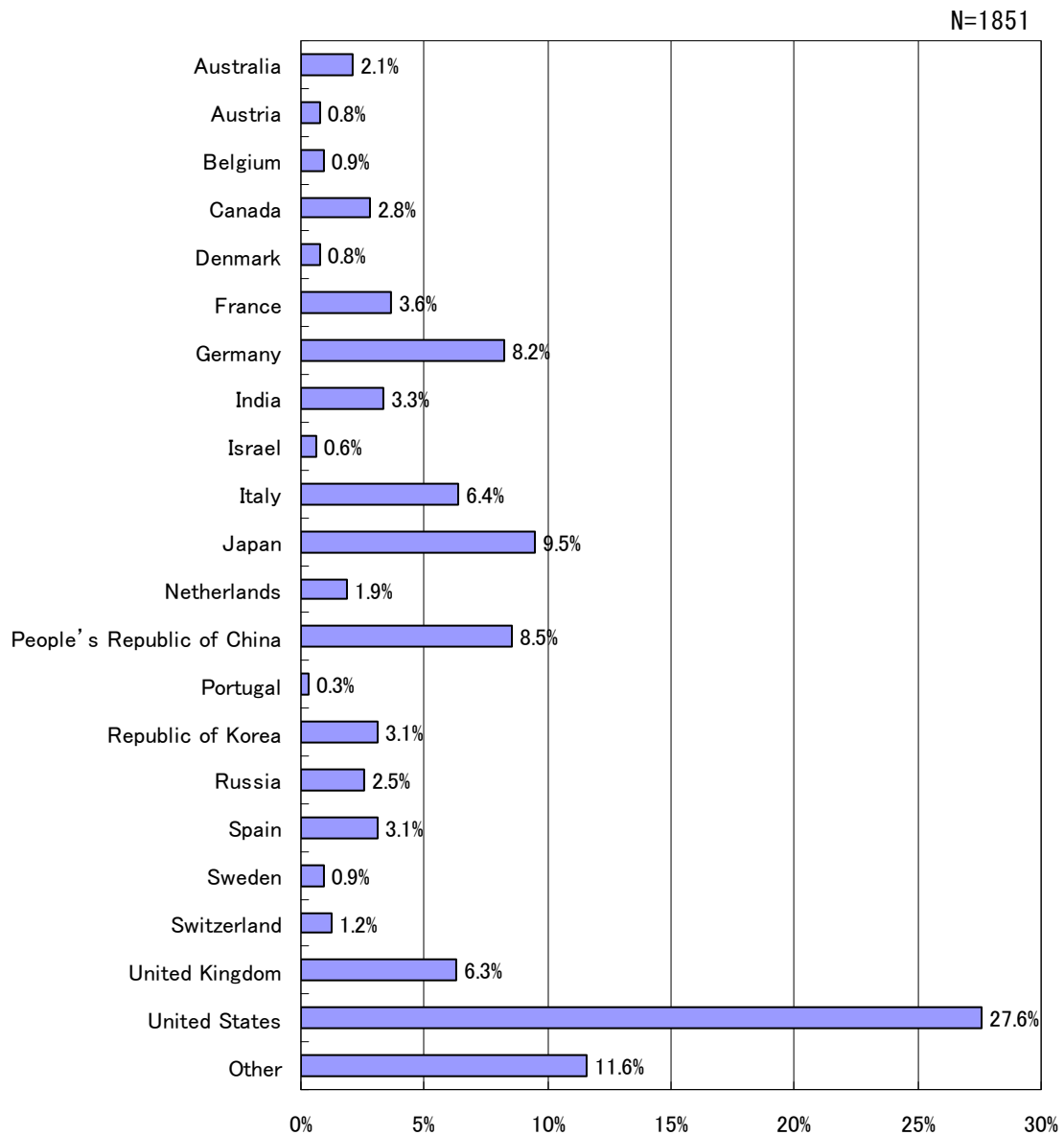


Figure 2-5 Your Nationality

Of the countries where respondents performed research work, again the United States was most common at more than two-thirds, followed by Germany, the United Kingdom, and France. More than 20 percent indicated experience in Japan.

It should be noted, however, that these figures include the country of origin and countries where the scientist holds nationality.

In the “other” category Singapore and Taiwan had the most mentions, while Brazil, Chile, Finland, Greece, Ireland, and Poland were among the other countries cited.

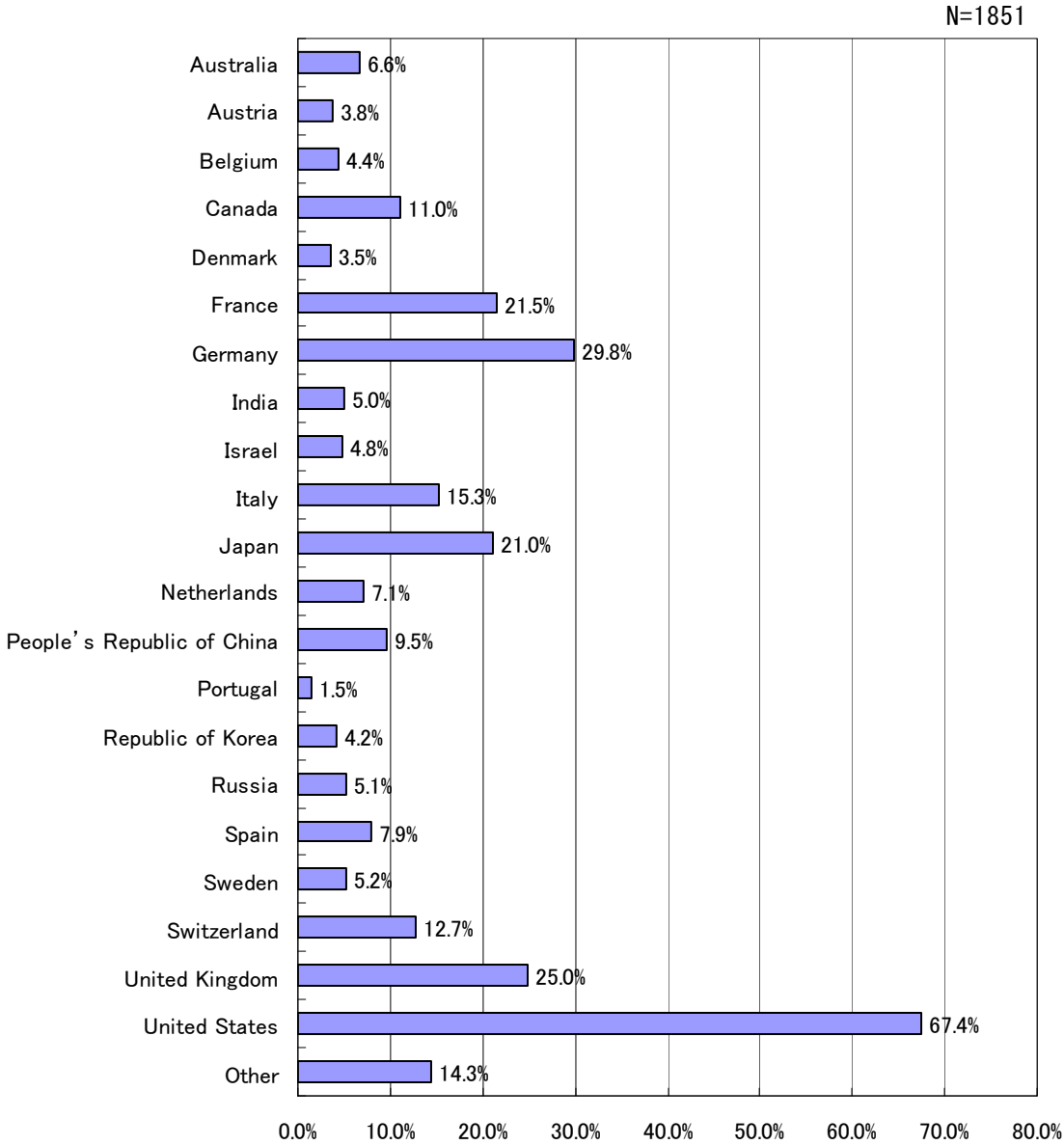


Figure 2-6 Countries Where You Have Performed Research

 2-2 Advanced Institute for Materials Research (AIMR)

2-2-1 Main research area, nationality, and research countries of respondents

The main research areas of respondents, their nationalities, and countries where they have performed research are as indicated below.

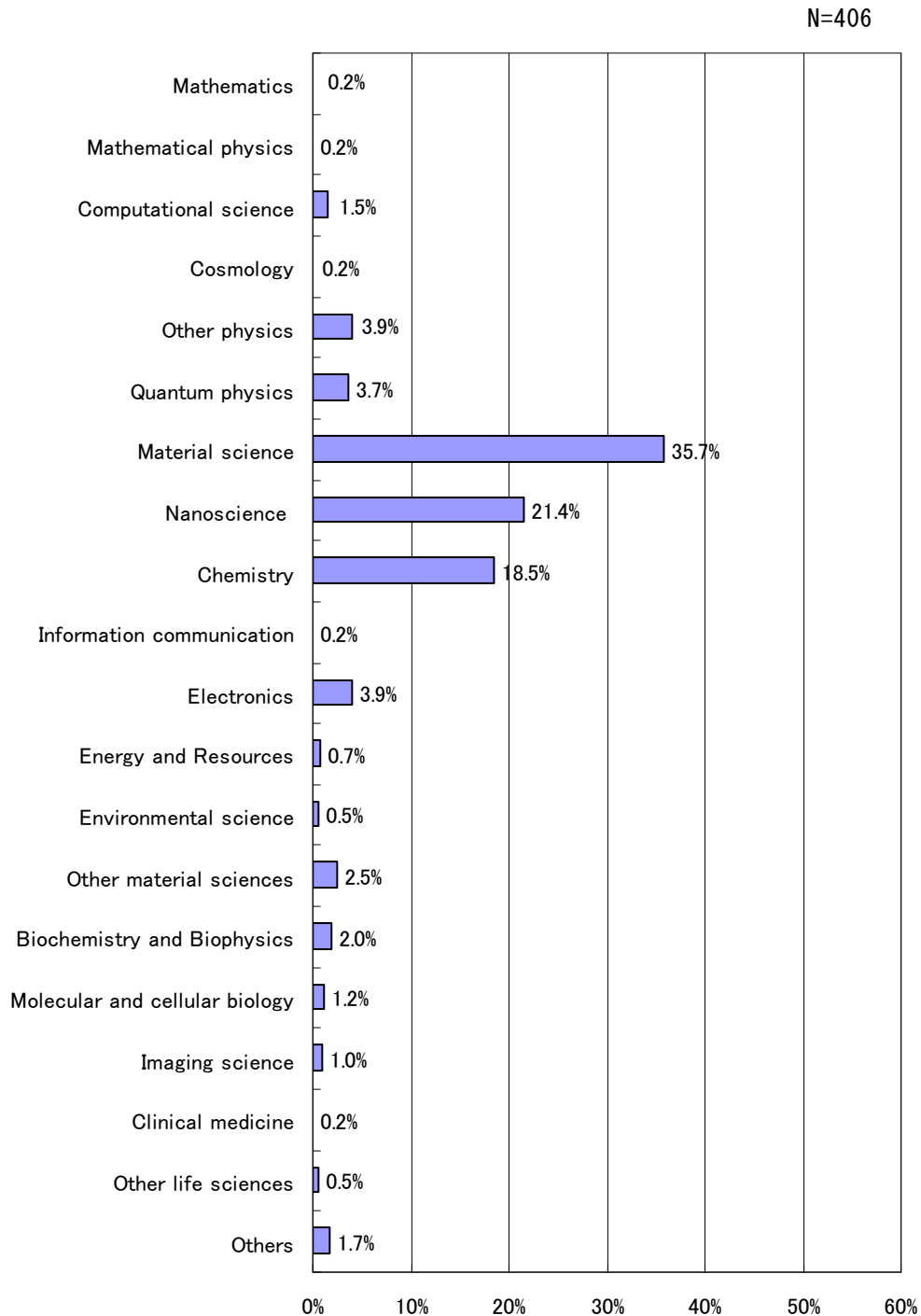


Figure 2-7 Your Main Research Area

N=406

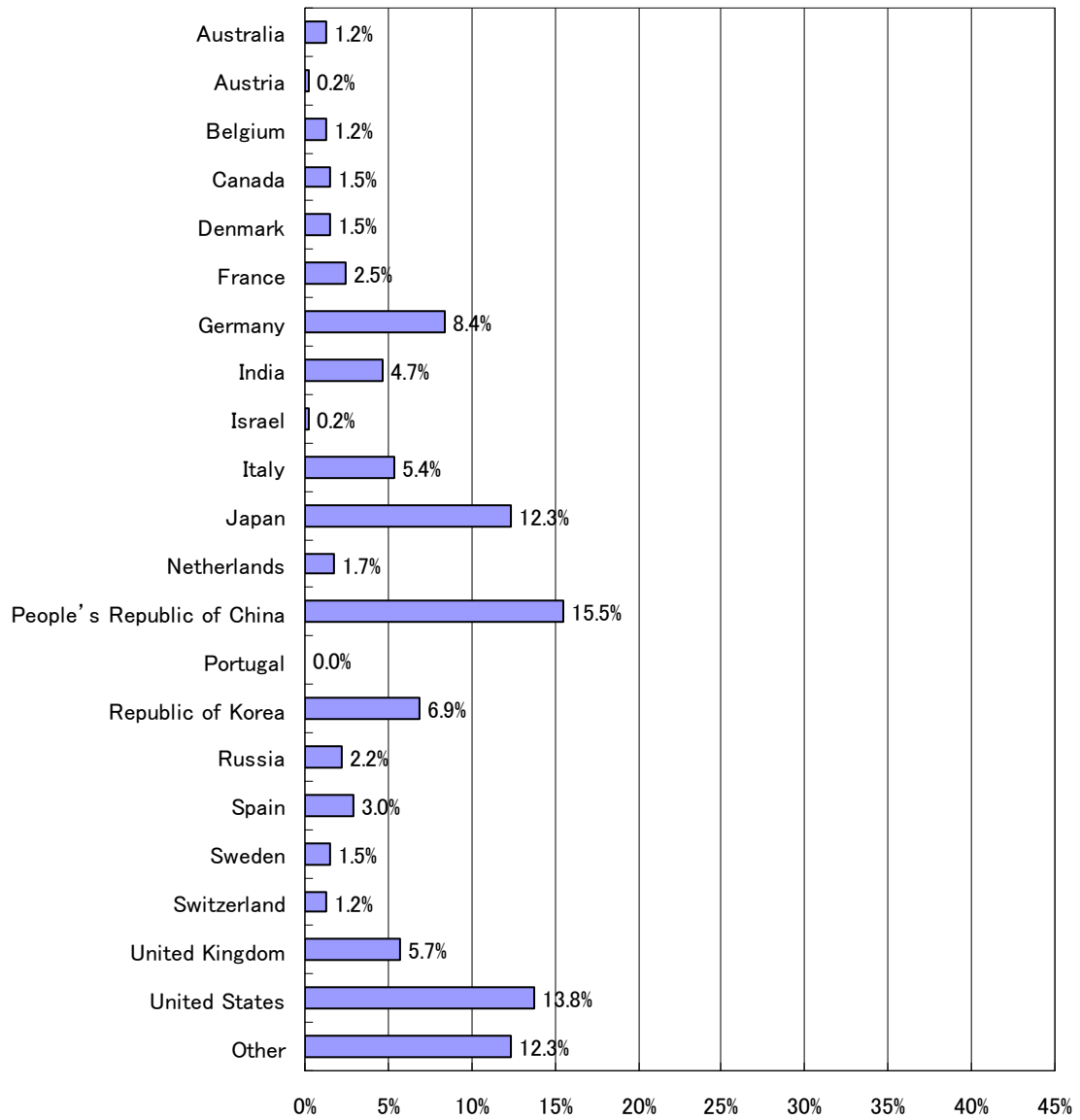


Figure 2-8 Your Nationality

N=406



Figure 2-9 Countries Where You Have Performed Research

2-2-2 Awareness and knowledge of the WPI Center

Nearly half of the respondents said they did not know about the Center. The most common items known were, in order, the name of the Center, the WPI Program, and the nature of the research. The director's name was the least commonly known item.

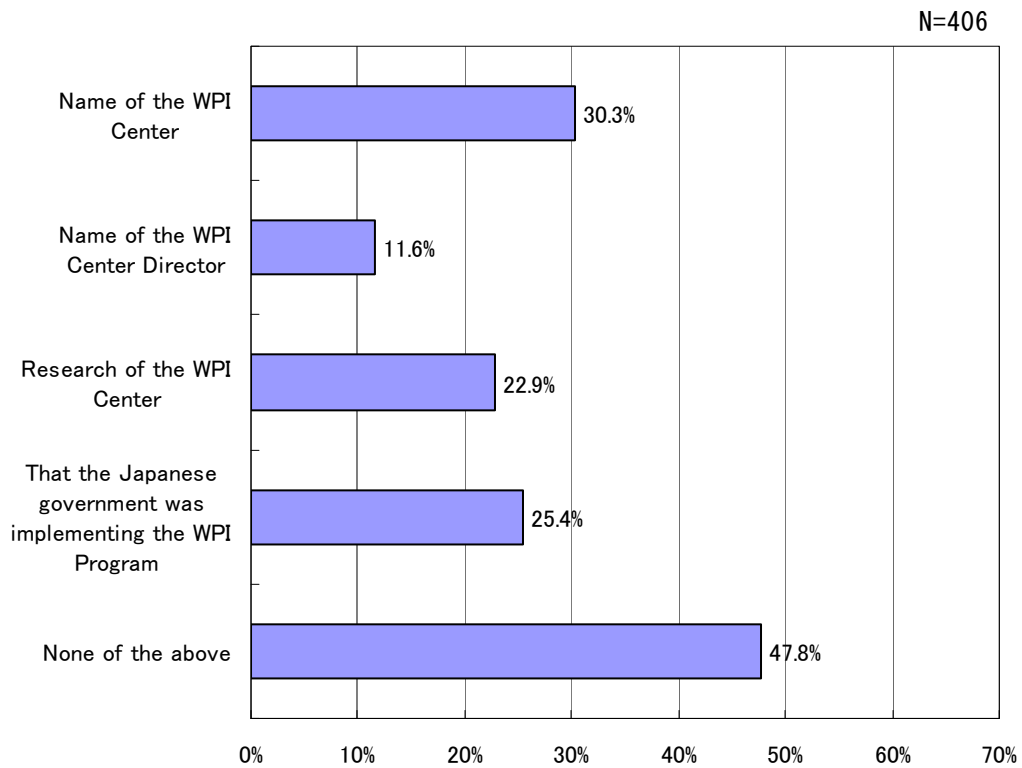


Figure 2-10 Before receiving this questionnaire, which of the following did you know about the WPI Center?

Responses by research areas for which there were 40 or more respondents were as follows.

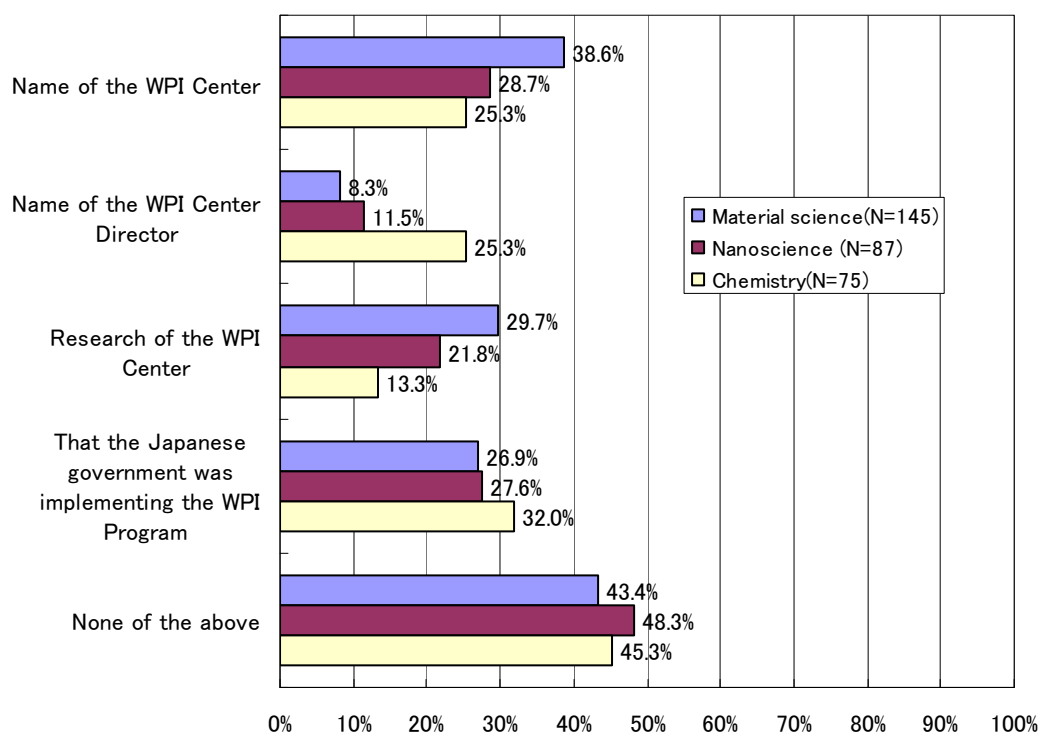


Figure 2-11 Before receiving this questionnaire, which of the following did you know about the WPI Center? (by main research area)

When those that knew about the Center were asked about the initial source of their knowledge, the results were as follows.

The most frequent response was “mentioned in academic paper or other publication; profiled in scientific journal.”

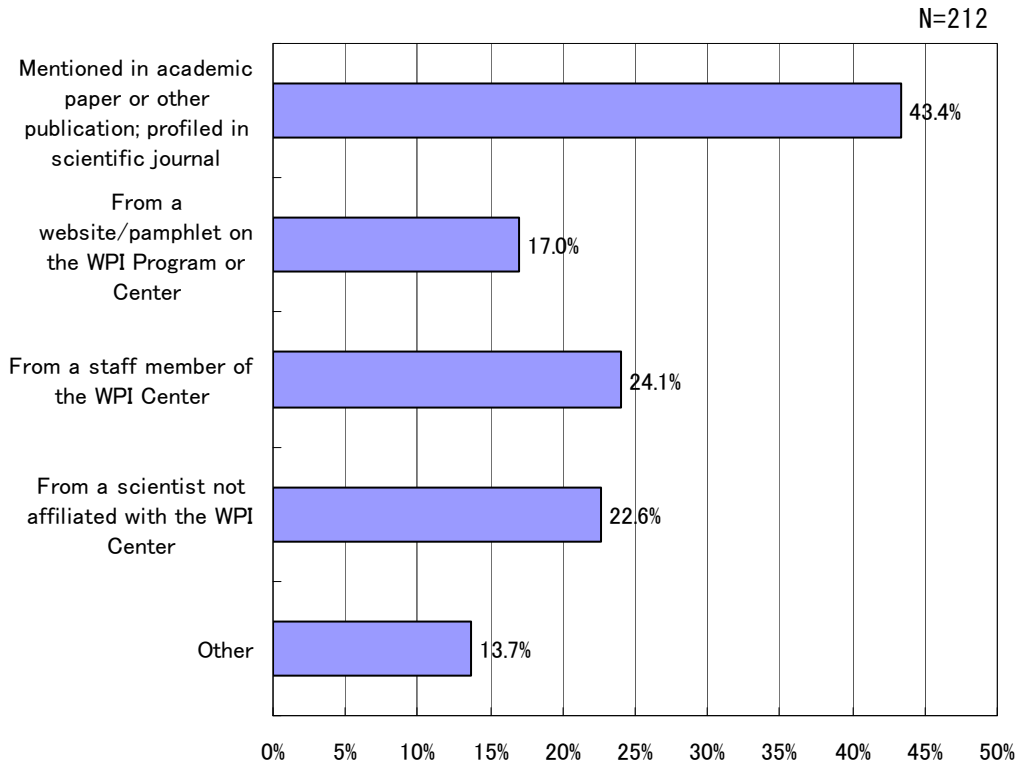


Figure 2-12 How did you first learn about the WPI Center?

Those that knew about the Center were asked about their involvement in the Center research, etc., with the following results.

Most said they had not had any involvement, even if they knew about the Center.

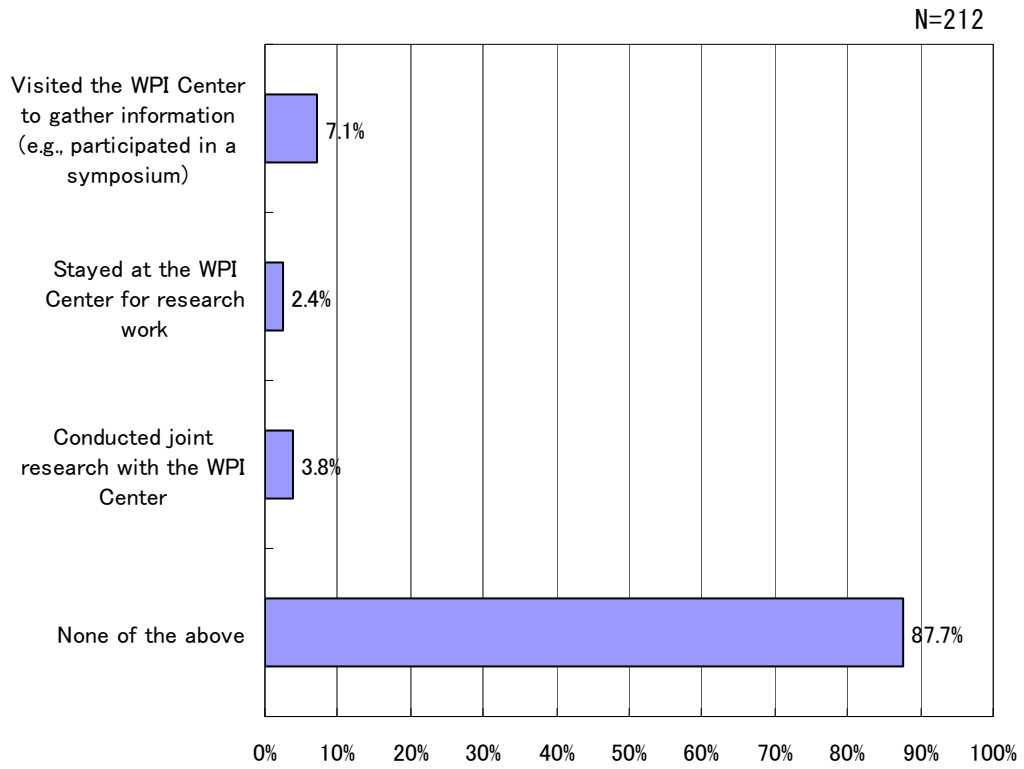


Figure 2-13 What has been your involvement in the WPI Center?

2-2-3 Evaluation of the WPI Center

As overall trends in evaluations of this WPI Center, “outstanding” and “don’t know” were the two frequent responses while “average” and “poor” responses were relatively few.

“Level of research” and “research facilities and equipment” received many “outstanding” responses, while “international character and environment” received more “average” than “outstanding” responses.

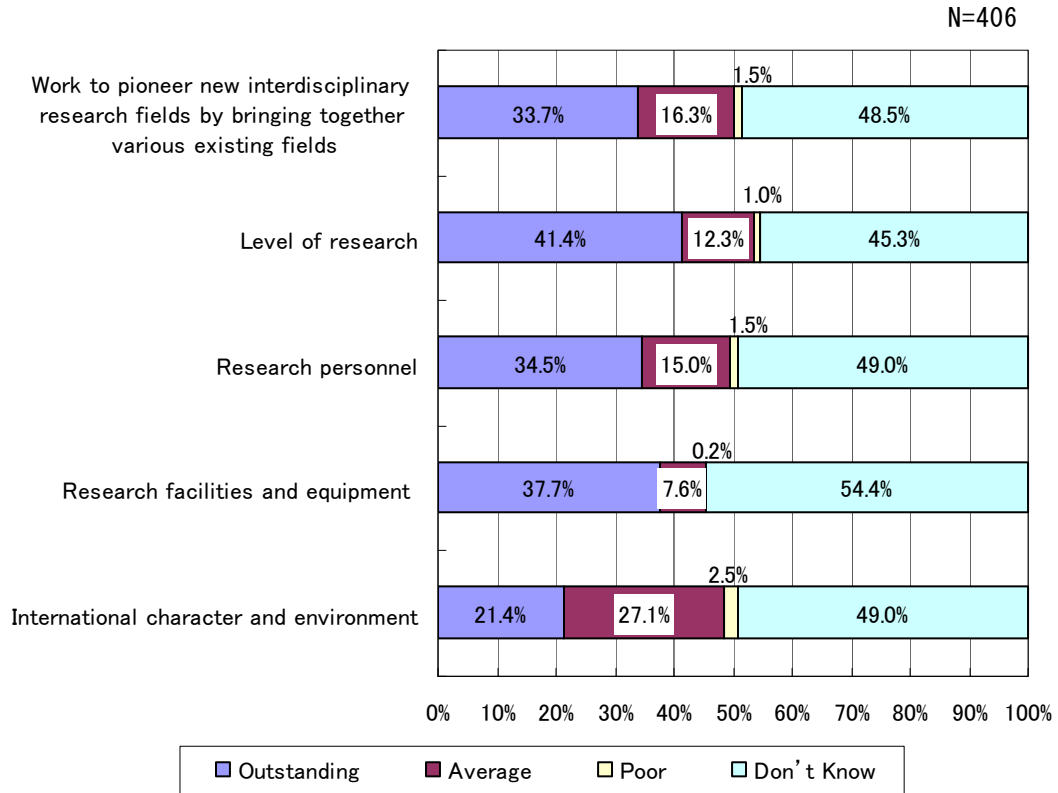


Figure 2-14 Please evaluate the WPI Center in the following areas, as able. Please select one answer for each area

2-2-4 Joint research with and participation in the WPI Center

“Sounds appealing” was the most frequent response to the question about joint research with the WPI Center, at nearly a third of the total responses. This was followed by “strongly interested” at 30 percent. Adding “interested” to these two responses accounts for around 80 percent of the total.

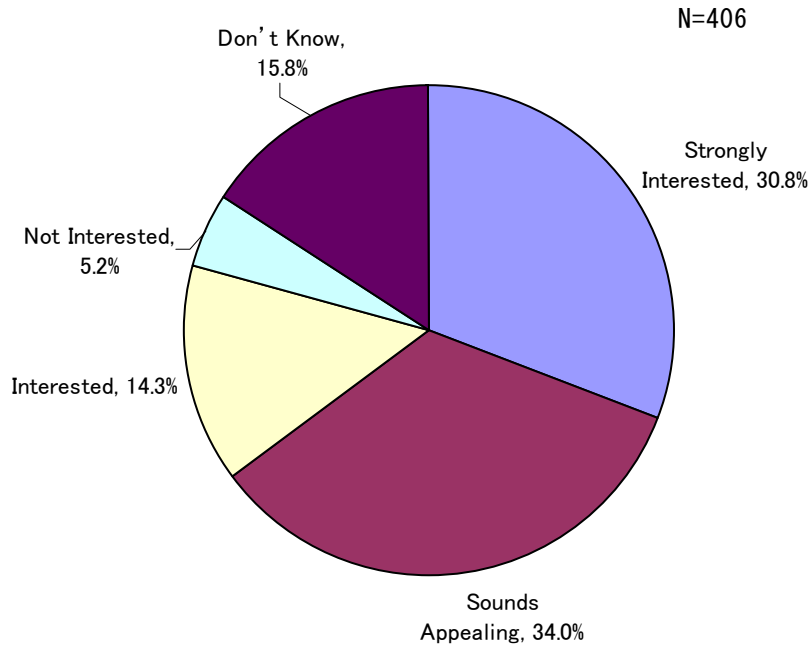


Figure 2-15 How do you view the WPI Center as a potential partner in joint research? Responses by research areas for which there were 40 or more respondents were as follows.

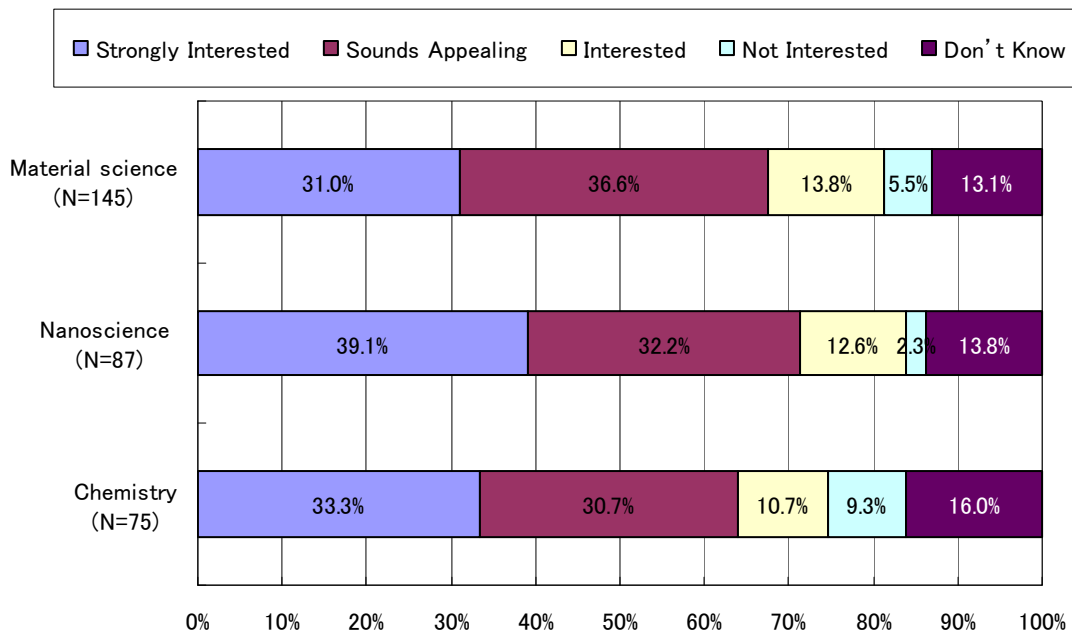


Figure 2-16 How do you view the WPI Center as a potential partner in joint research? (by main research area)

More than 60 percent responded either “strongly interested,” “sounds appealing,” or “interested” when asked about participation in WPI Center activities.

“Visit to collect information (e.g., participate in symposium)” was the most common activity the respondents desired for themselves or would recommend to others (students, colleagues, scientist acquaintances), followed by “stay at the Center for research work” and “be a member of the Center, including dual appointment.”

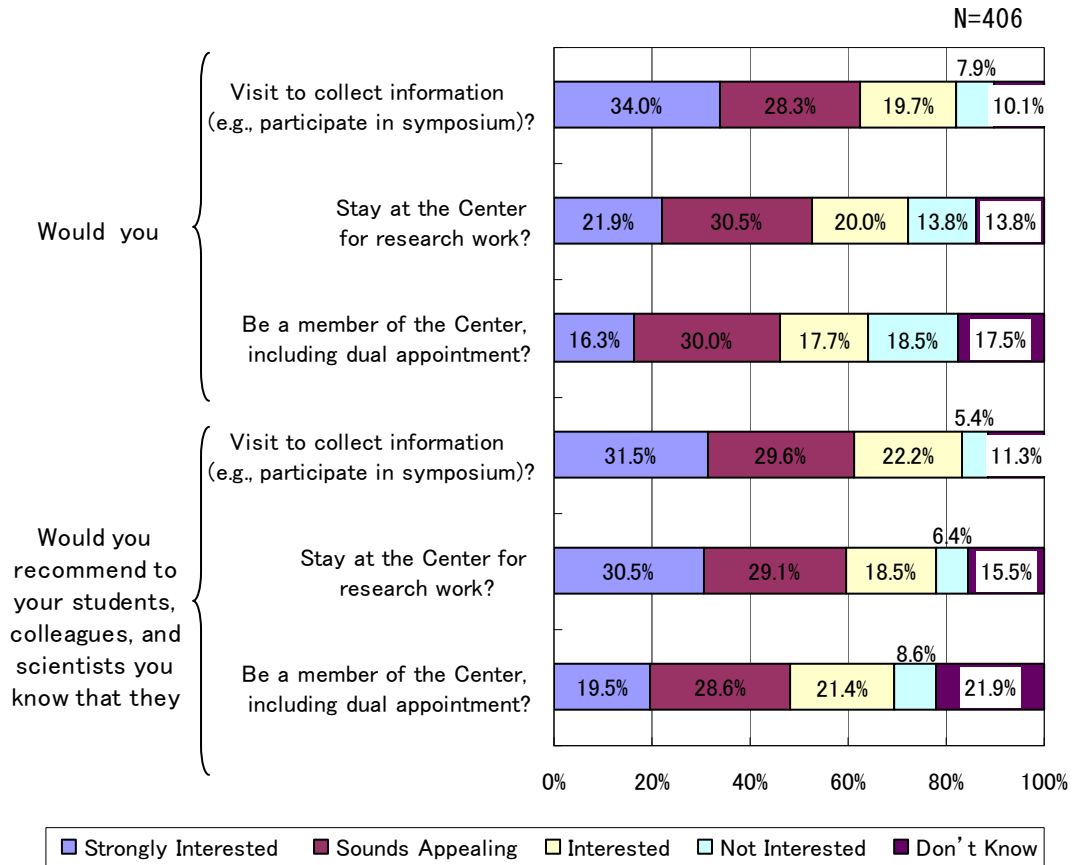


Figure 2-17 How do you view participating in the activities of the WPI Center?

Respondents who chose “strongly interested,” “sounds appealing,” or “interested” for “stay at the Center for research work” or “be a member of the Center, including dual appointment,” as activities either for their own participation in WPI Center activities or for recommending to students, colleagues, or scientist acquaintances, were asked the reason for their choice, with the following results.

“Because the Center’s research is attractive,” “because the Center has excellent research facilities and equipment,” and “because the level of the Center’s research is outstanding” were the most common reasons given.

Research content and level were also given as write-in answers for “other.”

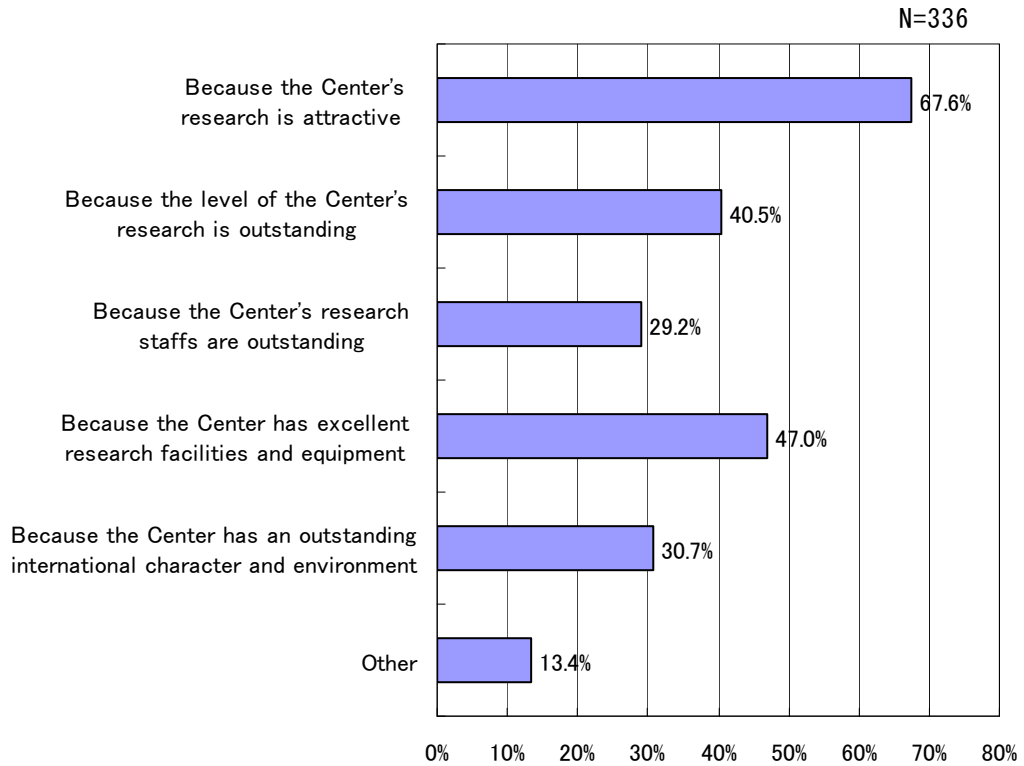


Figure 2-18 Why did you answer “strongly interested,” “sounds appealing,” or “interested” for “stay at the Center for research work” or “be a member of the Center, including dual appointment”?

Respondents who chose “not interested” rather than “strongly interested,” “sounds appealing,” or “interested” for “stay at the Center for research work” or “be a member of the Center, including dual appointment,” as activities either for their own participation in WPI Center activities or for recommending to students, colleagues, or scientist acquaintances, were asked the reason for their choice, with the following results.¹

The number of responses was small, but of these the most common were “because I don’t know about the above matters,” “because the Center’s research is not attractive,” and “because I (including my family) am concerned about living in Japan or in the area of the Center.”

Write-in answers under “other” included not being able to leave the present situation, and having a specialty outside the research areas of the Center.

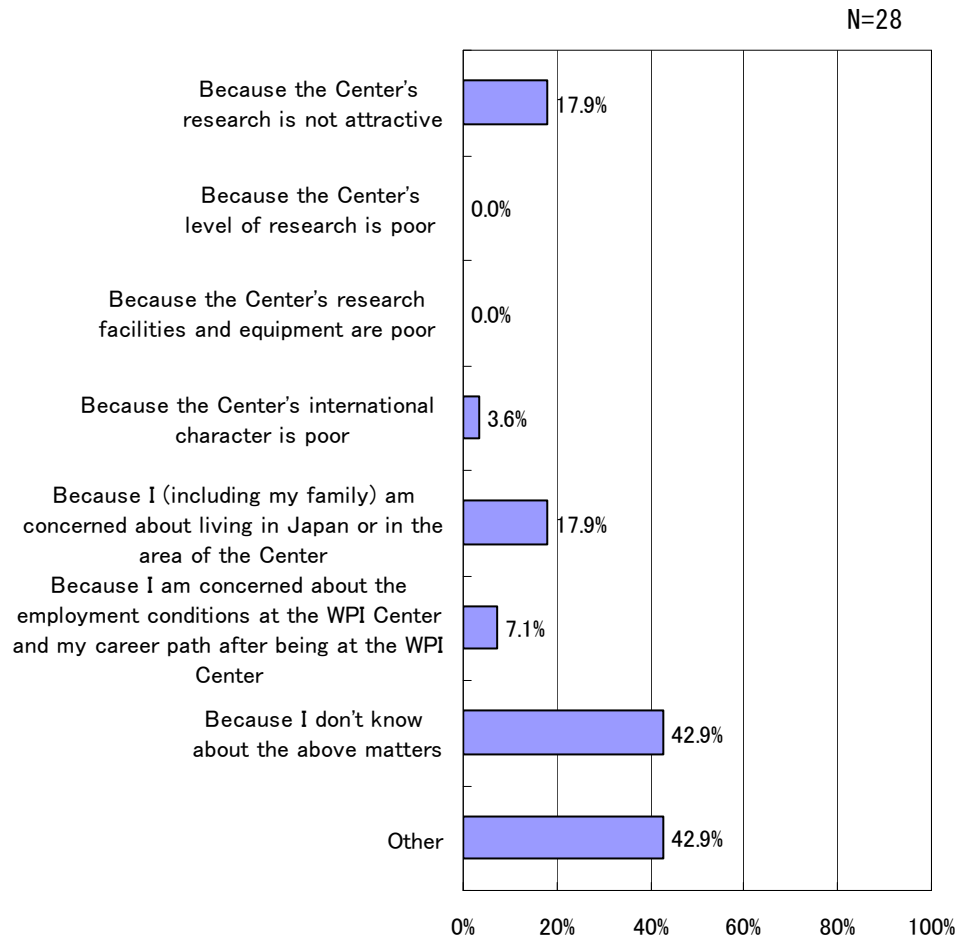


Figure 2-19 Why did you answer “not interested” for “stay at the Center for research work” or “be a member of the Center, including dual appointment”?

¹ Strictly speaking, respondents were asked the reason of their choice in cases other than the following two.

(1) The respondent chose “strongly interested,” “sounds appealing,” or “interested” for “stay at the Center for research work” or “be a member of the Center, including dual appointment,” as activities either for his/her own participation in WPI Center activities or for recommending to students, colleagues, or scientist acquaintances.

(2) The respondent chose “don’t know” for both “stay at the Center for research work” and “be a member of the Center, including dual appointment” as activities either for his/her own participation in WPI Center activities or for recommending to students, colleagues, or scientist acquaintances.

2-2-5 Advice for the WPI Center

In response to a request for advice on how to make the WPI Center a global research center, the main suggestions were along the following lines.²

- Plan symposiums and similar events.
- Strengthen publicity, advertising, and information dissemination.
- Promote globalization (e.g.: hold international conferences, invite/accept more foreign scientists, send Japanese researchers overseas, conduct international exchanges, conduct international joint research, issue information in English).
- Support, train, and make use of outstanding young scientists.
- Excellent results must be achieved and the specific details need to be announced.

² This is a sampling of different ideas, drawn mainly from those given by multiple respondents.

 2-3 Institute for the Physics and Mathematics of the Universe (IPMU)

2-3-1 Main research area, nationality, and research countries of respondents

The main research areas of respondents, their nationalities, and countries where they have performed research are as indicated below.

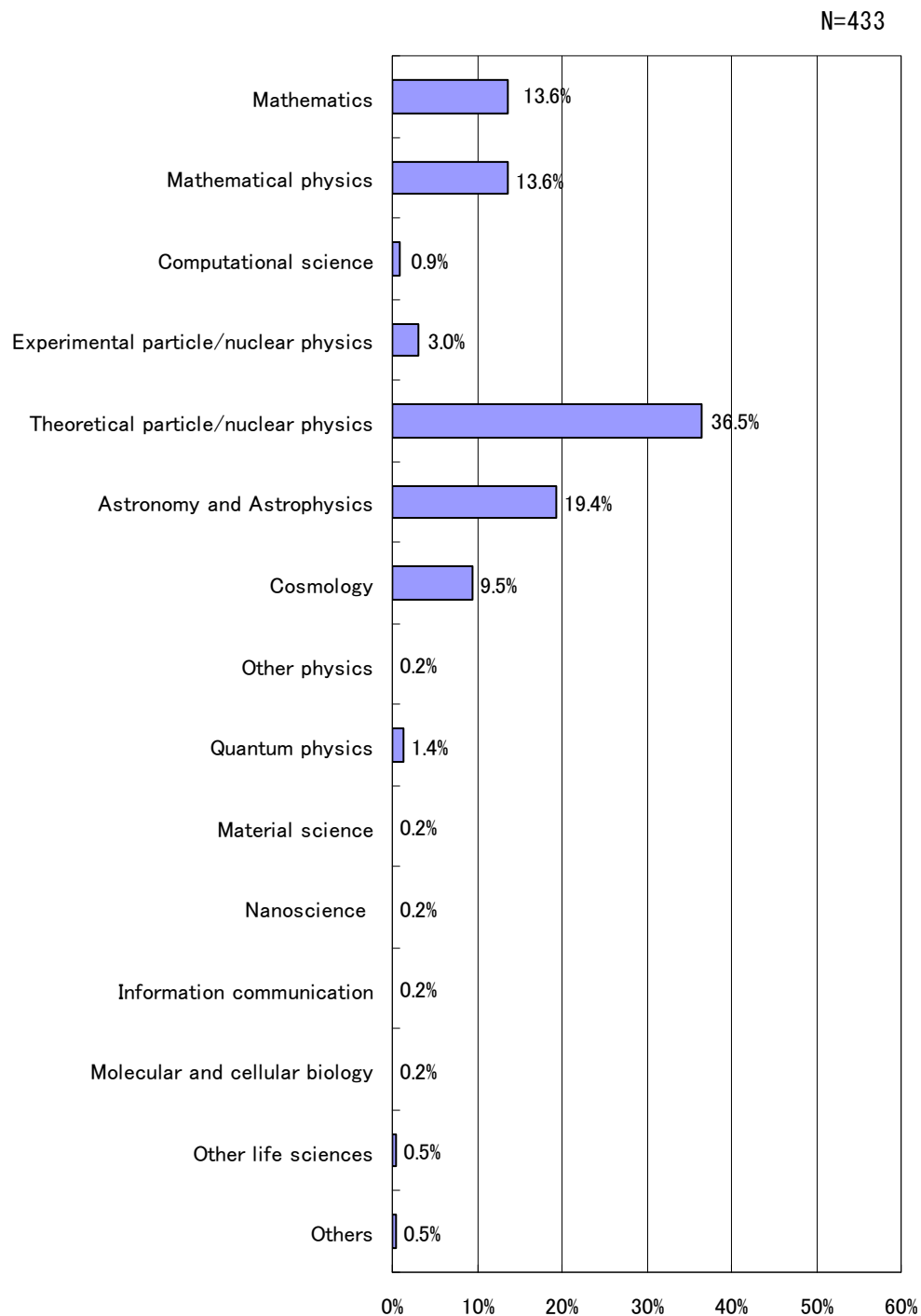


Figure 2-20 Your Main Research Area

N=433

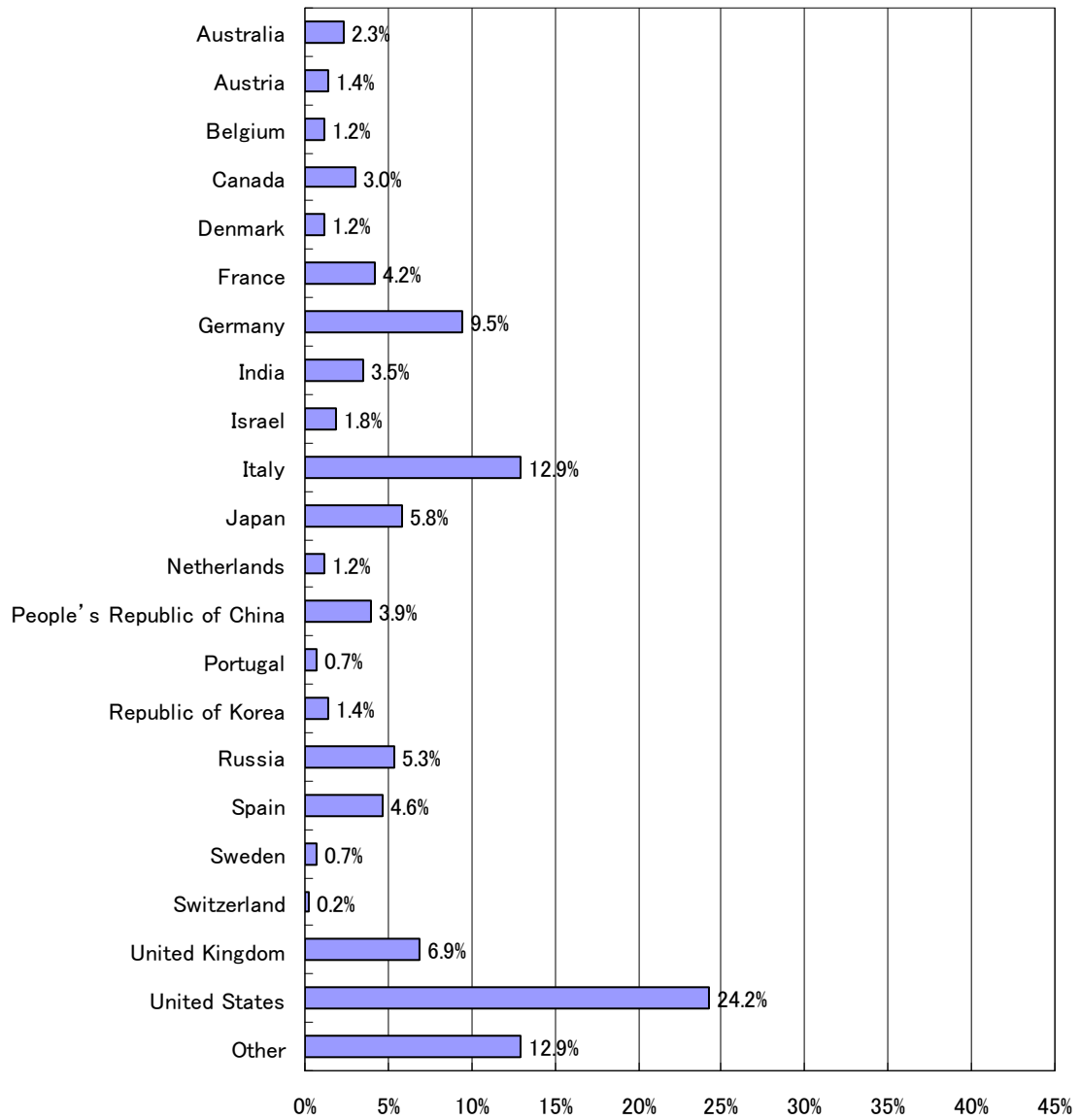


Figure 2-21 Your Nationality

N=433

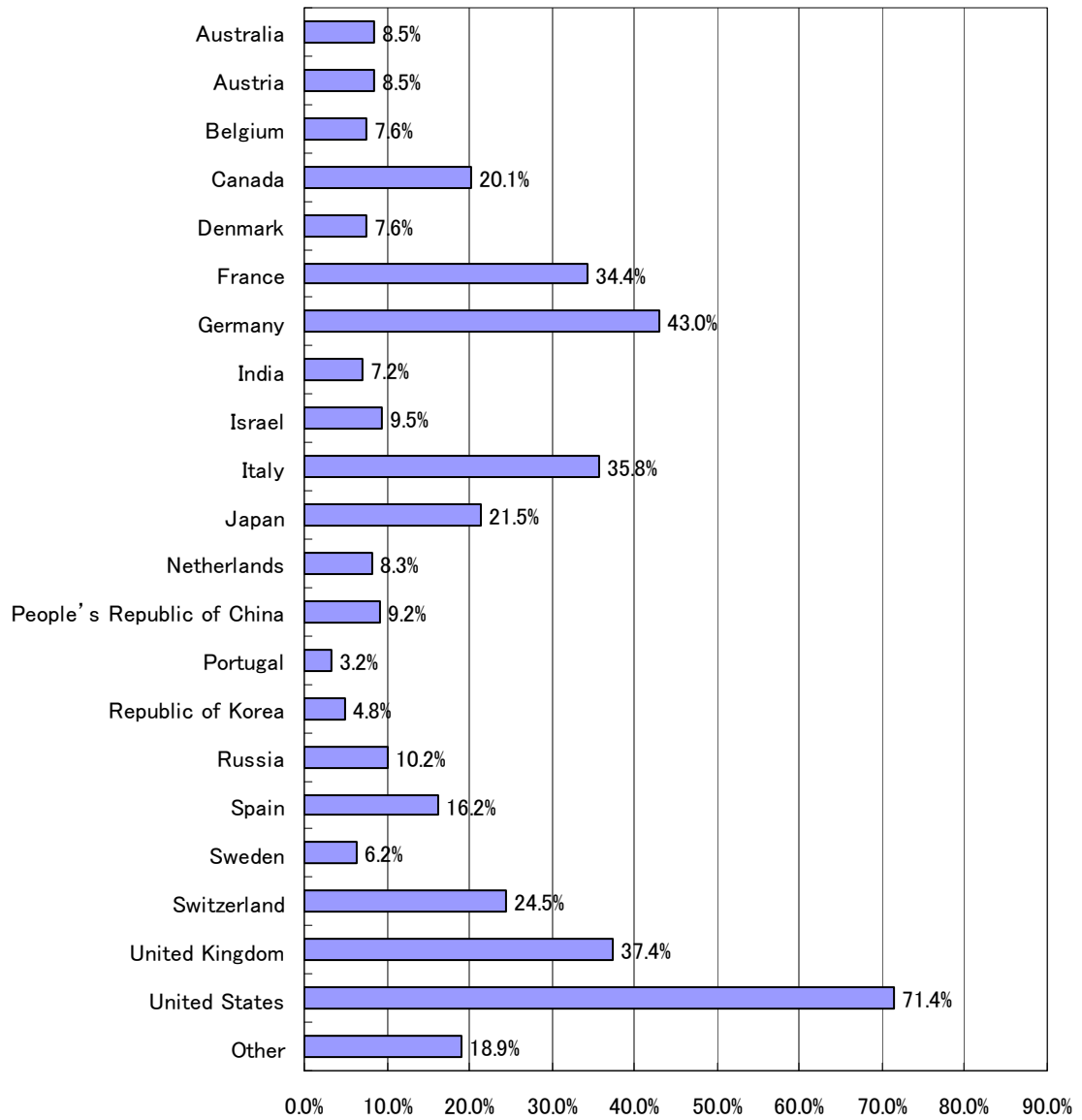


Figure 2-22 Countries Where You Have Performed Research

2-3-2 Awareness and knowledge of the WPI Center

Only around a third of respondents said they did not know about the Center. Around half said they knew the name of the Center and the nature of the research, while 40 percent or so knew about the WPI Program and the name of the Center director.

The degree of familiarity was seen to vary depending on the main research area of respondents.

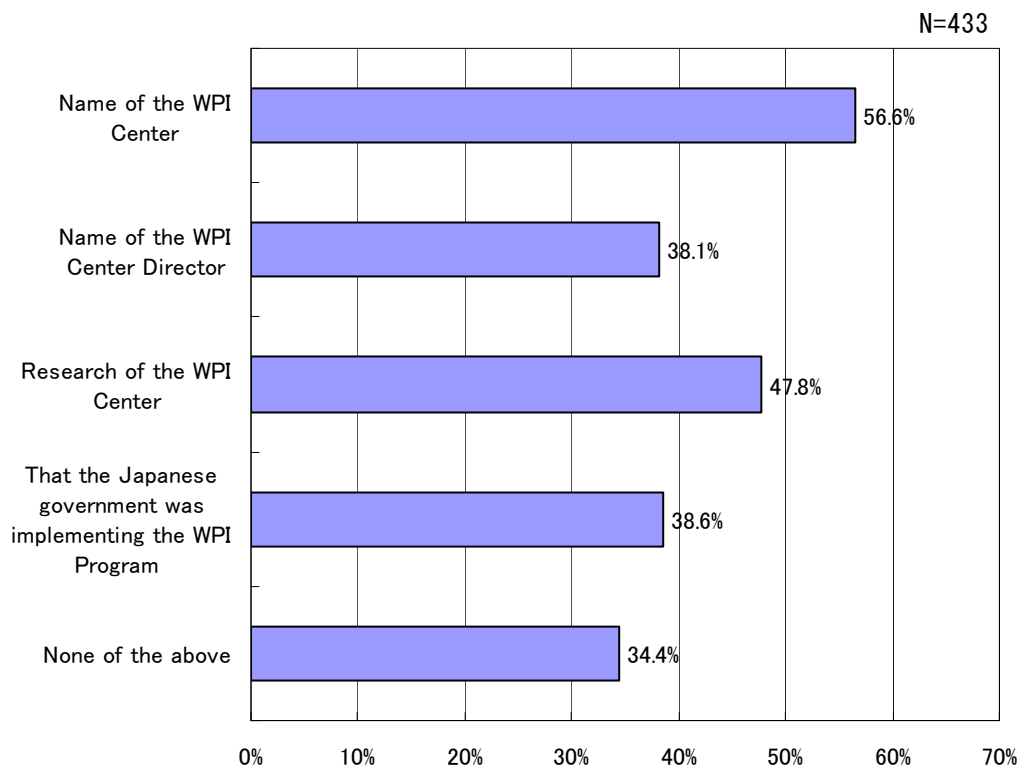


Figure 2-23 Before receiving this questionnaire, which of the following did you know about the WPI Center?

Responses by research areas for which there were 40 or more respondents were as follows.

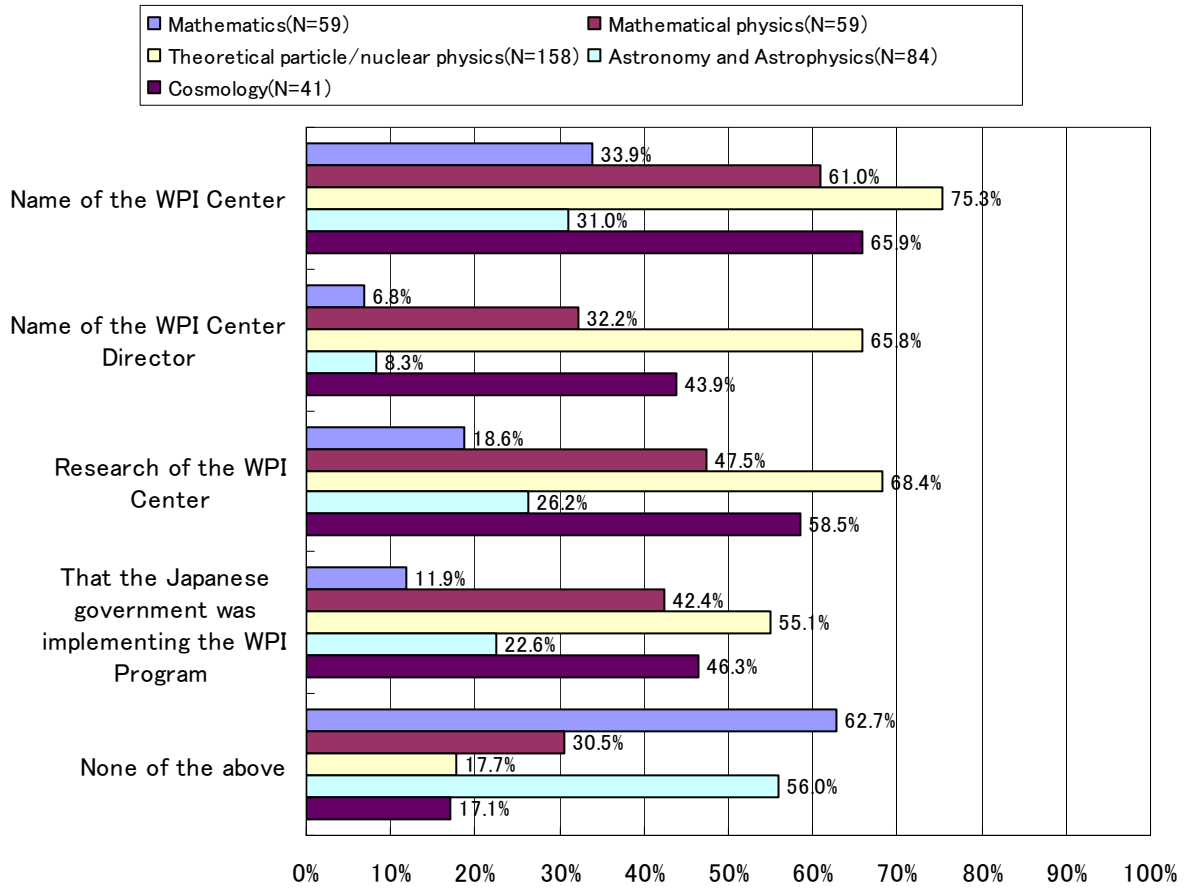


Figure 2-24 Before receiving this questionnaire, which of the following did you know about the WPI Center? (by main research area)

When those that knew about the Center were asked about the initial source of their knowledge, the results were as follows.

The most frequent responses were “from a staff member of the WPI Center” and “from a scientist not affiliated with the WPI Center.” This result is unique to IPMU.

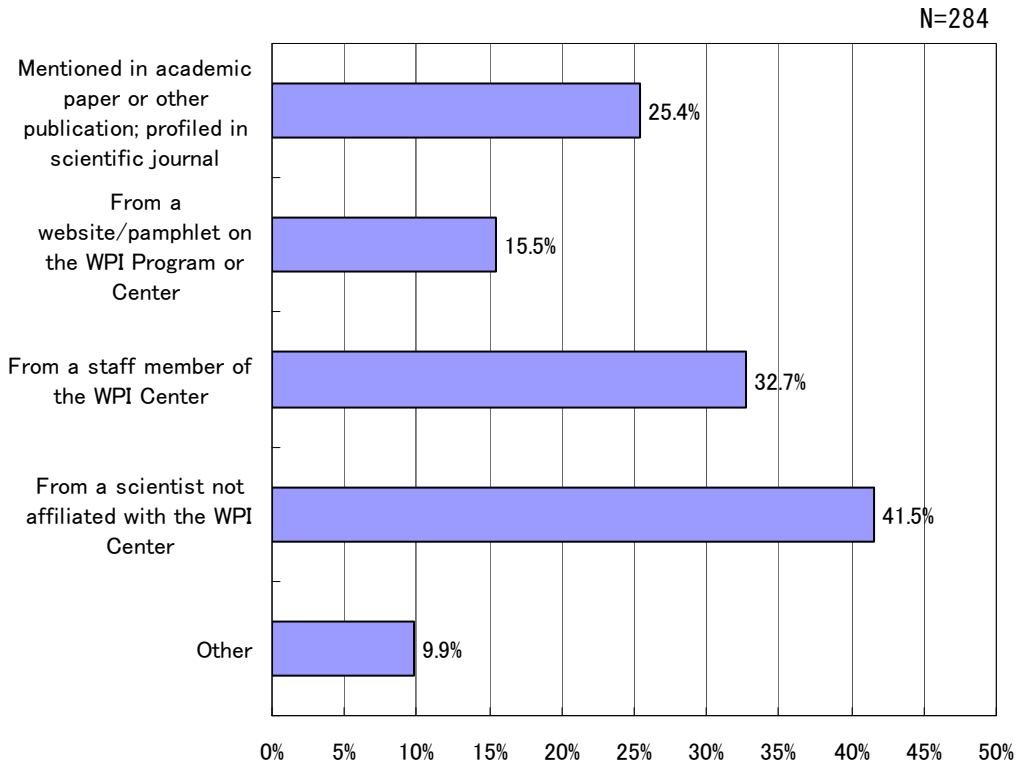


Figure 2-25 How did you first learn about the WPI Center?

Those that knew about the Center were asked about their involvement in the Center research, etc., with the following results.

Most said they had not had any involvement, even if they knew about the Center.

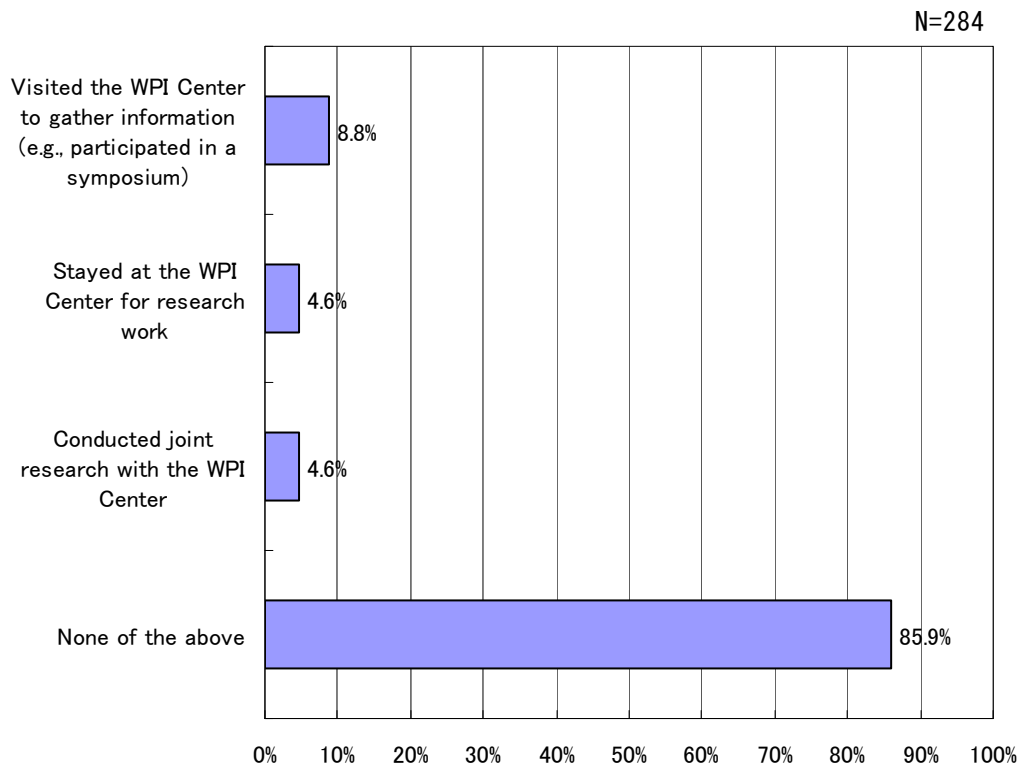


Figure 2-26 What has been your involvement in the WPI Center?

2-3-3 Evaluation of the WPI Center

As overall trends in evaluations of this WPI Center, “outstanding” and “don’t know” were the two frequent responses while “average” and “poor” responses were relatively few.

“Research personnel,” “level of research,” and “work to pioneer new interdisciplinary research fields by bringing together various existing fields” received relatively many “outstanding” responses.

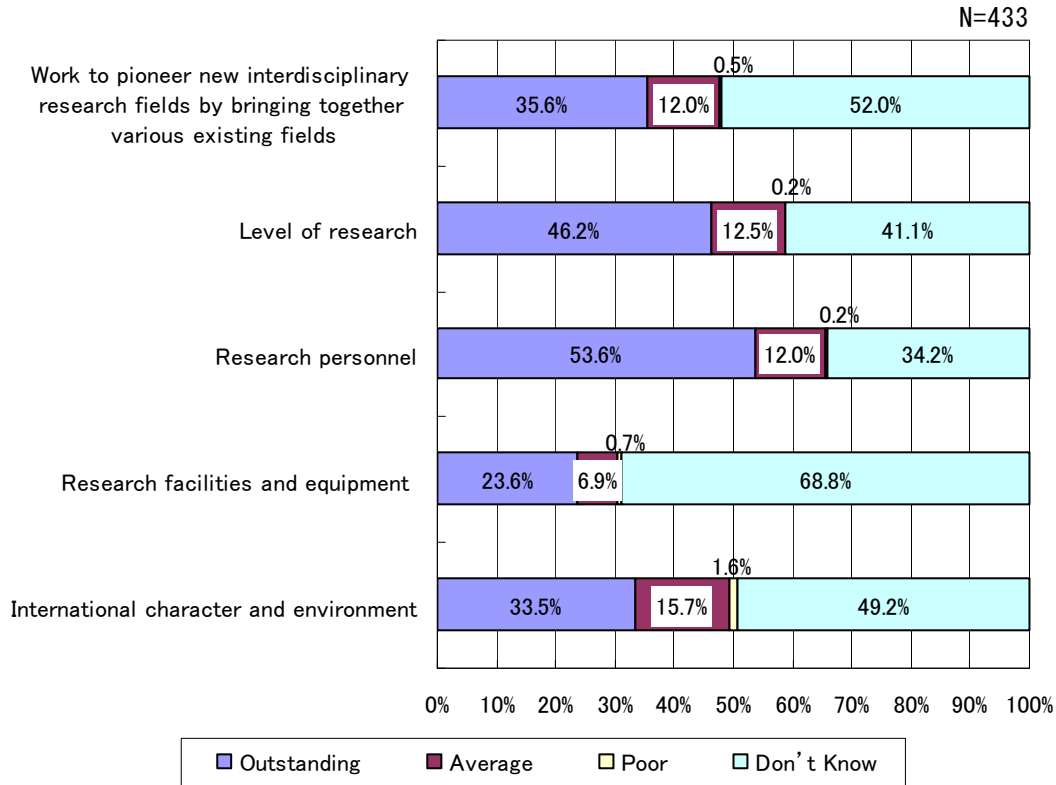


Figure 2-27 Please evaluate the WPI Center in the following areas, as able. Please select one answer for each area

2-3-4 Joint research with and participation in the WPI Center

The largest number of respondents chose “sounds appealing” concerning joint research with the WPI Center, with this response and “strongly interested” together making up about 70 percent of the responses.

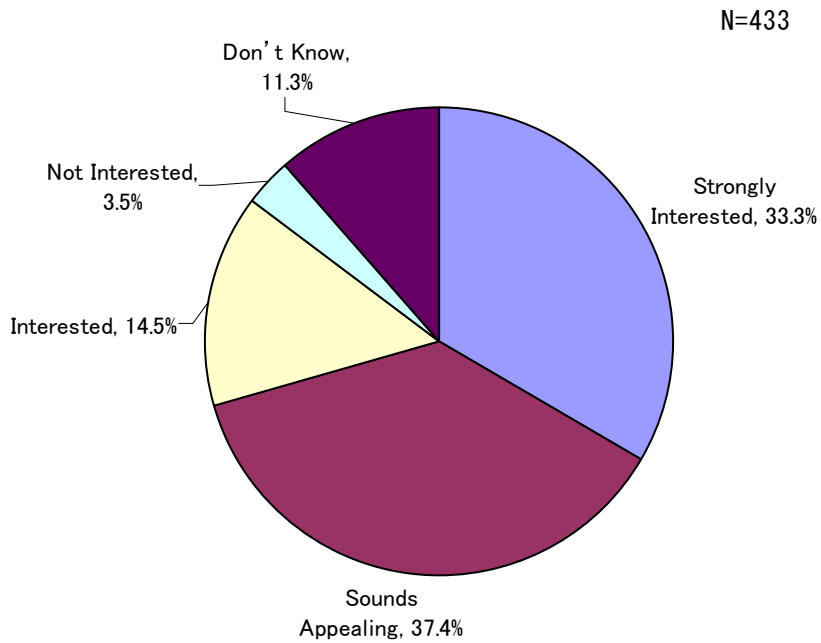


Figure 2-28 How do you view the WPI Center as a potential partner in joint research? Responses by research areas for which there were 40 or more respondents were as follows.

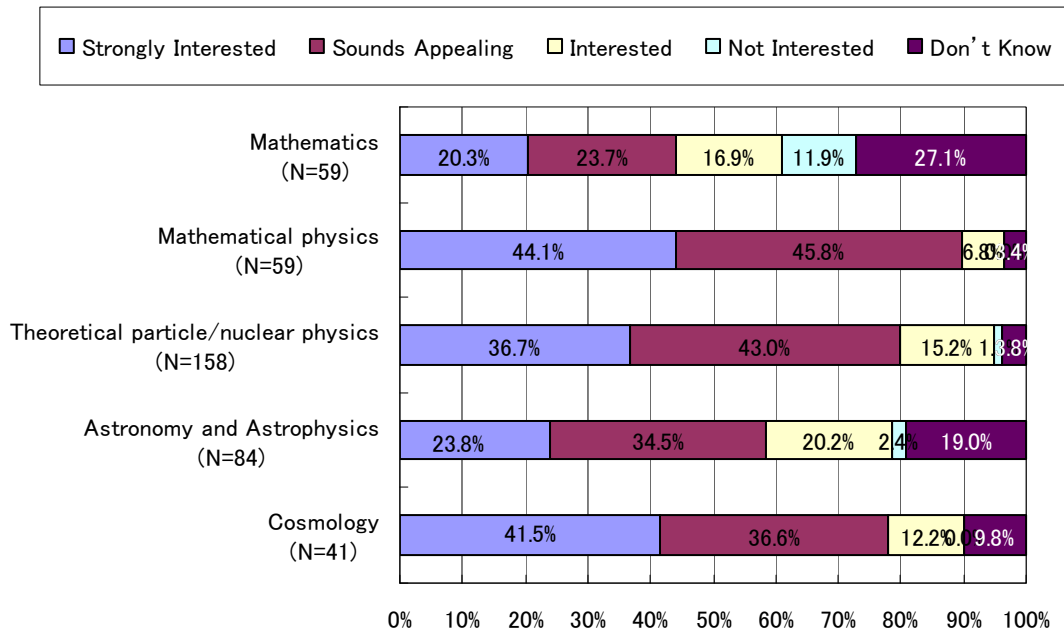


Figure 2-29 How do you view the WPI Center as a potential partner in joint research? (by main research area)

More than 60 percent responded either “strongly interested,” “sounds appealing,” or “interested” when asked about participation in WPI Center activities.

“Visit to collect information (e.g., participate in symposium)” was the most common activity the respondents desired for themselves or would recommend to others (students, colleagues, scientist acquaintances), followed by “stay at the Center for research work” and “be a member of the Center, including dual appointment.”

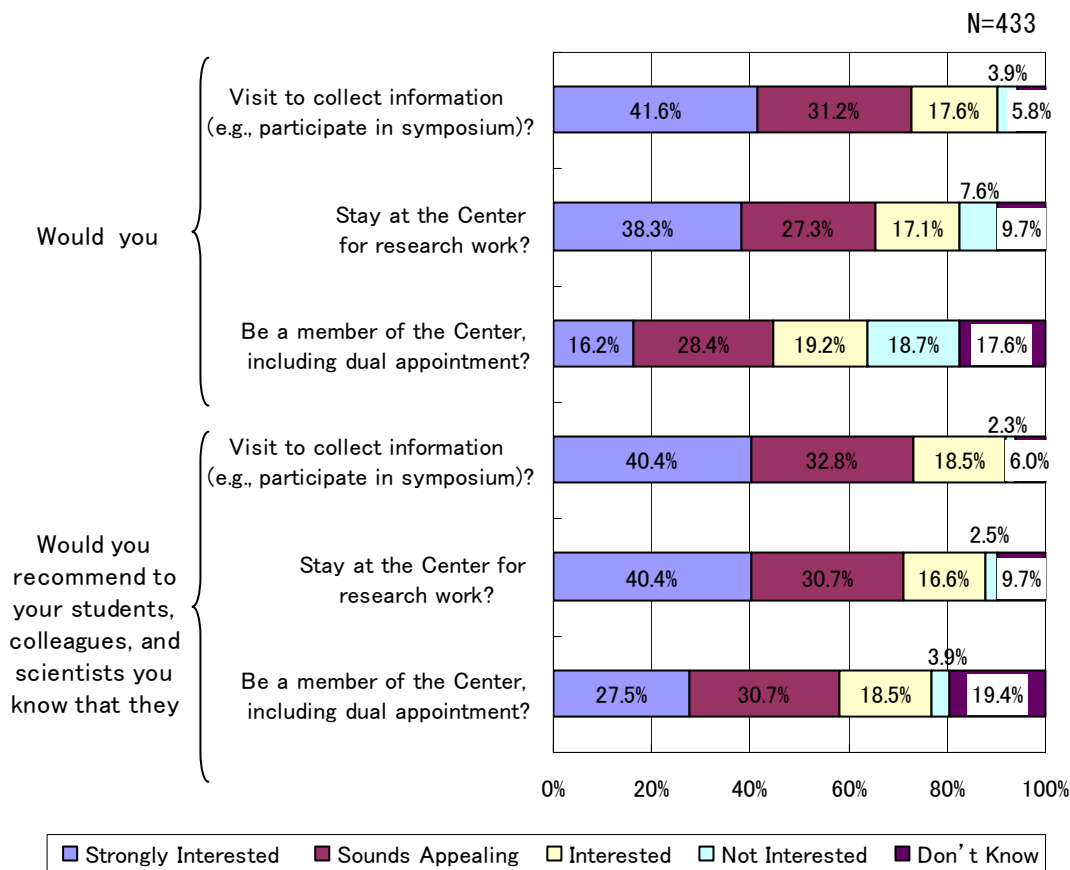


Figure 2-30 How do you view participating in the activities of the WPI Center?

Respondents who chose “strongly interested,” “sounds appealing,” or “interested” for “stay at the Center for research work” or “be a member of the Center, including dual appointment,” as activities either for their own participation in WPI Center activities or for recommending to students, colleagues, or scientist acquaintances, were asked the reason for their choice, with the following results.

“Because the Center’s research is attractive,” “because the Center’s research staffs are outstanding,” and “because the level of the Center’s research is outstanding” were the most common reasons given.

Interest in new research fields, and research level were also given as write-in answers for “other.”

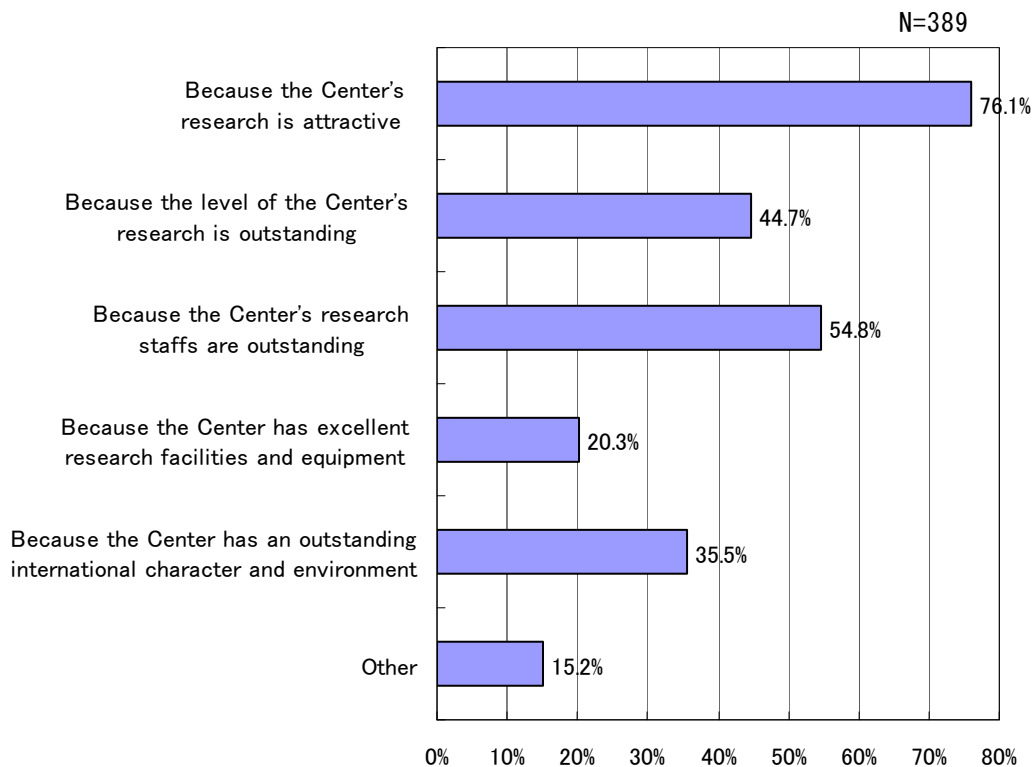


Figure 2-31 Why did you answer “strongly interested,” “sounds appealing,” or “interested” for “stay at the Center for research work” or “be a member of the Center, including dual appointment”?

Respondents who chose “not interested” rather than “strongly interested,” “sounds appealing,” or “interested” for “stay at the Center for research work” or “be a member of the Center, including dual appointment,” as activities either for their own participation in WPI Center activities or for recommending to students, colleagues, or scientist acquaintances, were asked the reason for their choice, with the following results.³

The number of responses was small, but of these the most common were “because I don’t know about the above matters,” “because the Center’s research is not attractive,” and “because I (including my family) am concerned about living in Japan or in the area of the Center.”

Write-in answers under “other” included not being able to leave the present situation, and having a specialty outside the research areas of the Center.

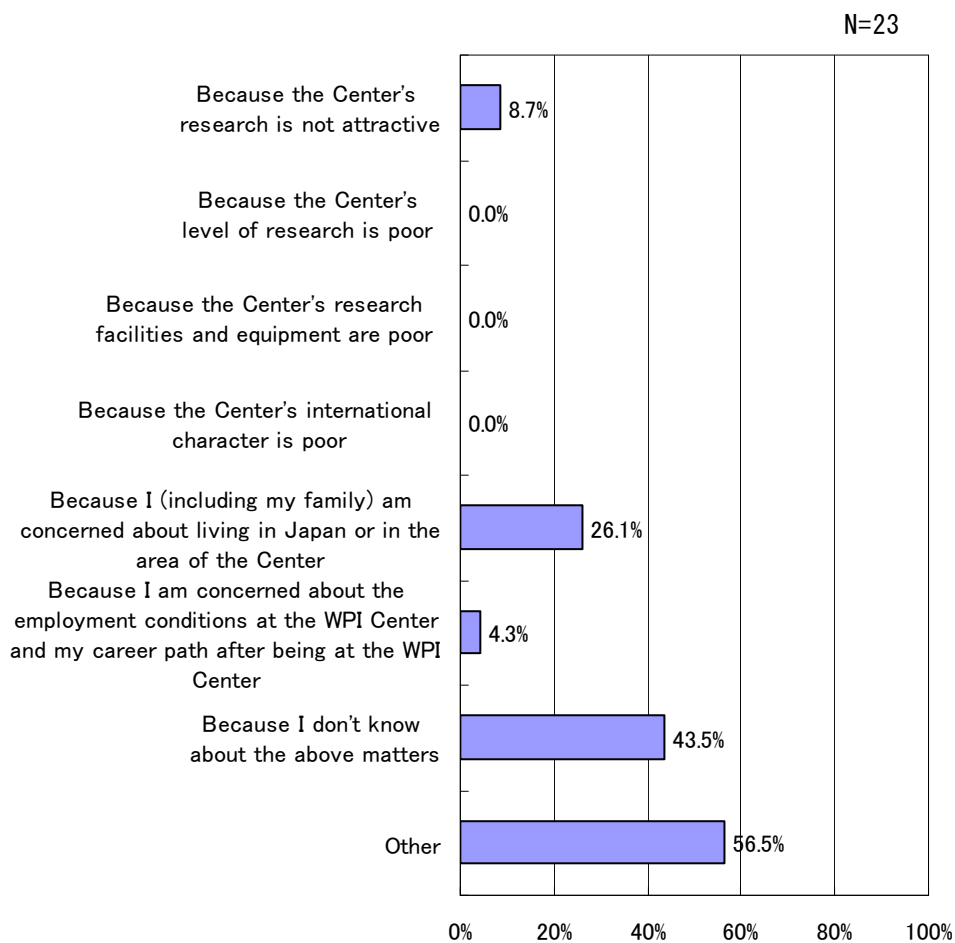


Figure 2-32 Why did you answer “not interested” for “stay at the Center for research work” or “be a member of the Center, including dual appointment”?

³ Strictly speaking, respondents were asked the reason for their choice in cases other than the following two.

(1) The respondent chose “strongly interested,” “sounds appealing,” or “interested” for “stay at the Center for research work” or “be a member of the Center, including dual appointment” as activities either for his/her own participation in WPI Center activities or for recommending to students, colleagues, or scientist acquaintances.

(2) The respondent chose “don’t know” for both “stay at the Center for research work” and “be a member of the Center, including dual appointment,” as activities either for his/her own participation in WPI Center activities or for recommending to students, colleagues, or scientist acquaintances.

2-3-5 Advice for the WPI Center

In response to a request for advice on how to make the WPI Center a global research center, the main suggestions were along the following lines.⁴

- Plan symposiums and similar events.
- Strengthen publicity, advertising, and information dissemination.
- Implement programs from a medium- to long-range standpoint.
- Boost ties with overseas research organizations.
- Take a broader view of the research area, including pure mathematics.
- Narrow down the research areas.
- Increase the number of outstanding foreign scientists accepted (short/long-term, tenured).
- The existence of the current director is important.

⁴ This is a sampling of different ideas, drawn mainly from those given by multiple respondents.

2-4 Institute for Integrated Cell-Material Sciences (iCeMS)

2-4-1 Main research area, nationality, and research countries of respondents

The main research areas of respondents, their nationalities, and countries where they have performed research are as indicated below.

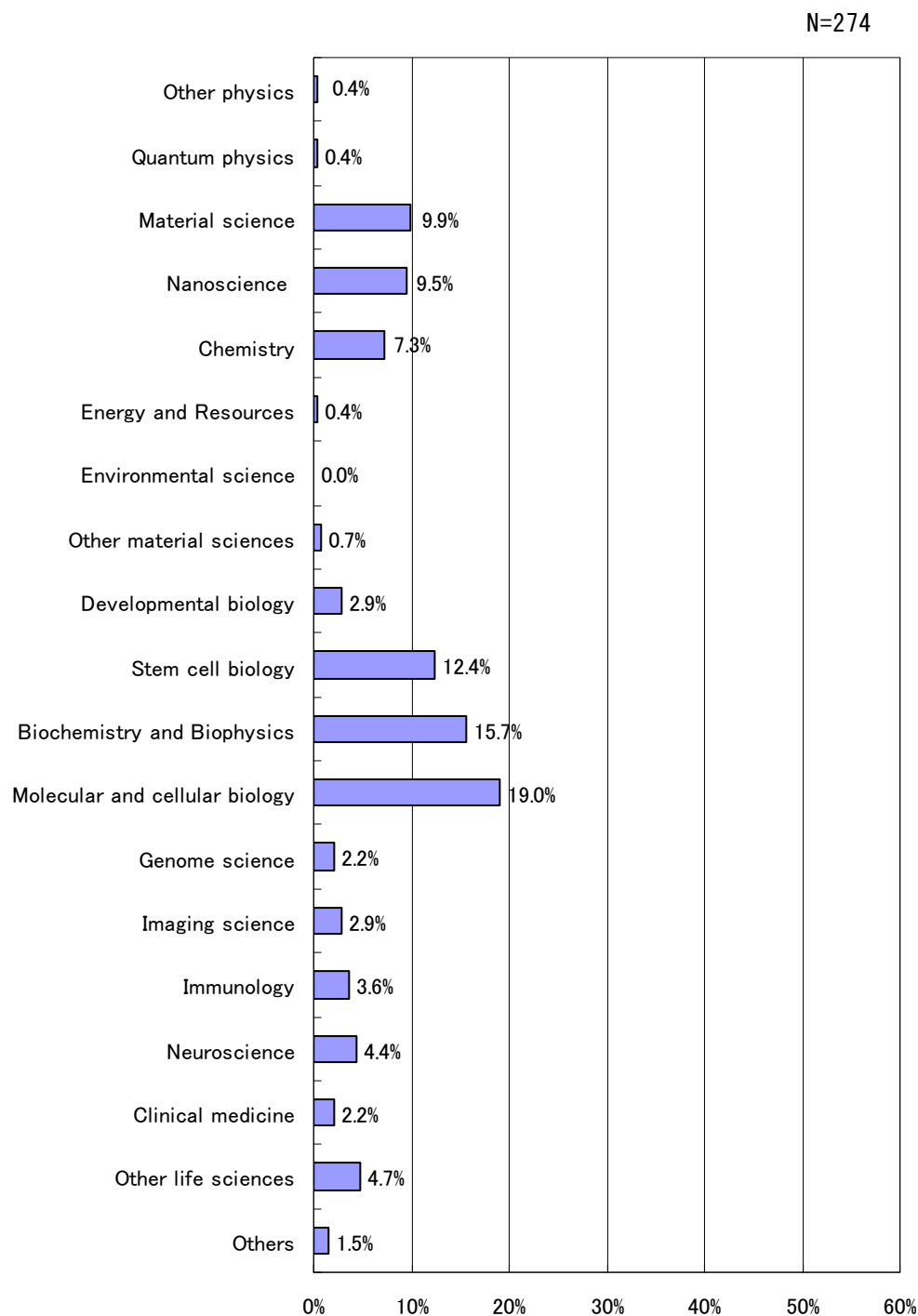


Figure 2-33 Your Main Research Area

N=274

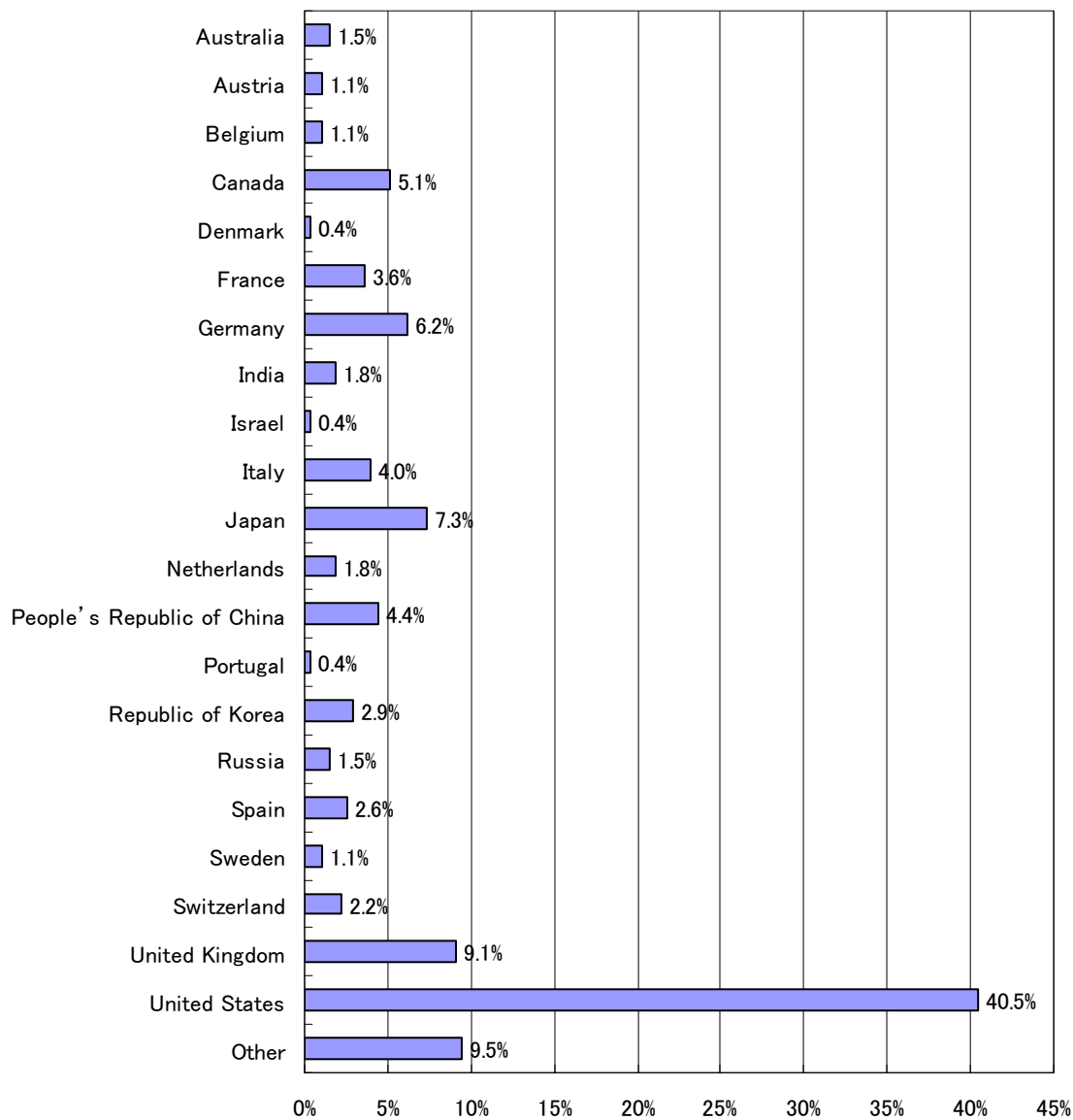


Figure 2-34 Your Nationality

N=274

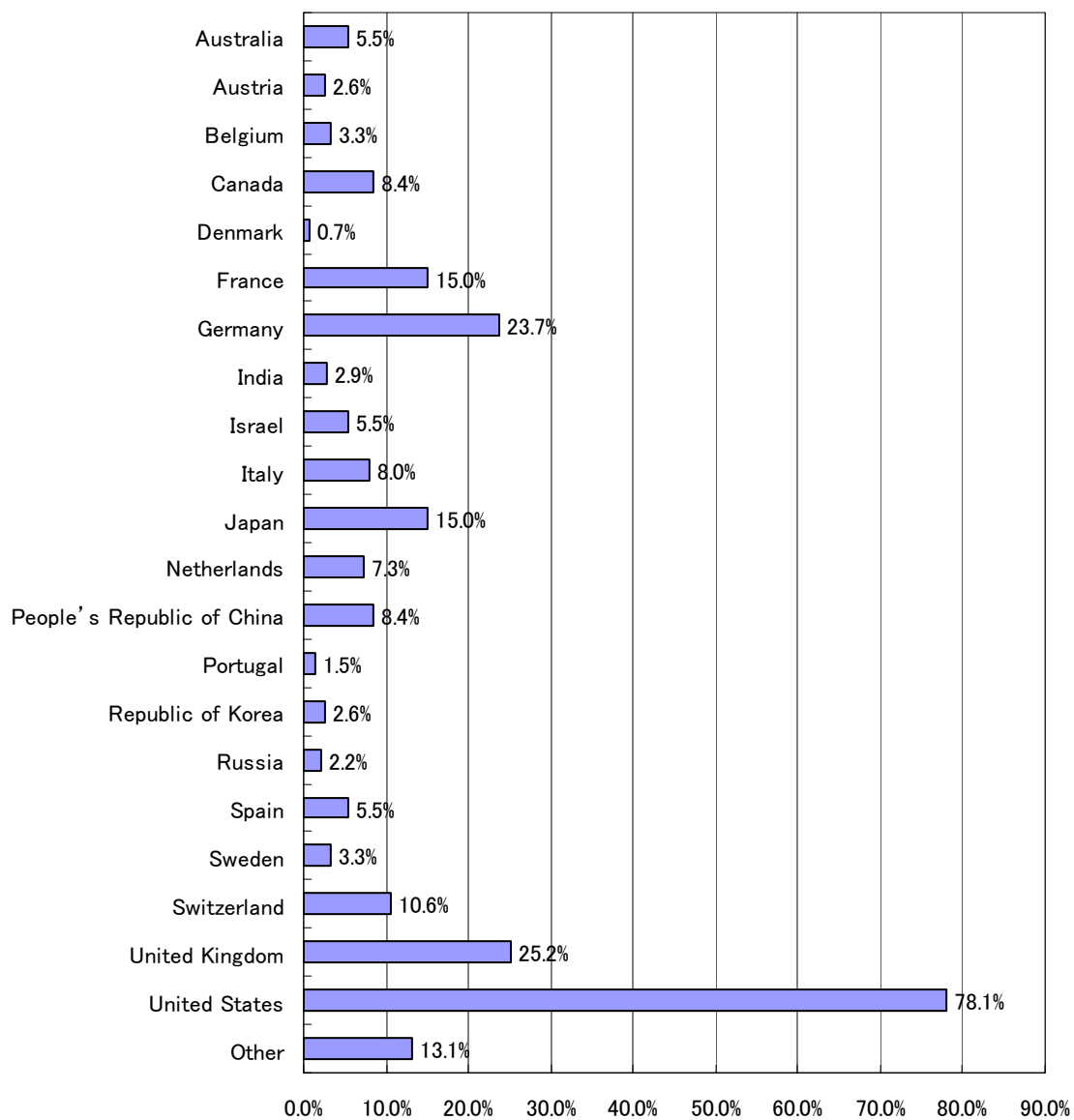


Figure 2-35 Countries Where You Have Performed Research

2-4-2 Awareness and knowledge of the WPI Center

Close to two-thirds of respondents said they did not know about the Center. The items known in order of familiarity were the WPI Program, name of the Center, nature of the research, and name of the director; but the percentages were small in each case.

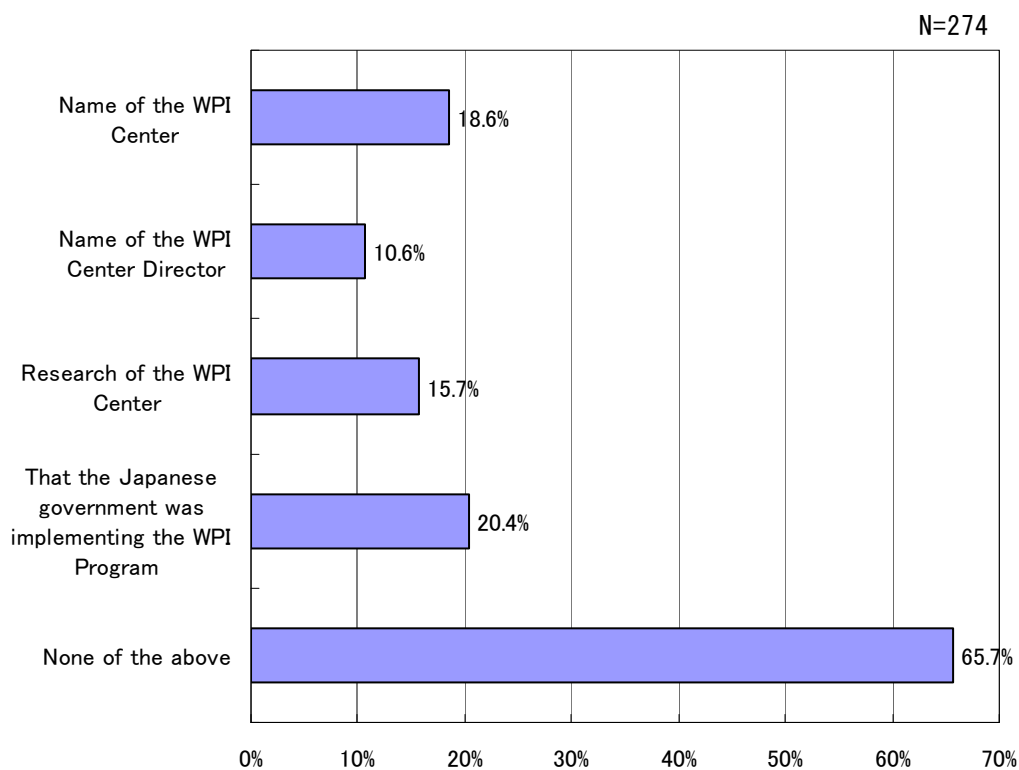


Figure 2-36 Before receiving this questionnaire, which of the following did you know about the WPI Center?

Responses by research areas for which there were 40 or more respondents were as follows.

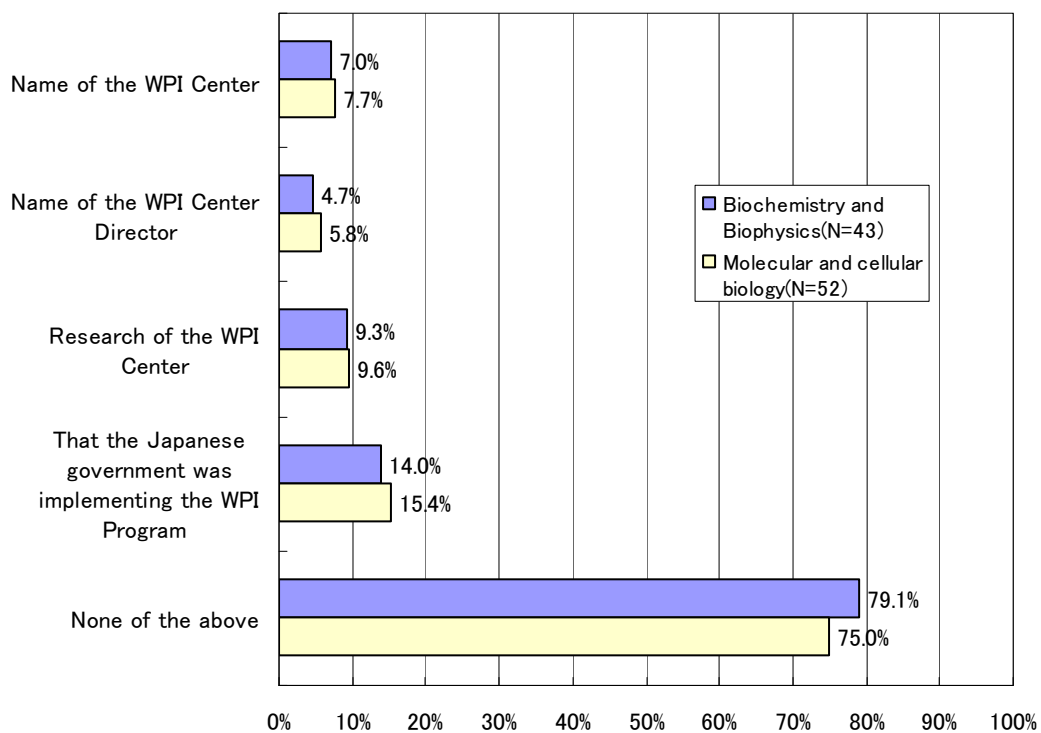


Figure 2-37 Before receiving this questionnaire, which of the following did you know about the WPI Center? (by main research area)

When those that knew about the Center were asked about the initial source of their knowledge, the results were as follows.

The most frequent response was “mentioned in academic paper or other publication; profiled in scientific journal.”

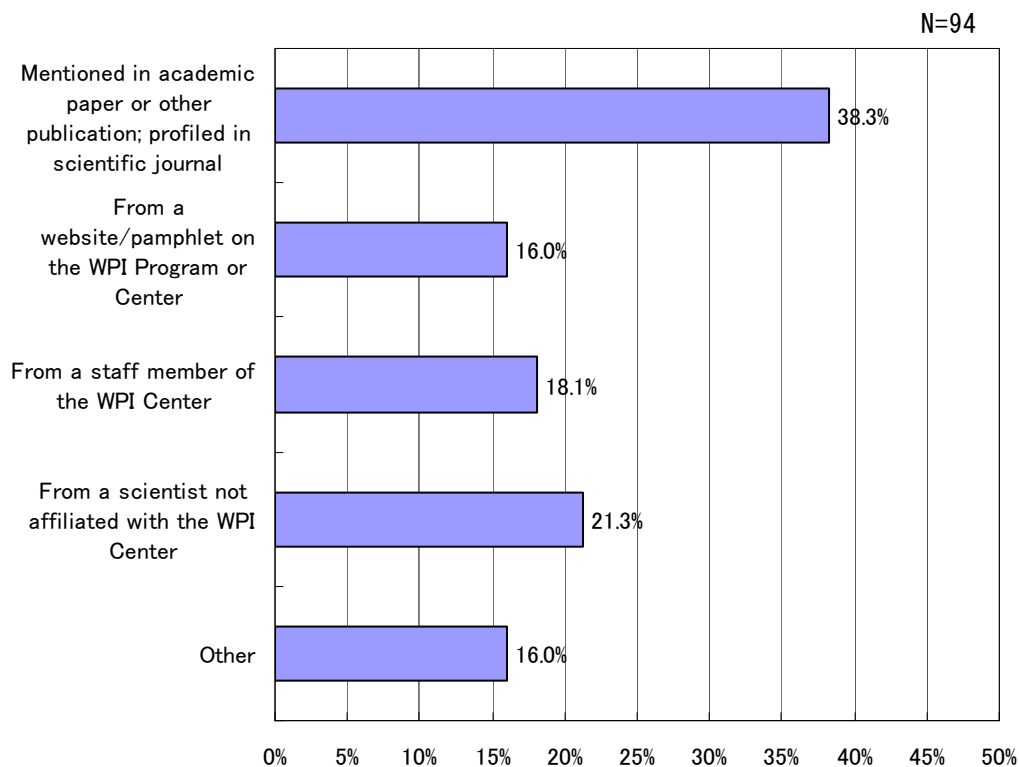


Figure 2-38 How did you first learn about the WPI Center?

Those that knew about the Center were asked about their involvement in the Center research, etc., with the following results.

Most said they had not had any involvement, even if they knew about the Center.

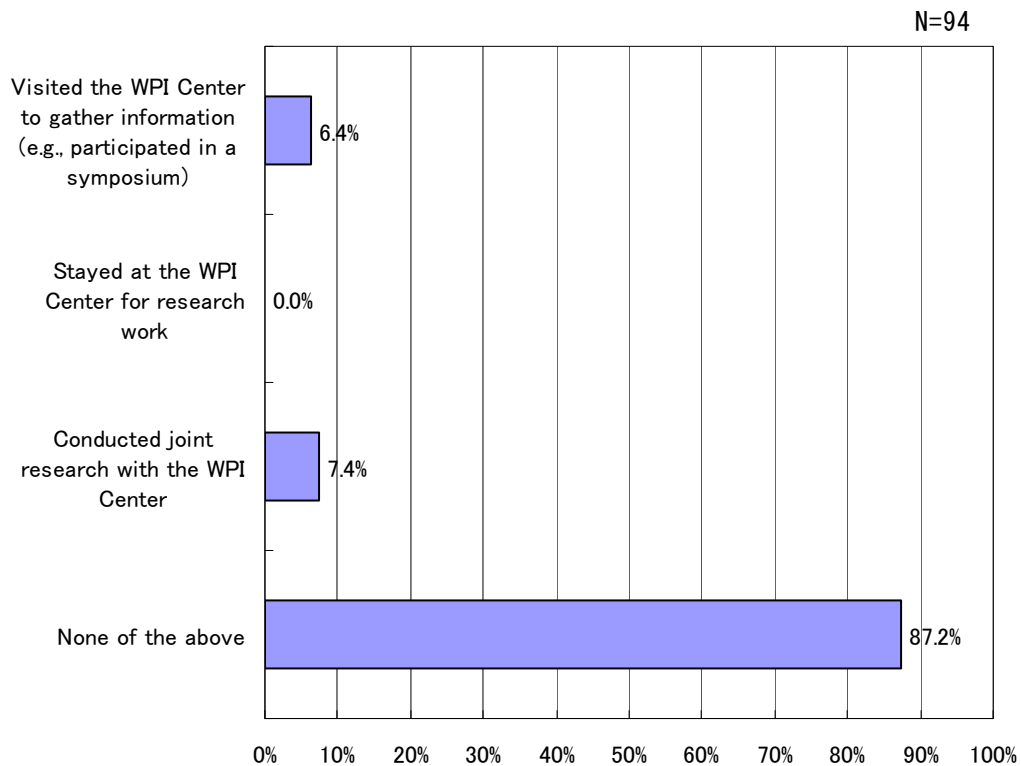


Figure 2-39 What has been your involvement in the WPI Center?

2-4-3 Evaluation of the WPI Center

As overall trends in evaluations of this WPI Center, “outstanding” and “don’t know” were the two frequent responses while “average” and “poor” responses were relatively few.

“Work to pioneer new interdisciplinary research fields by bringing together various existing fields,” “research personnel,” and “level of research” received relatively many “outstanding” responses. For “international character and environment” the “average” responses outnumbered “outstanding.”

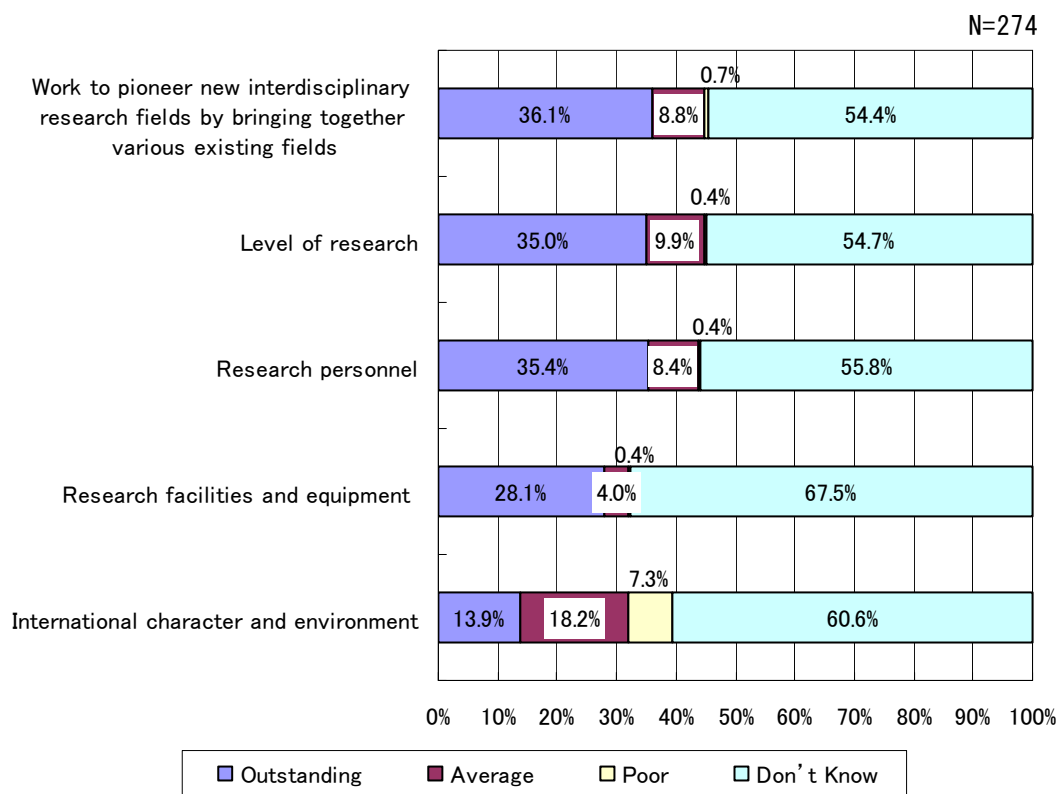


Figure 2-40 Please evaluate the WPI Center in the following areas, as able. Please select one answer for each area

2-4-4 Joint research with and participation in the WPI Center

“Sounds appealing” was the most frequent response to the question about joint research with the WPI Center, at nearly a third of the total responses. This was followed by “strongly interested” at almost 30 percent. Adding “interested” to these two responses accounts for nearly 70 percent of the total.

About a quarter of the respondents indicated “don’t know.”

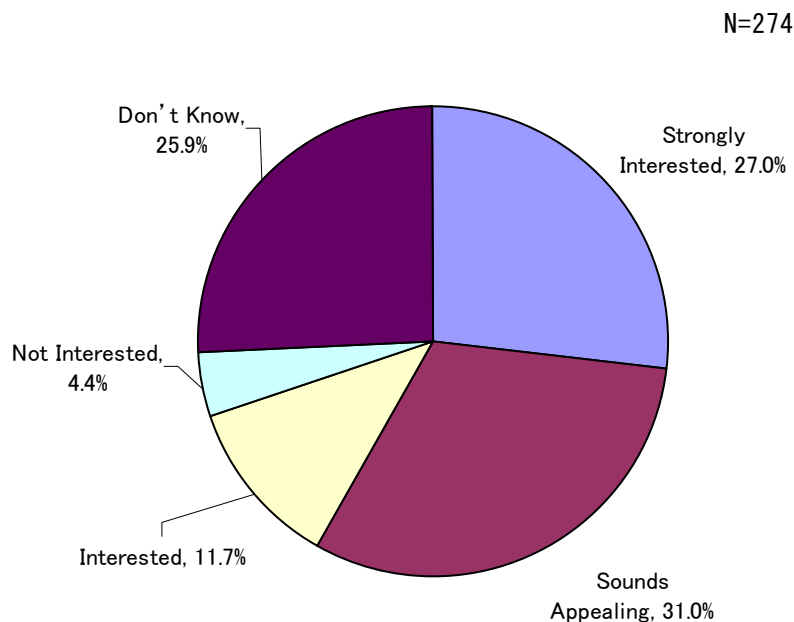


Figure 2-41 How do you view the WPI Center as a potential partner in joint research? Responses by research areas for which there were 40 or more respondents were as follows.

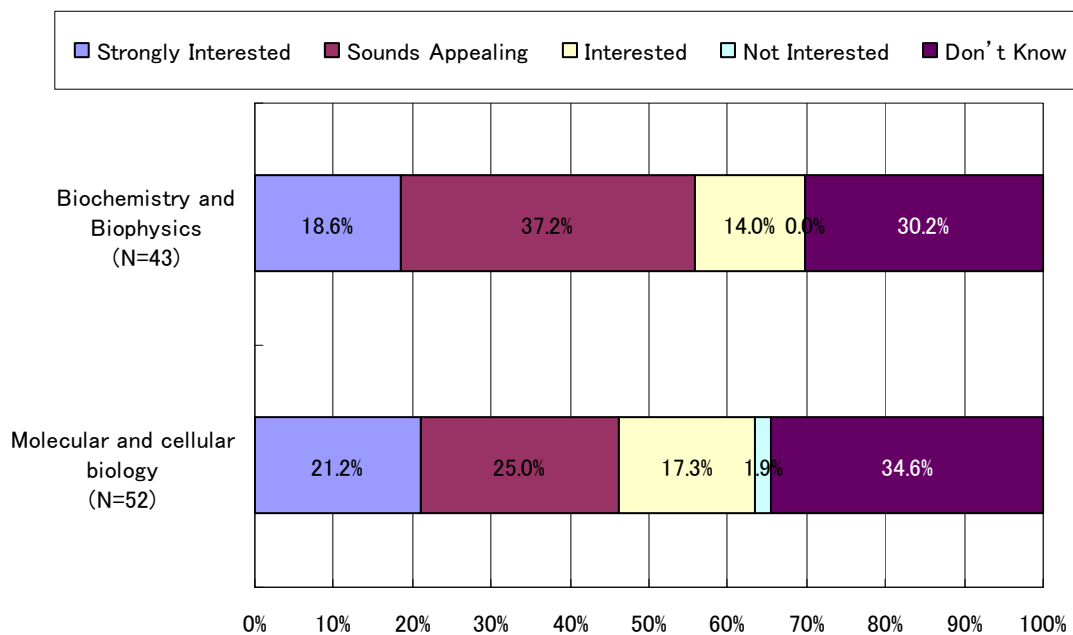


Figure 2-42 How do you view the WPI Center as a potential partner in joint research? (by main research area)

More than half responded either “strongly interested,” “sounds appealing,” or “interested” when asked about participation in WPI Center activities.

“Visit to collect information (e.g., participate in symposium)” was the most common activity the respondents desired for themselves or would recommend to others (students, colleagues, scientist acquaintances), followed by “stay at the Center for research work” and “be a member of the Center, including dual appointment.” Among activities desired by the respondents themselves, there was little difference between “stay at the Center for research work” and “be a member of the Center, including dual appointment.”

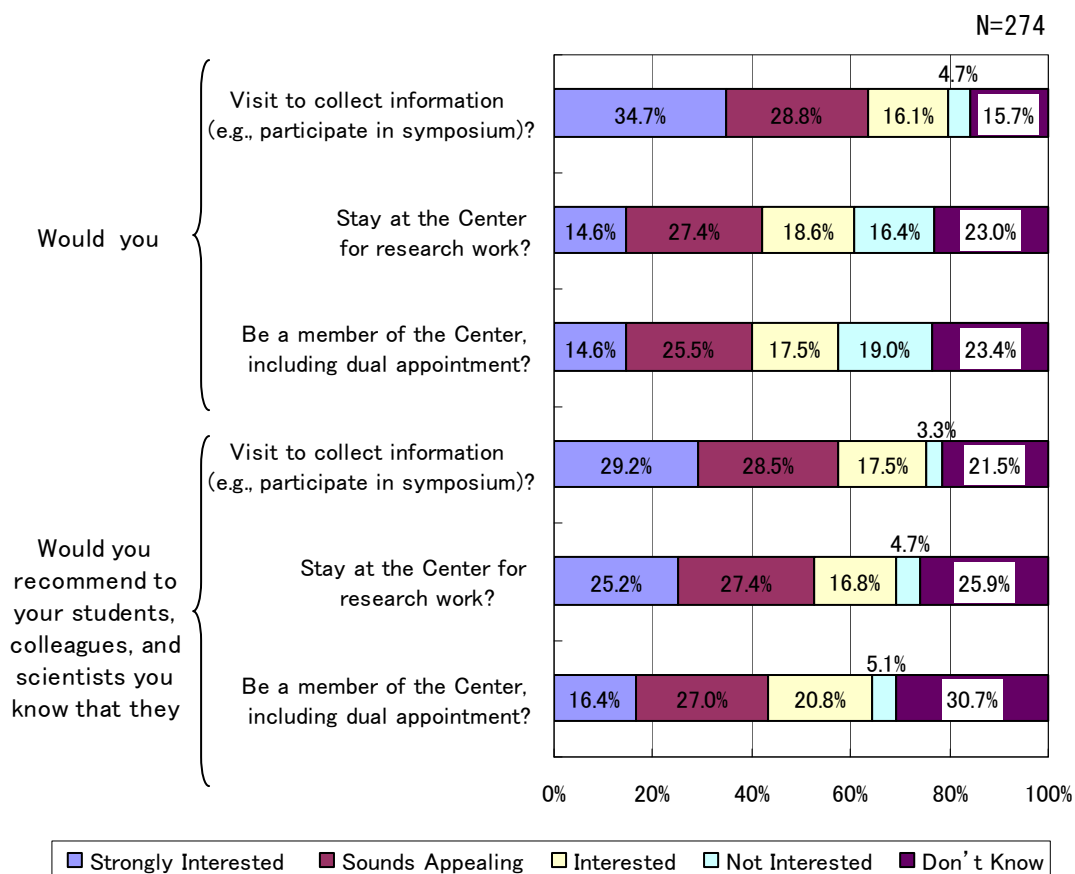


Figure 2-43 How do you view participating in the activities of the WPI Center?

Respondents who chose “strongly interested,” “sounds appealing,” or “interested” for “stay at the Center for research work” or “be a member of the Center, including dual appointment,” as activities either for their own participation in WPI Center activities or for recommending to students, colleagues, or scientist acquaintances, were asked the reason for their choice, with the following results.

“Because the Center’s research is attractive,” “because the level of the Center’s research is outstanding,” and “because the Center has excellent research facilities and equipment” were the most common reasons given.

Interest in new research fields, and research level were also given as write-in answers for “other.”

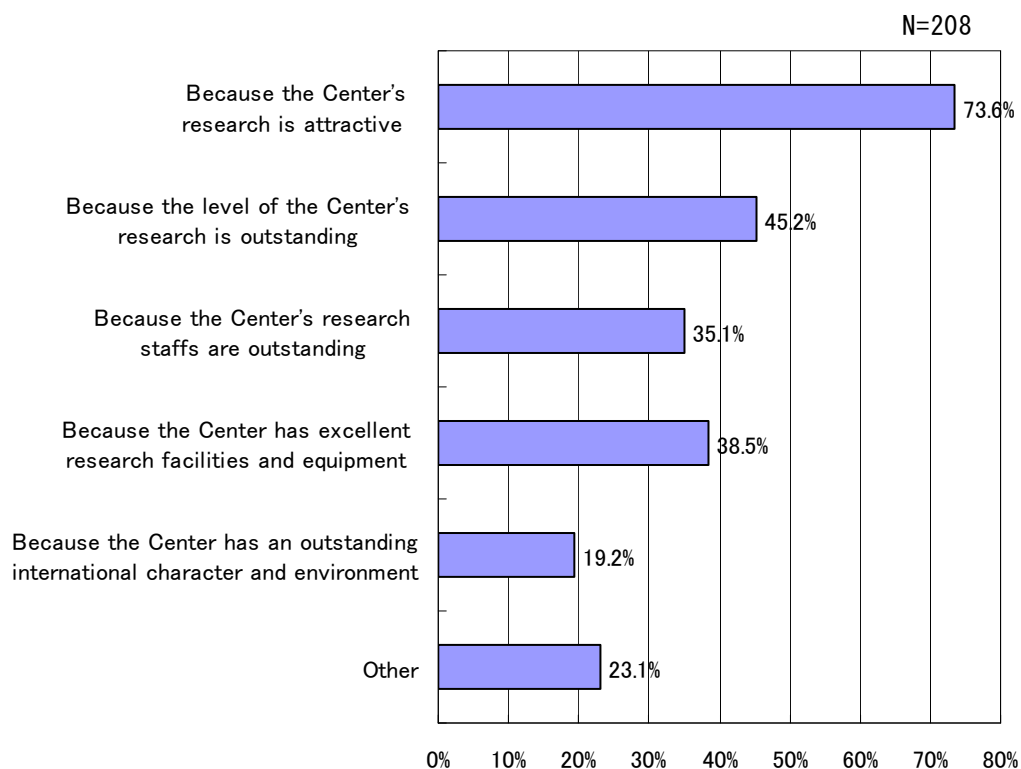


Figure 2-44 Why did you answer “strongly interested,” “sounds appealing,” or “interested” for “stay at the Center for research work” or “be a member of the Center, including dual appointment”?

Respondents who chose “not interested” rather than “strongly interested,” “sounds appealing,” or “interested” for “stay at the Center for research work” or “be a member of the Center, including dual appointment,” as activities either for their own participation in WPI Center activities or for recommending to students, colleagues, or scientist acquaintances, were asked the reason for their choice, with the following results.⁵

The number of responses was small, but of these the most common were “because I don’t know about the above matters” and “because I (including my family) am concerned about living in Japan or in the area of the Center.”

Write-in answers under “other” included not being able to leave the present situation, and having a specialty outside the research areas of the Center.

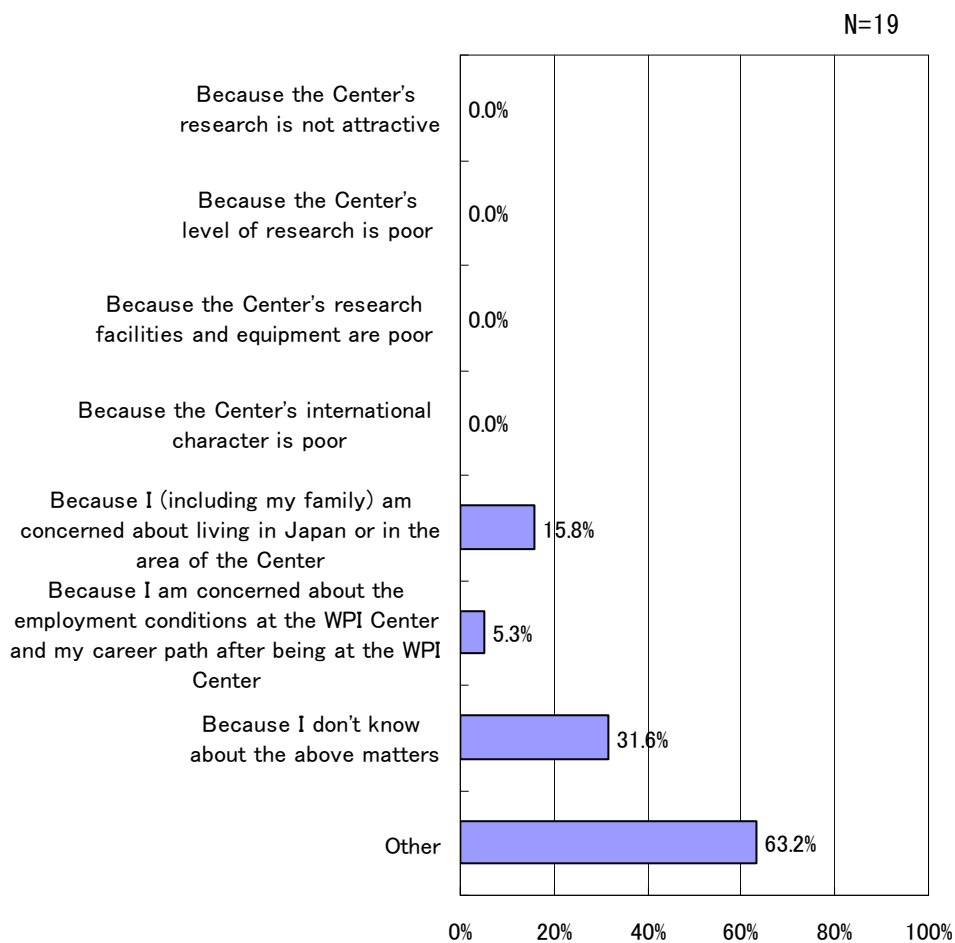


Figure 2-45 Why did you answer “not interested” for “stay at the Center for research work” or “be a member of the Center, including dual appointment”?

⁵ Strictly speaking, respondents were asked the reason for their choice in cases other than the following two.

(1) The respondent chose “strongly interested,” “sounds appealing,” or “interested” for “stay at the Center for research work” or “be a member of the Center, including dual appointment” as activities either for his/her own participation in WPI Center activities or for recommending to students, colleagues, or scientist acquaintances.

(2) The respondent chose “don’t know” for both “stay at the Center for research work” and “be a member of the Center, including dual appointment,” as activities either for his/her own participation in WPI Center activities or for recommending to students, colleagues, or scientist acquaintances.

2-4-5 Advice for the WPI Center

In response to a request for advice on how to make the WPI Center a global research center, the main suggestions were along the following lines.⁶

- Plan symposiums and similar events.
- Strengthen publicity, advertising, and information dissemination.
- Hire more young scientists and overseas scientists.
- Take part in international conferences and dispatch researchers, etc., as an organization.
- Set a clear vision and present it in readily understood terms.
- Boost ties with overseas research organizations.

⁶ This is a sampling of different ideas, drawn mainly from those given by multiple respondents.

2-5 Immunology Frontier Research Center (IFReC)

2-5-1 Main research area, nationality, and research countries of respondents

The main research areas of respondents, their nationalities, and countries where they have performed research are as indicated below.

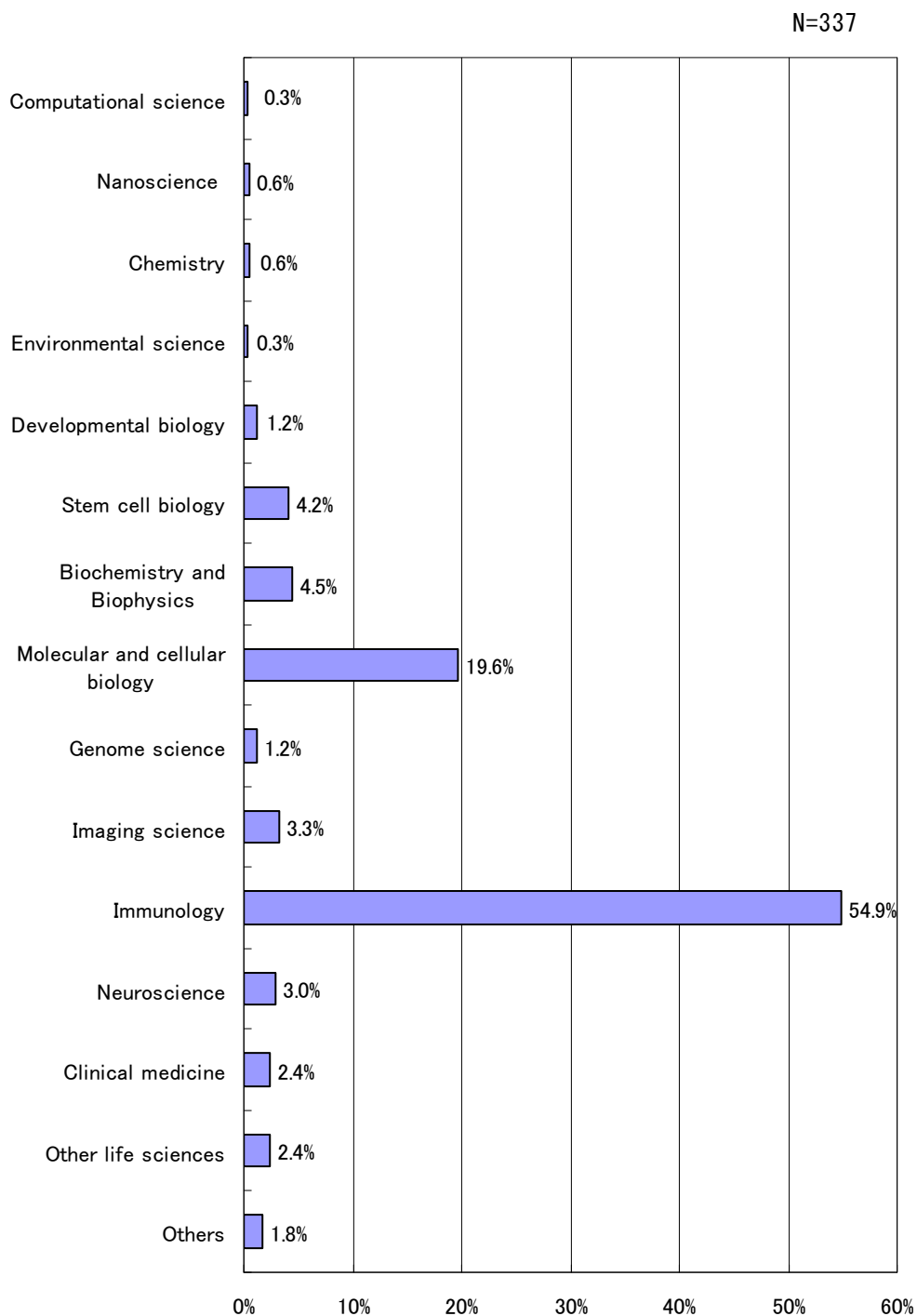


Figure 2-46 Your Main Research Area

N=337

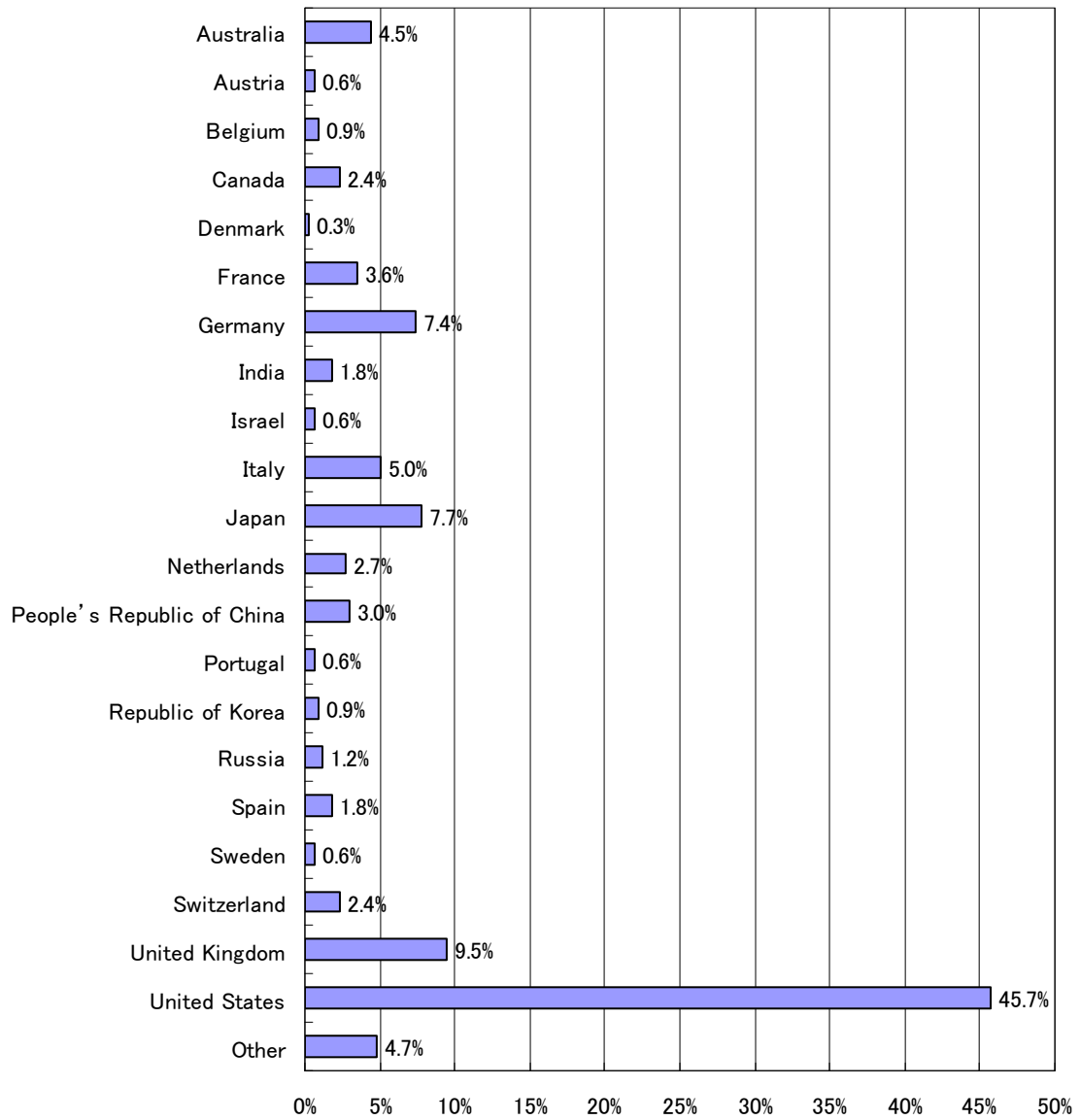


Figure 2-47 Your Nationality

N=337

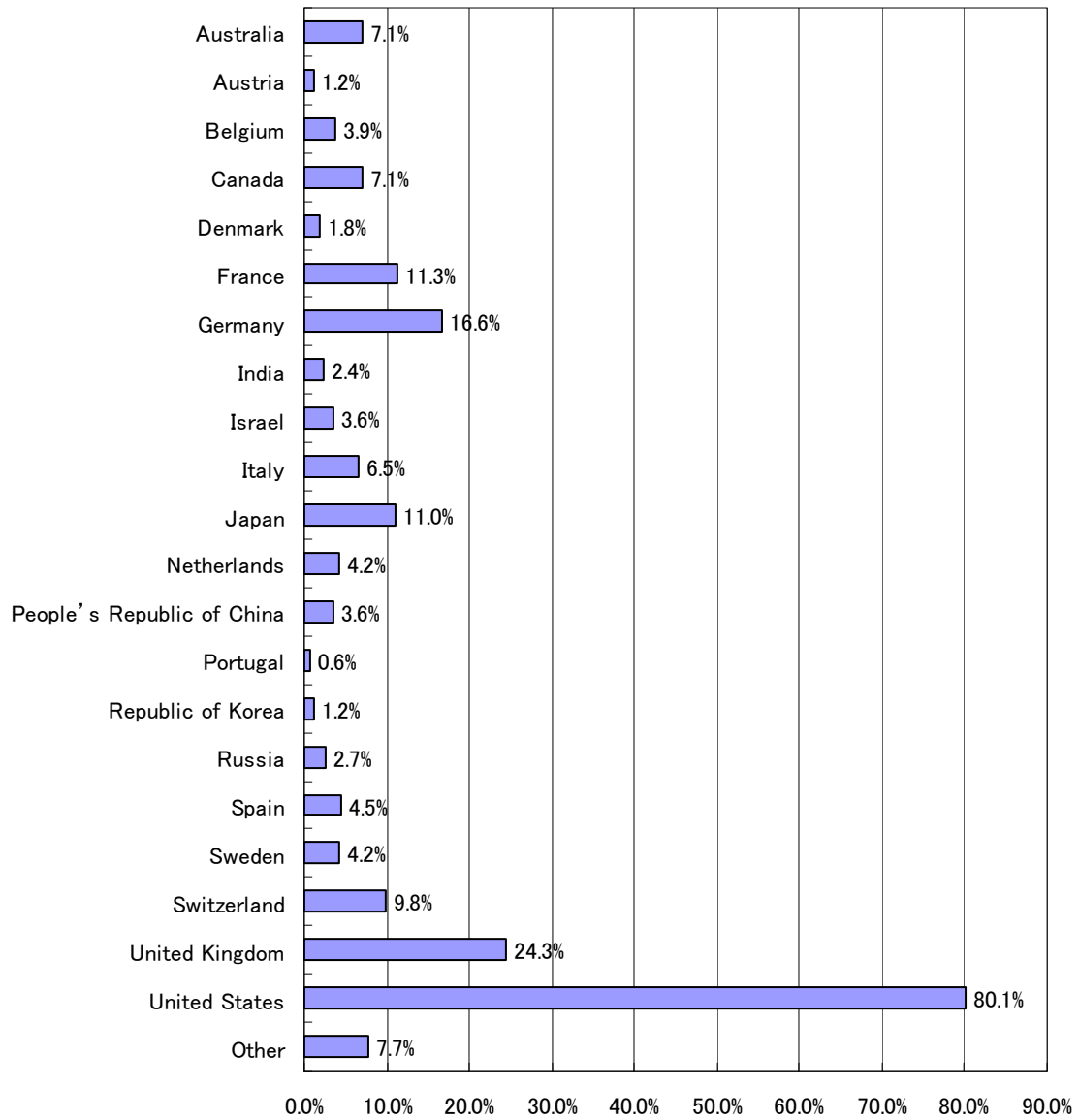


Figure 2-48 Countries Where You Have Performed Research

2-5-2 Awareness and knowledge of the WPI Center

Nearly half of the respondents said they did not know about the Center. The items known in order of familiarity were the director’s name, nature of the research, name of the Center, and the WPI Program. A large number of respondents knew the director’s name, and this is characteristic of this Center.

The degree of familiarity varied largely depending on the main research area of respondents.

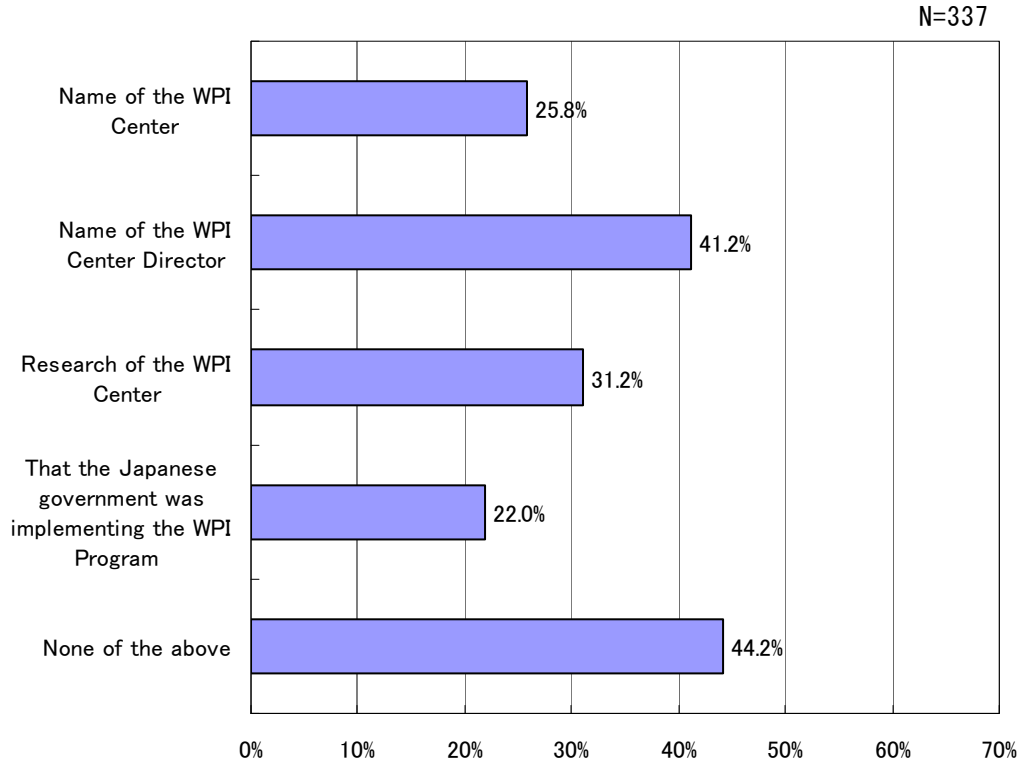


Figure 2-49 Before receiving this questionnaire, which of the following did you know about the WPI Center?

Responses by research areas for which there were 40 or more respondents were as follows.

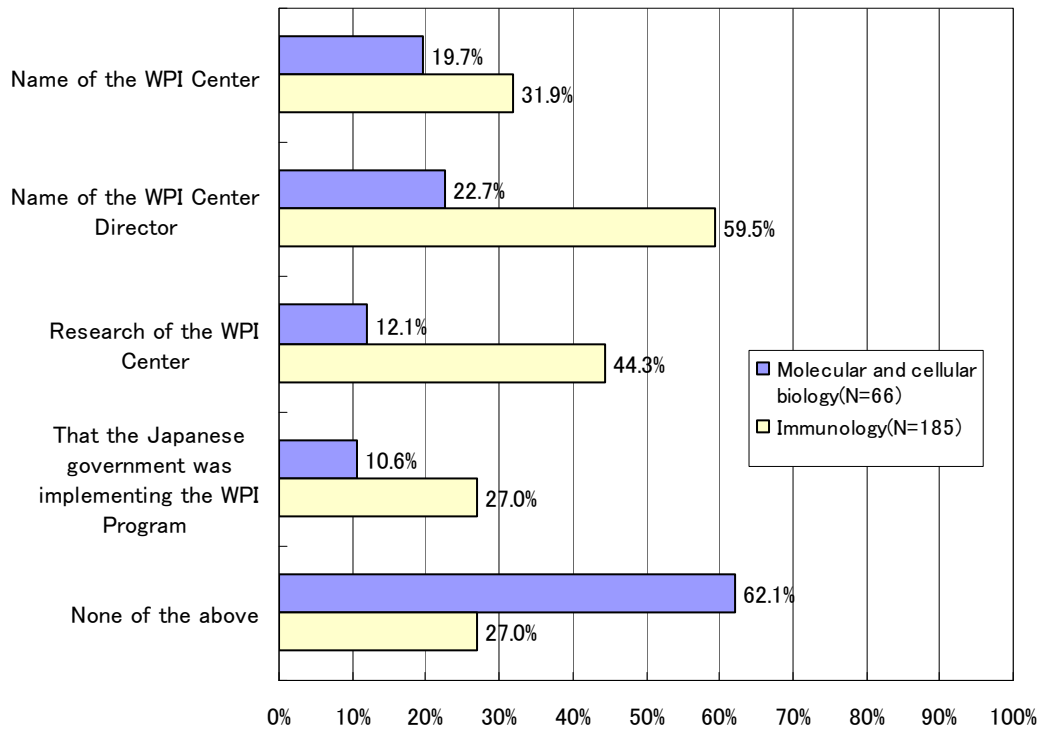


Figure 2-50 Before receiving this questionnaire, which of the following did you know about the WPI Center? (by main research area)

When those that knew about the Center were asked about the initial source of their knowledge, the results were as follows.

The most frequent response was “mentioned in academic paper or other publication; profiled in scientific journal.”

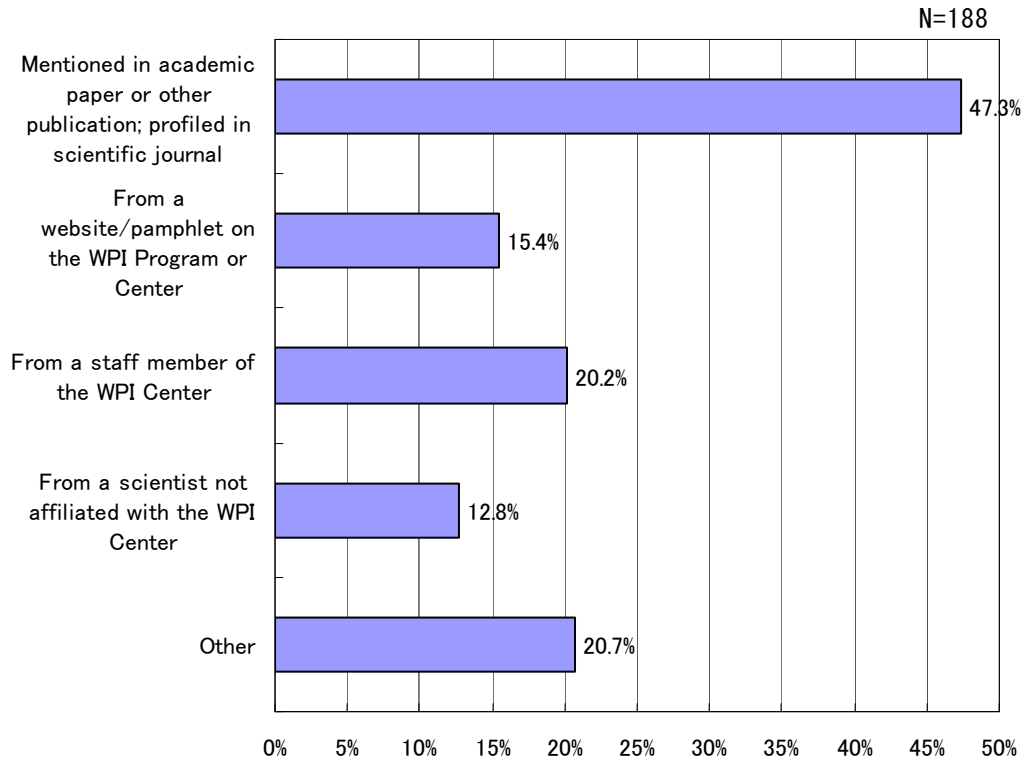


Figure 2-51 How did you first learn about the WPI Center?

Those that knew about the Center were asked about their involvement in the Center research, etc., with the following results.

Most said they had not had any involvement, even if they knew about the Center.

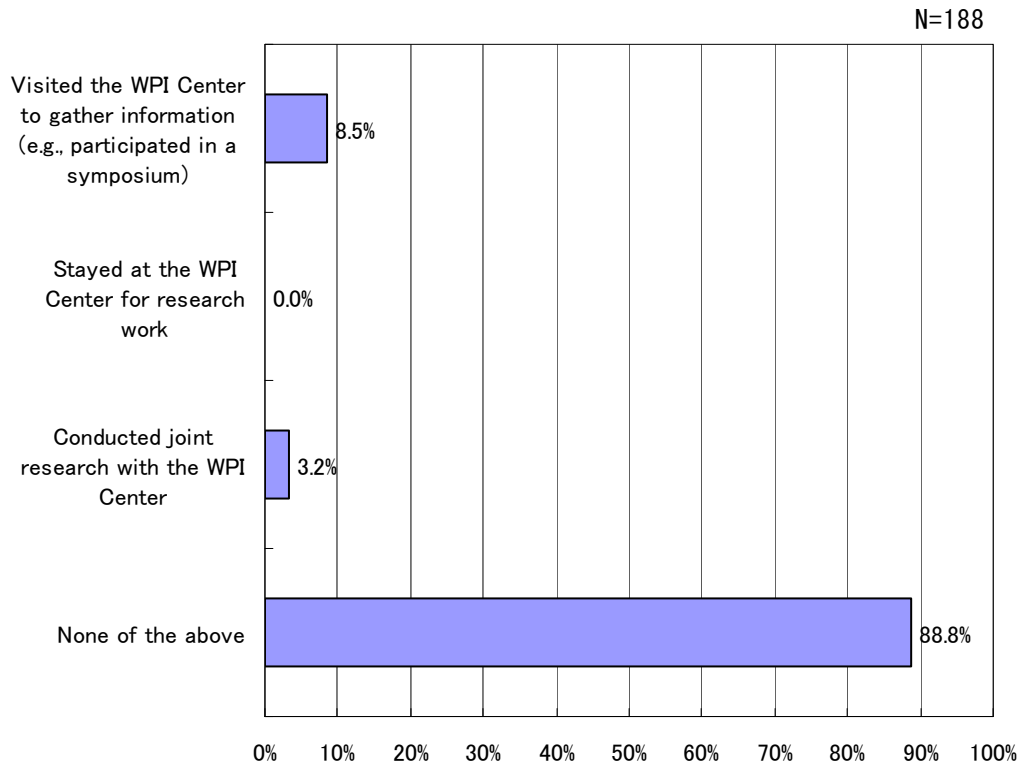


Figure 2-52 What has been your involvement in the WPI Center?

2-5-3 Evaluation of the WPI Center

As overall trends in evaluations of this WPI Center, “outstanding” and “don’t know” were the two frequent responses while “average” and “poor” responses were relatively few.

“Level of research,” “research personnel,” and “work to pioneer new interdisciplinary research fields by bringing together various existing fields” received many “outstanding” responses.

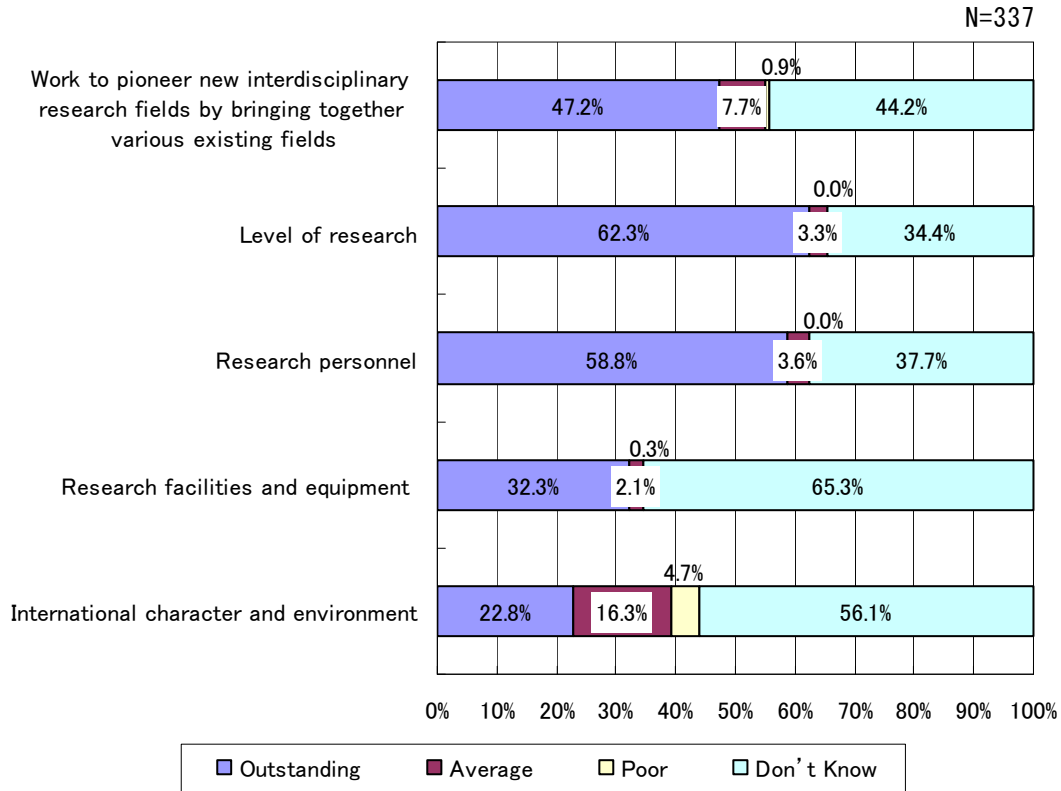


Figure 2-53 Please evaluate the WPI Center in the following areas, as able. Please select one answer for each area

2-5-4 Joint research with and participation in the WPI Center

“Strongly interested” was the most frequent response to the question about joint research with the WPI Center, with that and “sounds appealing” accounting for two-thirds of the responses.

Around 20 percent of respondents indicated “don’t know.” Variation by major area of research of respondents was large.

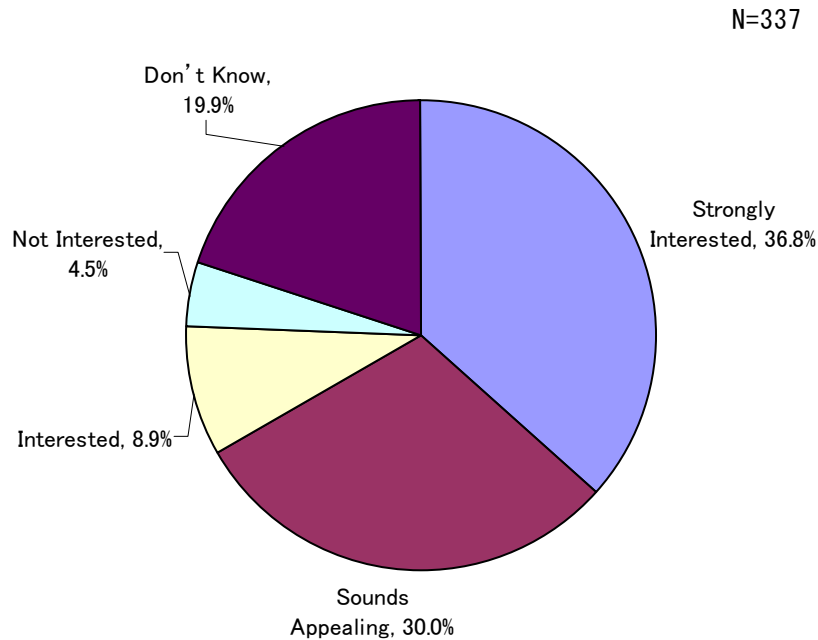


Figure 2-54 How do you view the WPI Center as a potential partner in joint research? Responses by research areas for which there were 40 or more respondents were as follows.

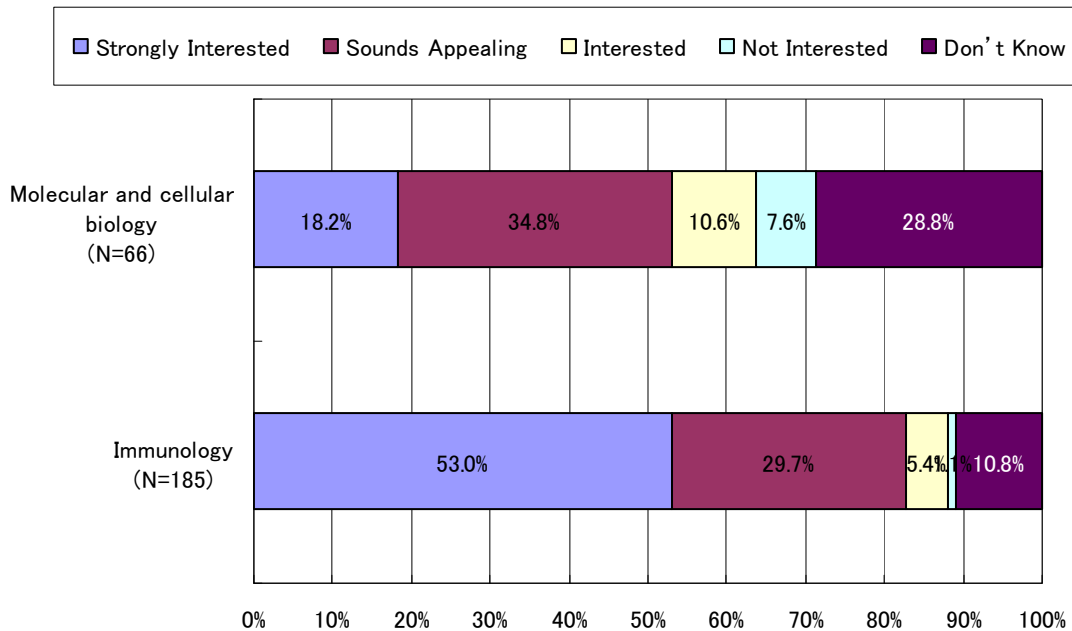


Figure 2-55 How do you view the WPI Center as a potential partner in joint research? (by main research area)

More than half responded either “strongly interested,” “sounds appealing,” or “interested” when asked about participation in WPI Center activities.

“Visit to collect information (e.g., participate in symposium)” was the most common activity the respondents desired for themselves or would recommend to others (students, colleagues, scientist acquaintances), followed by “stay at the Center for research work” and “be a member of the Center, including dual appointment.” Among activities desired by the respondents themselves, there was little difference between “stay at the Center for research work” and “be a member of the Center, including dual appointment.”

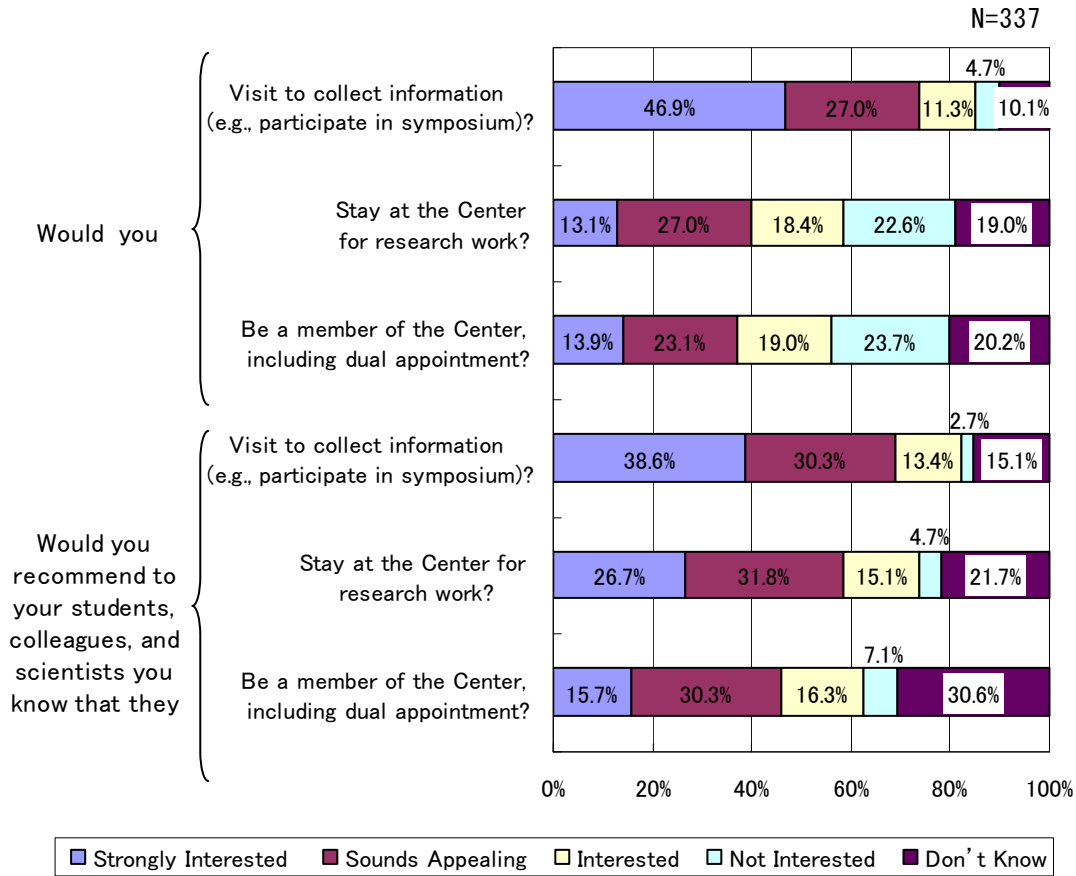


Figure 2-56 How do you view participating in the activities of the WPI Center?

Respondents who chose “strongly interested,” “sounds appealing,” or “interested” for “stay at the Center for research work” or “be a member of the Center, including dual appointment,” as activities either for their own participation in WPI Center activities or for recommending to students, colleagues, or scientist acquaintances, were asked the reason for their choice, with the following results.

“Because the level of the Center’s research is outstanding,” “because the Center’s research is attractive,” and “because the Center’s research staffs are outstanding” were the most common reasons given.

Interest in new research fields, and research level were also given as write-in answers for “other.”

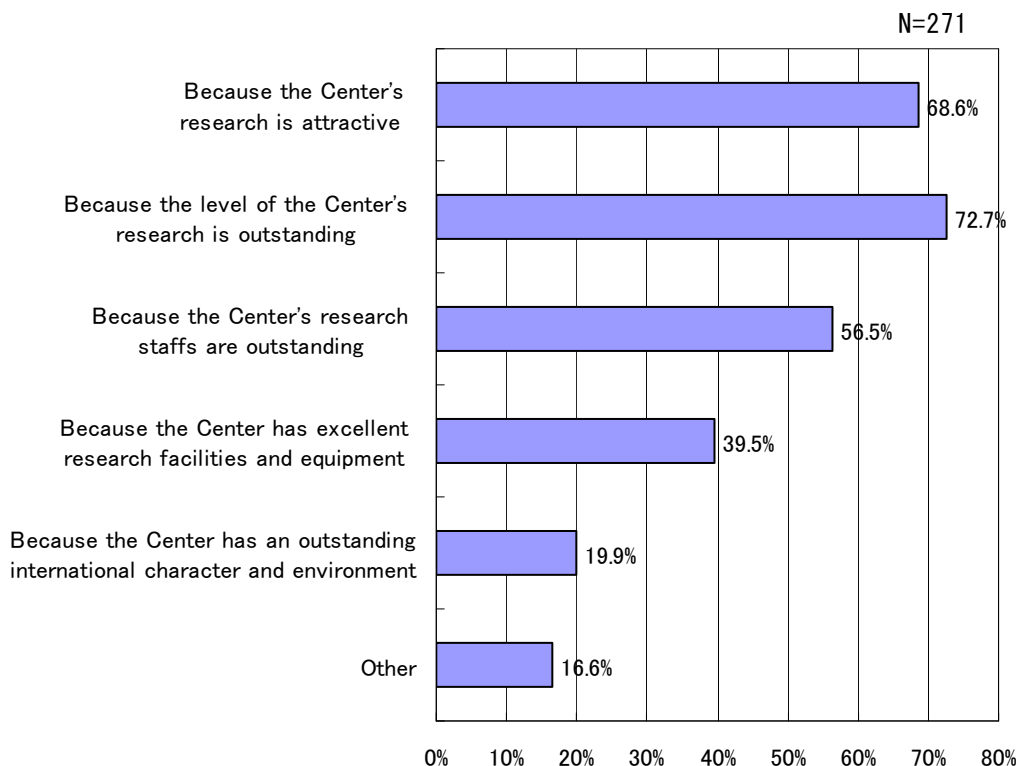


Figure 2-57 Why did you answer “strongly interested,” “sounds appealing,” or “interested” for “stay at the Center for research work” or “be a member of the Center, including dual appointment”?

Respondents who chose “not interested” rather than “strongly interested,” “sounds appealing,” or “interested” for “stay at the Center for research work” or “be a member of the Center, including dual appointment,” as activities either for their own participation in WPI Center activities or for recommending to students, colleagues, or scientist acquaintances, were asked the reason for their choice, with the following results.⁷

The number of responses was small, but of these “because I don’t know about the above matters” was the most common reason given.

Write-in answers under “other” included not being able to leave the present situation, and having a specialty outside the research areas of the Center.

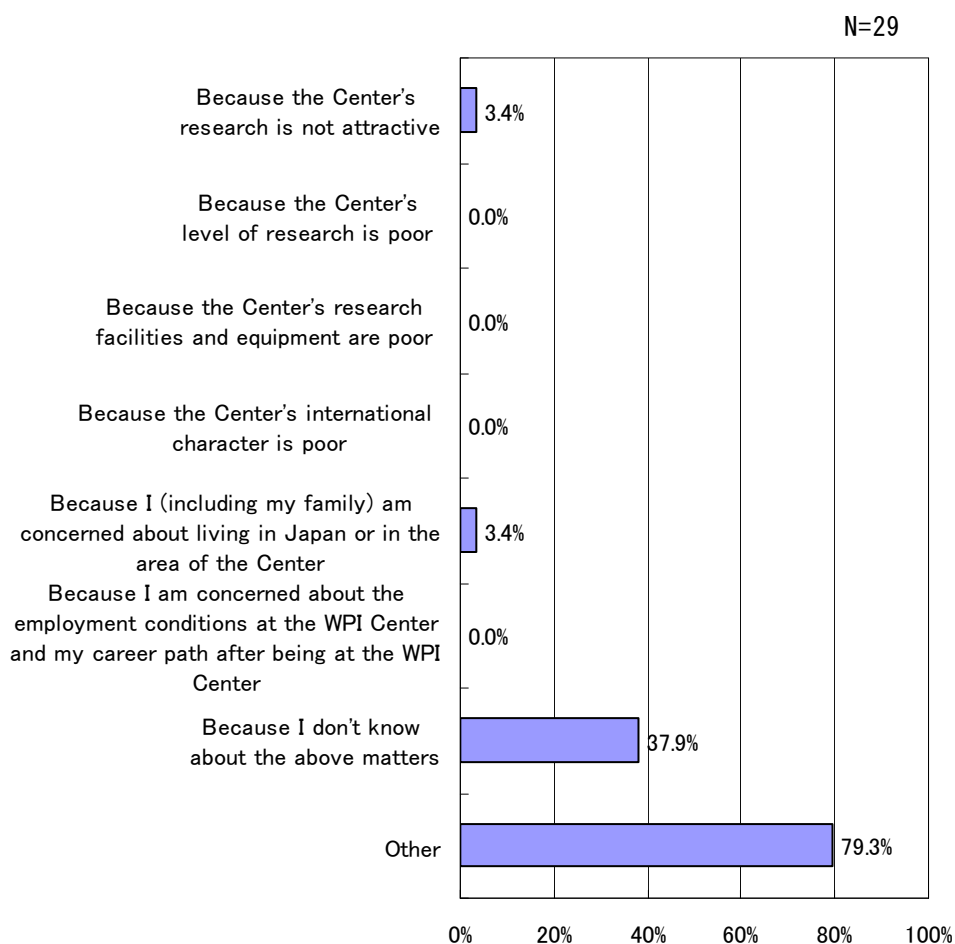


Figure 2-58 Why did you answer “not interested” for “stay at the Center for research work” or “be a member of the Center, including dual appointment”?

⁷ Strictly speaking, respondents were asked the reason for their choice in cases other than the following two.

(1) The respondent chose “strongly interested,” “sounds appealing,” or “interested” for “stay at the Center for research work” or “be a member of the Center, including dual appointment” as activities either for his/her own participation in WPI Center activities or for recommending to students, colleagues, or scientist acquaintances.

(2) The respondent chose “don’t know” for both “stay at the Center for research work” and “be a member of the Center, including dual appointment,” as activities either for his/her own participation in WPI Center activities or for recommending to students, colleagues, or scientist acquaintances.

2-5-5 Advice for the WPI Center

In response to a request for advice on how to make the WPI Center a global research center, the main suggestions were along the following lines.⁸

- Plan symposiums and similar events.
- Strengthen publicity, advertising, and information dissemination.
- Hire more young scientists and overseas scientists.
- Increase exchanges and ties with overseas research organizations and scientists.
- Be active in giving presentations at international conferences and in publishing papers.
- Make the research environment more global, such as by everyday use of English.
- Organize information for more effective dissemination.
- Even though there are individual scientists who are well known, the Center needs to become better known as an institution.

⁸ This is a sampling of different ideas, drawn mainly from those given by multiple respondents.

 2-6 International Center for Materials Nanoarchitectonics (MANA)

2-6-1 Main research area, nationality, and research countries of respondents

The main research areas of respondents, their nationalities, and countries where they have performed research are as indicated below.

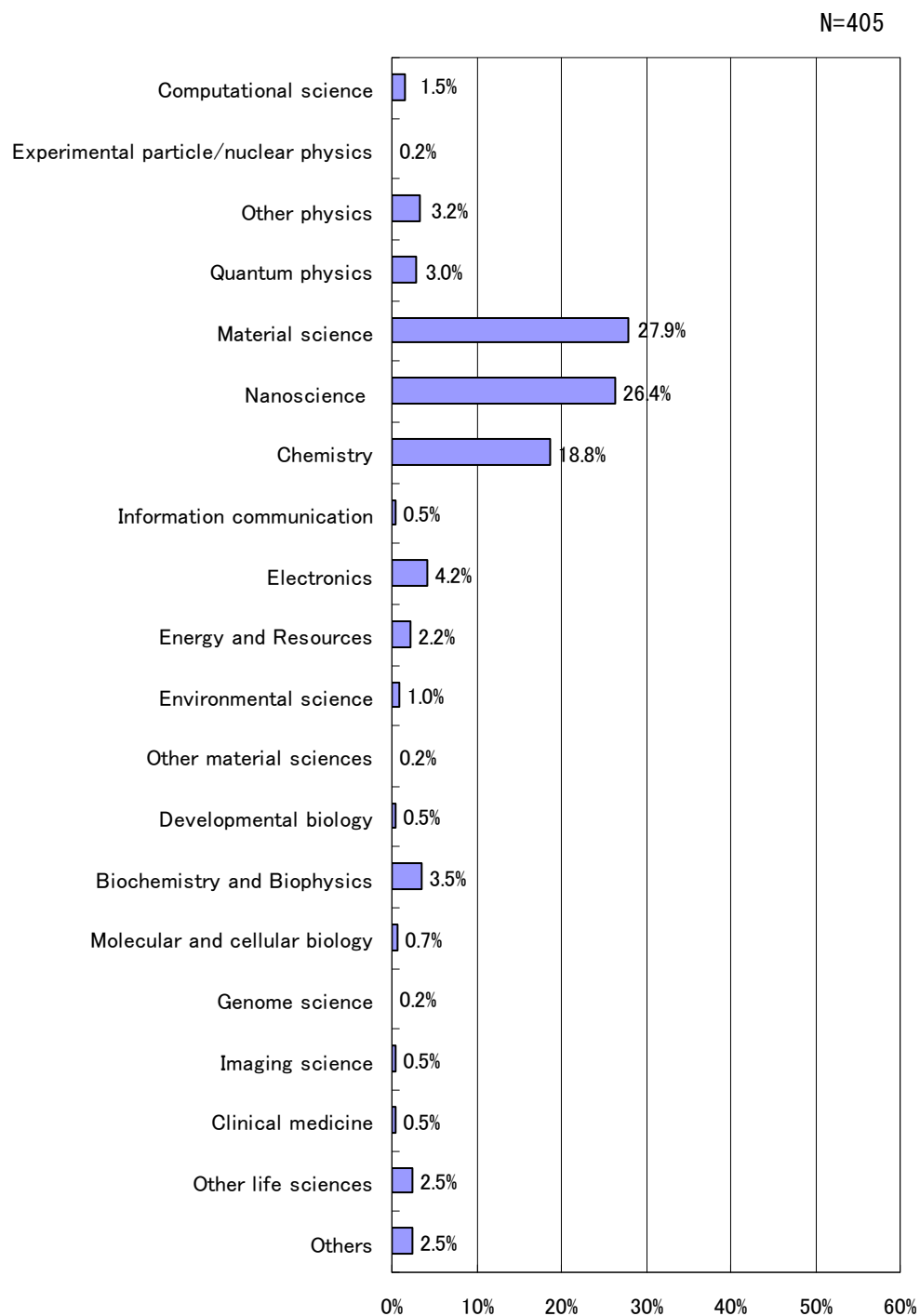


Figure 2-59 Your Main Research Area

N=405

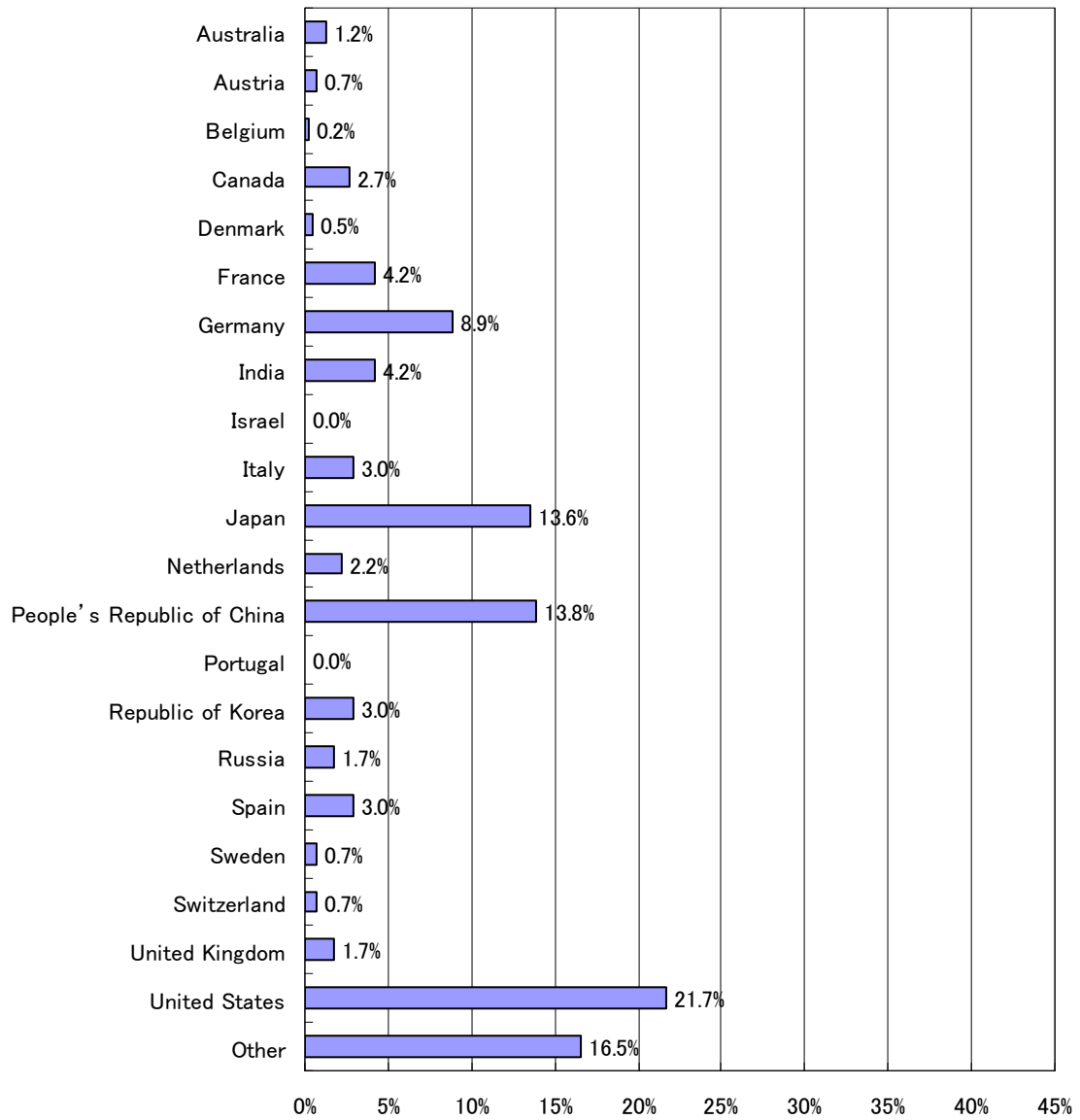


Figure 2-60 Your Nationality

N=405

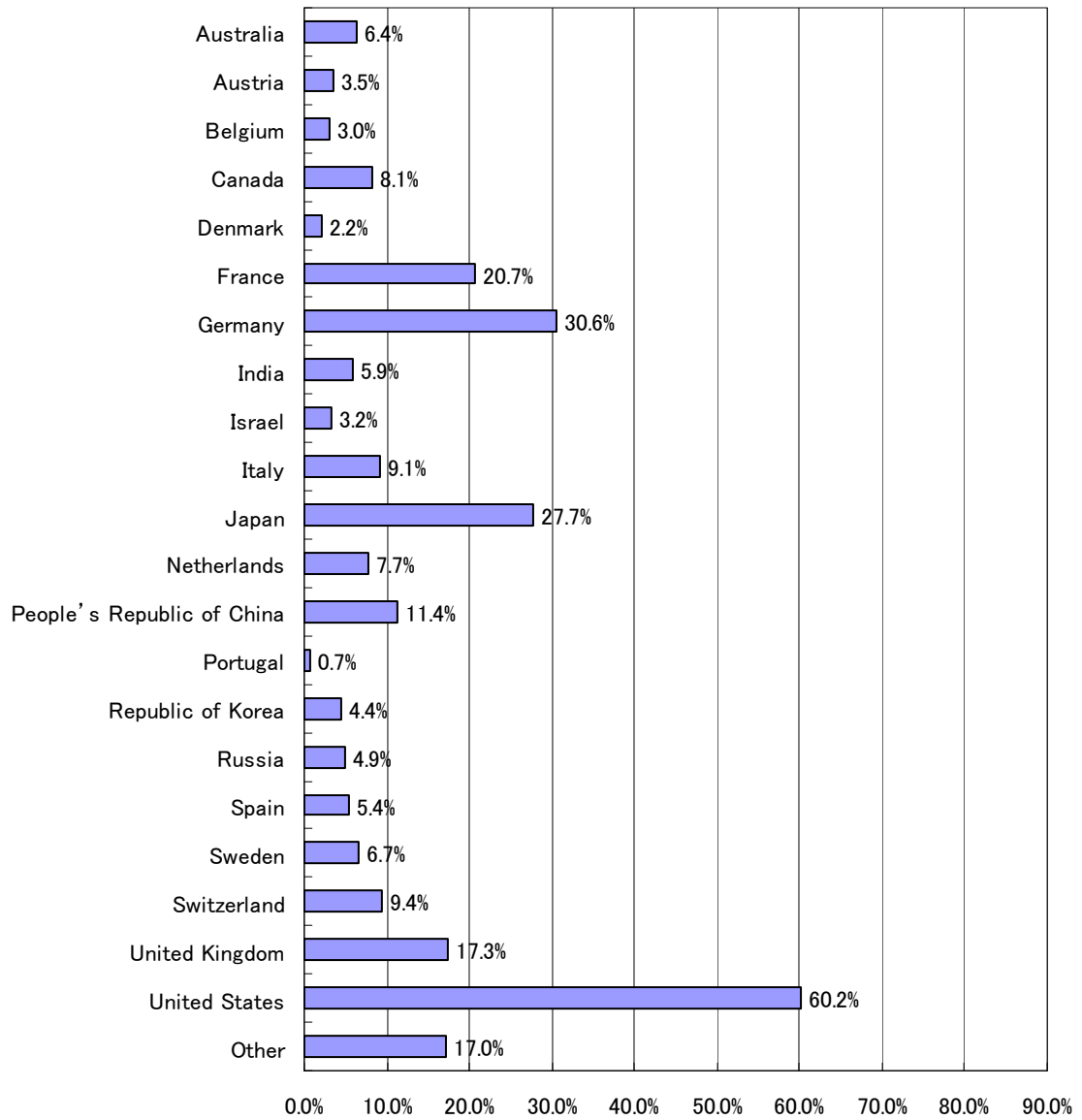


Figure 2-61 Countries Where You Have Performed Research

2-6-2 Awareness and knowledge of the WPI Center

More than half the respondents said they did not know about the Center. The most common items known were, in order, the WPI Program, the name of the Center, and the nature of the research. The director's name was the least commonly known item.

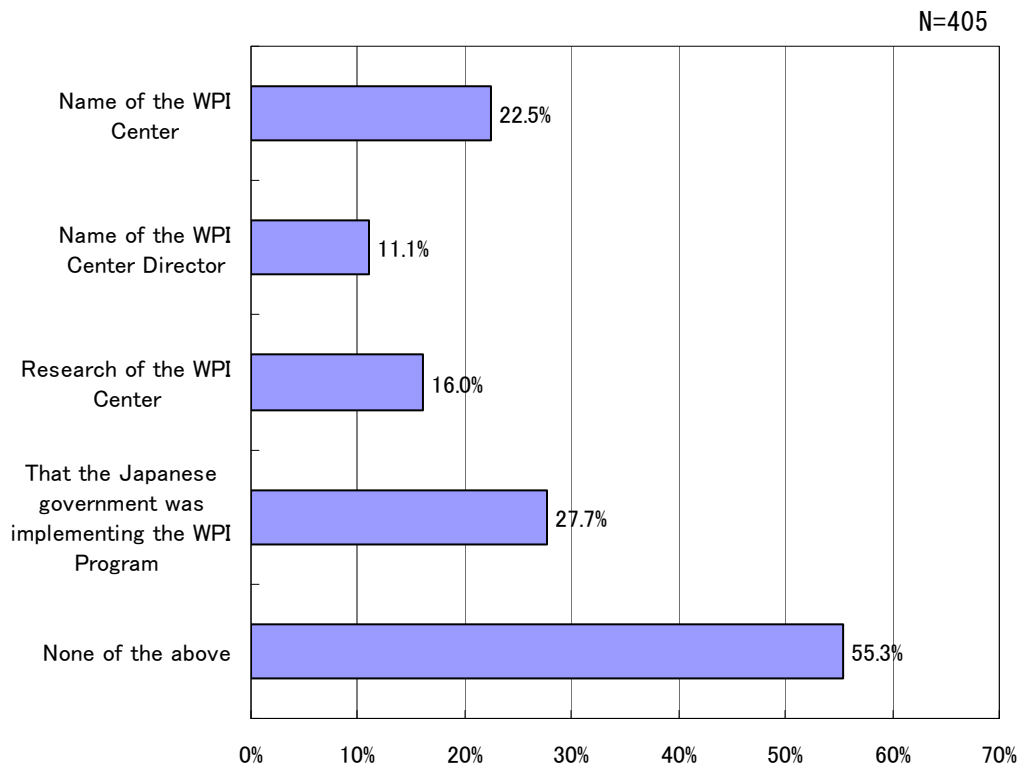


Figure 2-62 Before receiving this questionnaire, which of the following did you know about the WPI Center?

Responses by research areas for which there were 40 or more respondents were as follows.

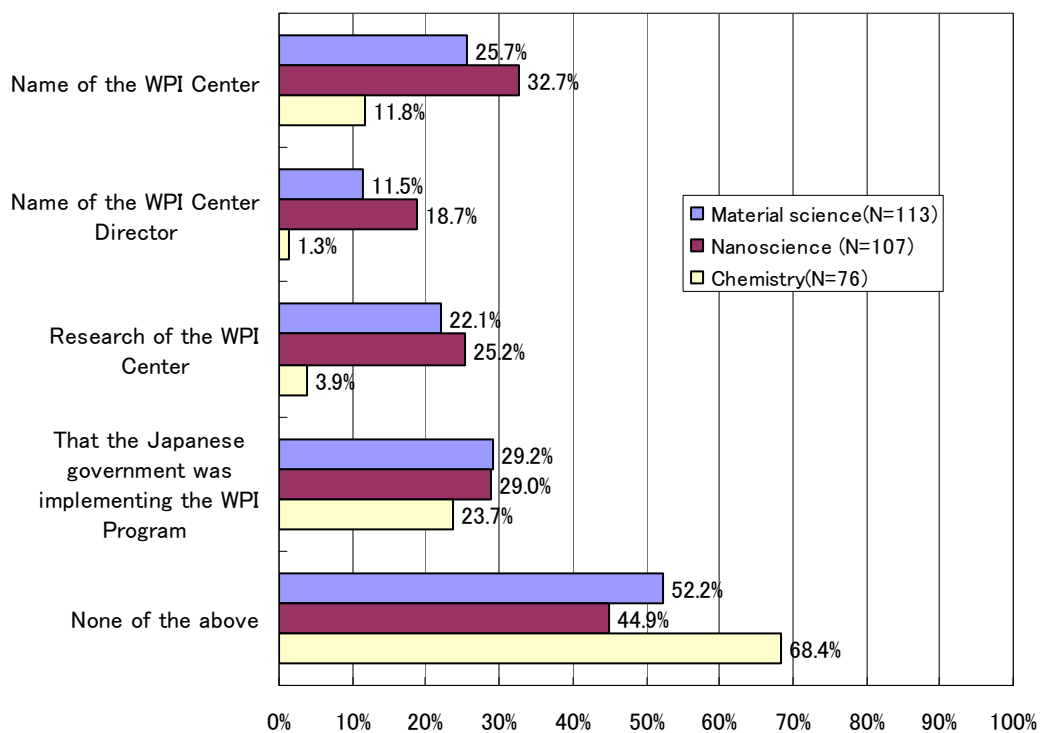


Figure 2-63 Before receiving this questionnaire, which of the following did you know about the WPI Center? (by main research area)

When those that knew about the Center were asked about the initial source of their knowledge, the results were as follows.

The most frequent response was “mentioned in academic paper or other publication; profiled in scientific journal.”

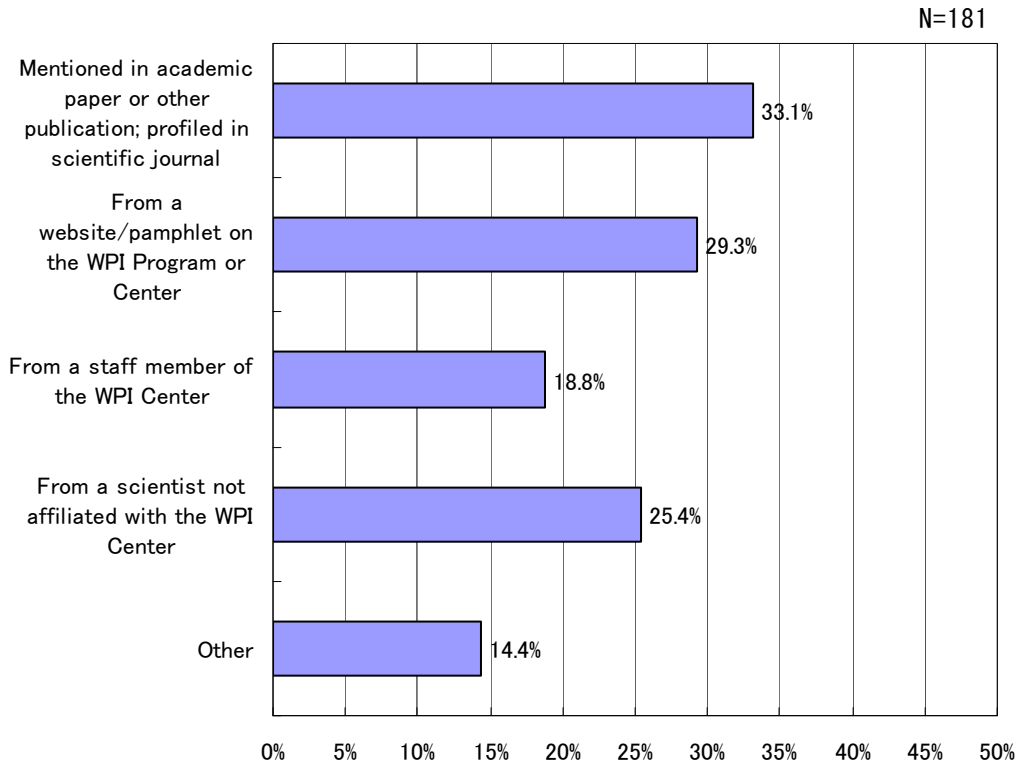


Figure 2-64 How did you first learn about the WPI Center?

Those that knew about the Center were asked about their involvement in the Center research, etc., with the following results.

Most said they had not had any involvement, even if they knew about the Center.

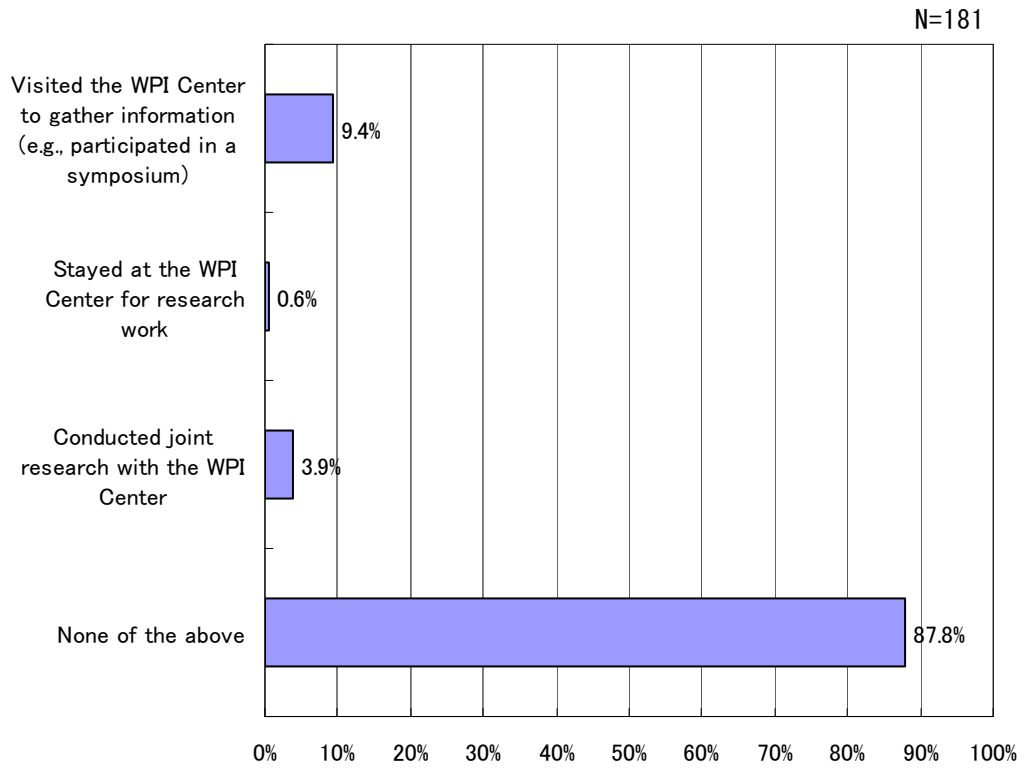


Figure 2-65 What has been your involvement in the WPI Center?

2-6-3 Evaluation of the WPI Center

As overall trends in evaluations of this WPI Center, “outstanding” and “don’t know” were the two frequent responses while “average” and “poor” responses were relatively few.

“Research facilities and equipment,” “work to pioneer new interdisciplinary research fields by bringing together various existing fields,” and “level of research” received the most “outstanding” responses.

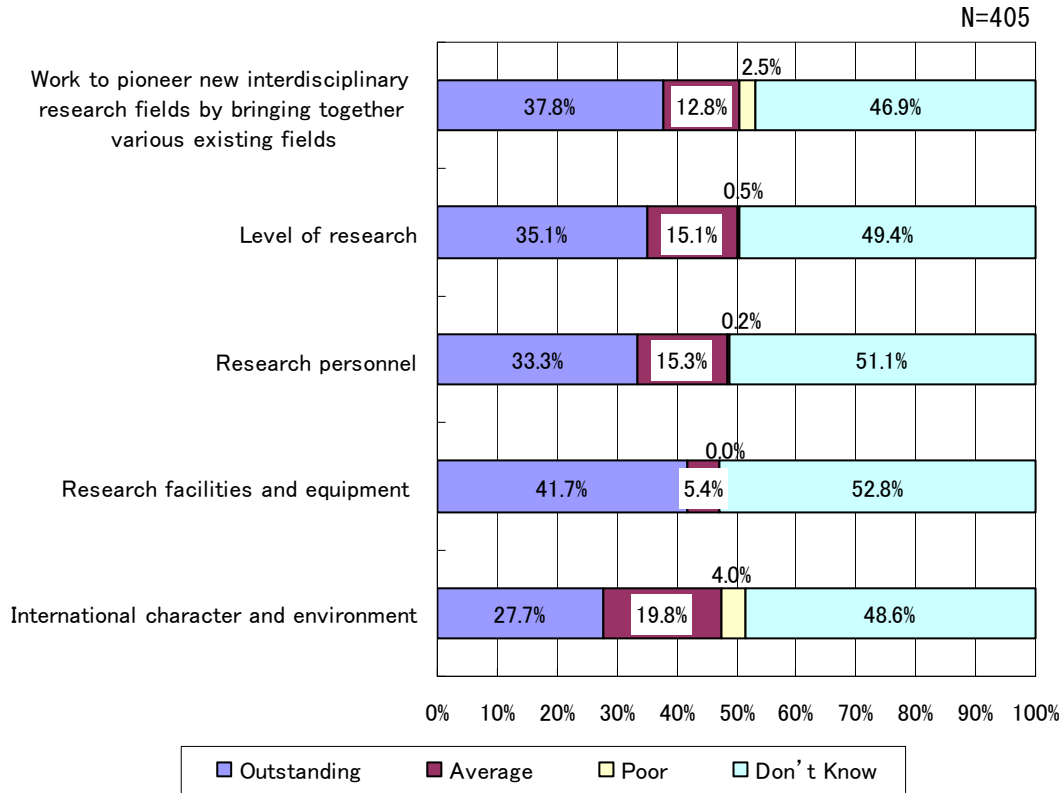


Figure 2-66 Please evaluate the WPI Center in the following areas, as able. Please select one answer for each area

2-6-4 Joint research with and participation in the WPI Center

“Sounds appealing” was the most frequent response to the question about joint research with the WPI Center, with that and “strongly interested” accounting for nearly two-thirds of the responses.

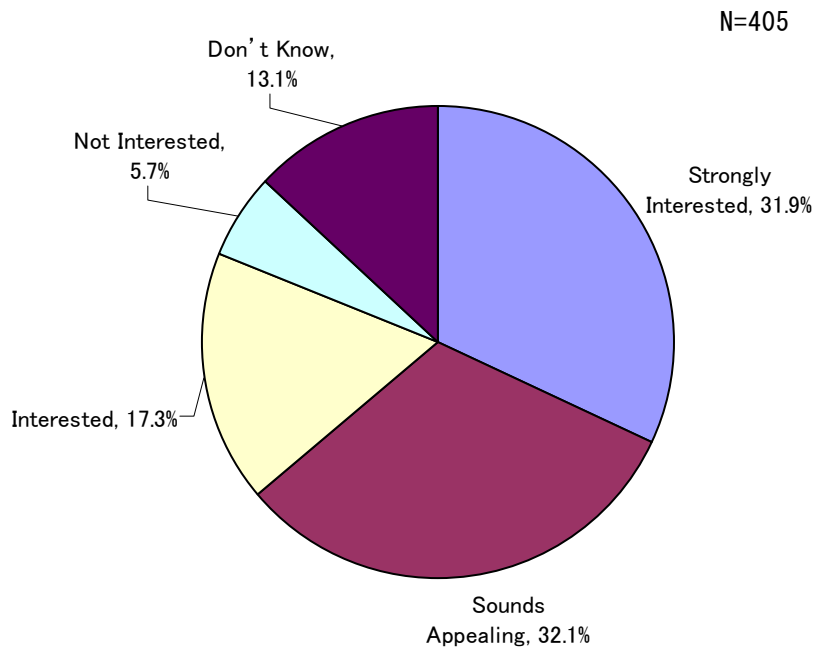


Figure 2-67 How do you view the WPI Center as a potential partner in joint research? Responses by research areas for which there were 40 or more respondents were as follows.

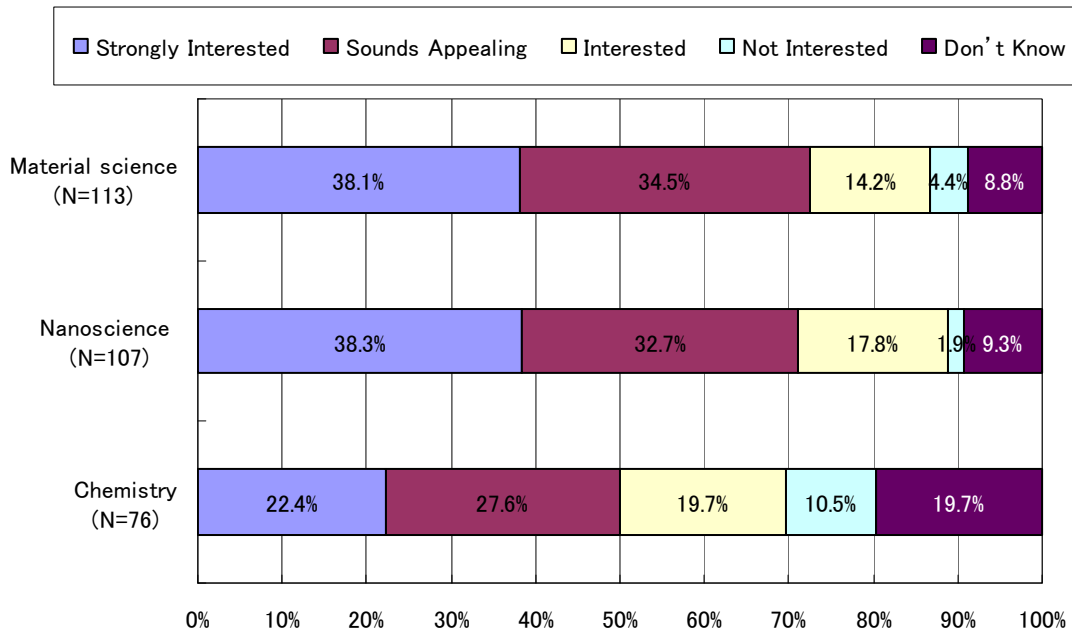


Figure 2-68 How do you view the WPI Center as a potential partner in joint research? (by main research area)

More than 60 percent responded either “strongly interested,” “sounds appealing,” or “interested” when asked about participation in WPI Center activities.

“Visit to collect information (e.g., participate in symposium)” was the most common activity the respondents desired for themselves or would recommend to others (students, colleagues, scientist acquaintances), followed by “stay at the Center for research work” and “be a member of the Center, including dual appointment.” Among activities desired by the respondents themselves, there was little difference between “stay at the Center for research work” and “be a member of the Center, including dual appointment.”

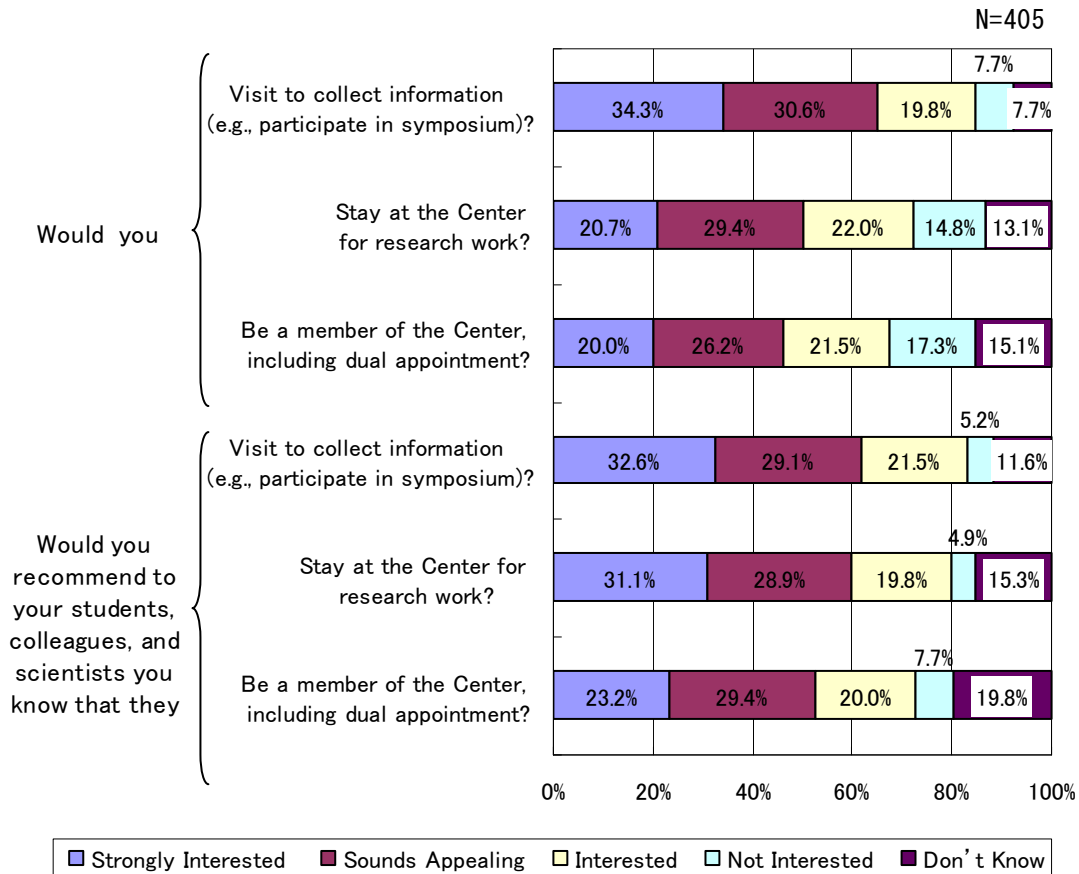


Figure 2-69 How do you view participating in the activities of the WPI Center?

Respondents who chose “strongly interested,” “sounds appealing,” or “interested” for “stay at the Center for research work” or “be a member of the Center, including dual appointment,” as activities either for their own participation in WPI Center activities or for recommending to students, colleagues, or scientist acquaintances, were asked the reason for their choice, with the following results.

“Because the Center’s research is attractive,” “because the Center has excellent research facilities and equipment,” and “because the level of the Center’s research is outstanding” were the most common reasons given.

Interest in new research fields was also indicated among the write-in answers for “other.”

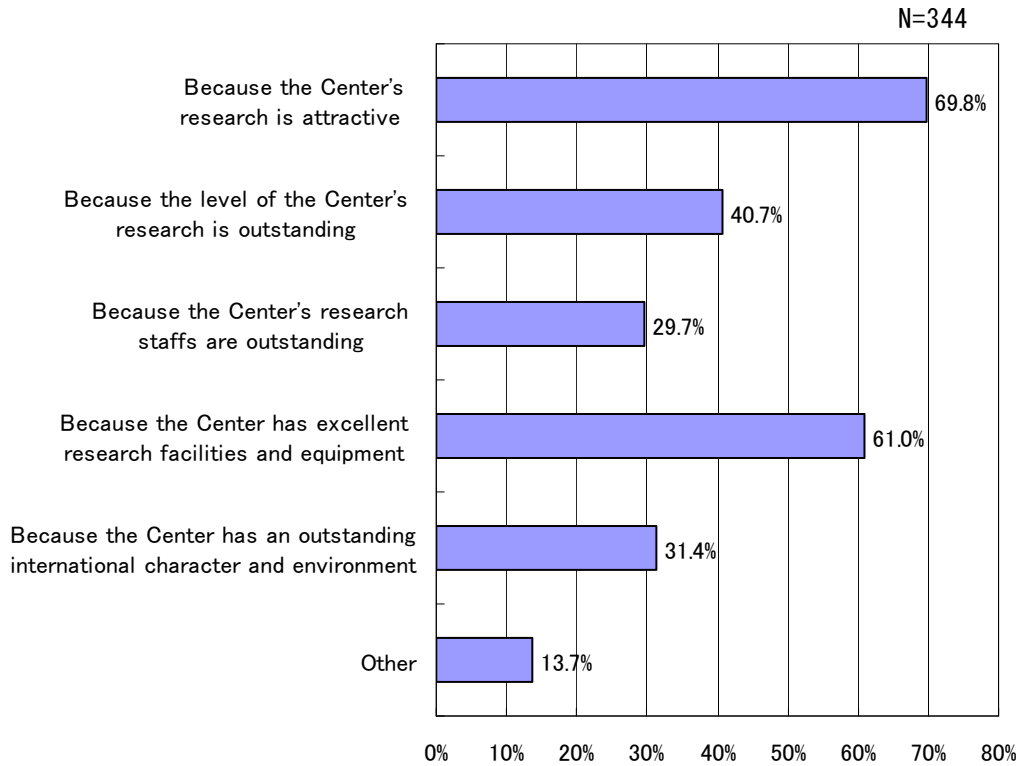


Figure 2-70 Why did you answer “strongly interested,” “sounds appealing,” or “interested” for “stay at the Center for research work” or “be a member of the Center, including dual appointment”?

Respondents who chose “not interested” rather than “strongly interested,” “sounds appealing,” or “interested” for “stay at the center for research work” or “be a member of the Center, including dual appointment,” as activities either for their own participation in WPI Center activities or for recommending to students, colleagues, or scientist acquaintances, were asked the reason for their choice, with the following results.⁹

The number of responses was small, but of these “because I don’t know about the above matters” was the most common reason given.

Write-in answers under “other” included not being able to leave the present situation, and having a specialty outside the research areas of the Center.

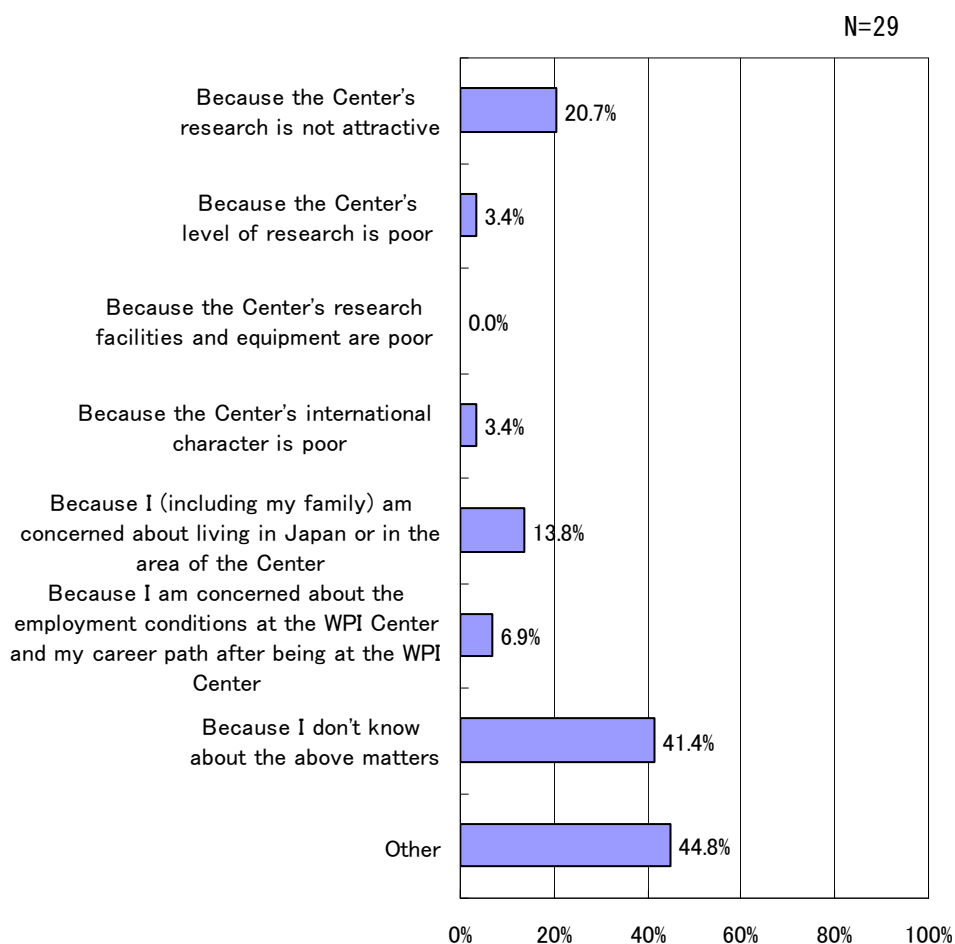


Figure 2-71 Why did you answer “not interested” for “stay at the Center for research work” or “be a member of the Center, including dual appointment”?

⁹ Strictly speaking, respondents were asked the reason for their choice in cases other than the following two.

(1) The respondent chose “strongly interested,” “sounds appealing,” or “interested” for “stay at the Center for research work” or “be a member of the Center, including dual appointment” as activities either for his/her own participation in WPI Center activities or for recommending to students, colleagues, or scientist acquaintances.

(2) The respondent chose “don’t know” for both “stay at the Center for research work” and “be a member of the Center, including dual appointment,” as activities either for his/her own participation in WPI Center activities or for recommending to students, colleagues, or scientist acquaintances.

2-6-5 Advice for the WPI Center

In response to a request for advice on how to make the WPI Center a global research center, the main suggestions were along the following lines.¹⁰

- Plan symposiums and similar events.
- Strengthen publicity, advertising, and information dissemination.
- Hire more young scientists and overseas scientists.
- Actively participate in and give presentations at international conferences, and actively publish papers.
- Increase exchanges and ties with overseas research organizations.
- Support and develop researchers by granting science awards, fellowships, etc.
- Introduce uniqueness and originality into research content and directions.
- Carry out long-term programs.

¹⁰ This is a sampling of different ideas, drawn mainly from those given by multiple respondents.

2-7 About the WPI Program

2-7-1 Other attractive research institutes

As an optional question, respondents were asked about other research institutes they find attractive besides the WPI Centers, and the reasons. The main opinions were as follows.¹¹

Table 2-1 Other Attractive Research Institutes

Research Area	Other Attractive Research Institutes
Astronomy and Astrophysics	ISAS, Max Planck Institute, The University of Tokyo, etc.
Biochemistry and Biophysics	RIKEN, Max Planck Institute, etc.
Chemistry	AIMR, AIST, Max Planck Institute, Institute for Molecular Science, Scripps Research Institute, etc.
Immunology	EMBL, HHMI, La Jolla Institute for Allergy & Immunology, RIKEN, etc.
Material science	NIMS, Max Planck Institute, etc.
Mathematical physics	CERN, KITP, Perimeter Institute, etc.
Mathematics	IAS, MSRI, etc.
Molecular and cellular biology	RIKEN, etc.
Nanoscience	AIST, Max Planck Institute, MIT, NIMS, RIKEN, etc.
Theoretical particle/nuclear physics	CERN, IAS, KEK, KITP, Perimeter Institute, Yukawa Institute, etc.

2-7-2 Views of and advice for the WPI Program

As another optional question, respondents were asked to give their views of the WPI Program and any advice they might have. The main opinions were as follows.¹²

- Did not know much about the WPI Program.
- More aggressive PR may be necessary.
- Some excellent work going on.
- Spending should be distributed to a wide range of institutions and research talent rather than being concentrated on a few programs.
- Devise ways of giving opportunities to (Japan's) young researchers.
- Proper, strict, and objective evaluation is needed.
- Exchanges and ties with overseas institutions and scientists need to be expanded.
- Make use of and develop young talent.
- More diversity of research talent (use of female and foreign scientists, etc.) is needed.
- Respect free and original thinking of researchers.
- The program having just started, it is too early to evaluate. Need to wait for emergence of results over a longer period.
- Make more global, such as by using English and improving information dissemination.
- Be active in giving presentations at international conferences.

¹¹ A sampling mainly of those indicated 3 to 10 times or more (number varies depending on the research area).

¹² Different views were extracted from those given by multiple respondents.

3 Conclusions

3-1 Awareness and Knowledge of the WPI Center

The number of “don’t know” responses about the WPI Centers varied from one Center to another, but was in the range of 34.4 to 65.7%. For some Centers, the name of the Center and nature of the research were better known than the director’s name, while the reverse was true for other Centers.

Knowledge of the Centers came most often from being mentioned in an academic paper or other publication, or profiled in a scientific journal. For one Center, however, “from a staff member of the WPI Center” and “from a scientist not affiliated with the WPI Center” were more common responses.

3-2 Evaluation of the WPI Center

In evaluating the WPI Centers, about half the respondents could not give an opinion, because of the large number who were not familiar with the Center itself.

Those who did give evaluations in many cases gave “outstanding” ratings. For some Centers, however, there were more “average” than “outstanding” ratings for international character and environment.

3-3 Joint Research with and Participation in the WPI Center

Regarding the desire for joint research with the WPI Center, “strongly interested” and “sounds appealing” were the most frequent responses, together making up from 69.7 to 85.2% of the total.

As for participation in WPI Center activities, “visit to collect information (e.g., participate in symposium)” was the most common activity the respondents desired for themselves or would recommend to others (students, colleagues, scientist acquaintances), followed by “stay at the Center for research work” and “be a member of the Center, including dual appointment.”

Of the activities the respondents themselves expressed a desire to participate in, the combined percentages for “strongly interested,” “sounds appealing,” and “interested” were 72.3 to 97.8% for “visit to collect information (e.g., participate in symposium),” 57.1 to 90.9% for “stay at the Center for research work,” and 54.6 to 71.5% for “be a member of the Center, including dual appointment.”

Among activities the respondents would recommend to others (students, colleagues, scientist acquaintances), the combined percentages for “strongly interested,” “sounds appealing,” and “interested” were 71.0 to 95.4% for “visit to collect information (e.g., participate in symposium),” 67.7 to 91.9% for “stay at the Center for research work,” and 59.1 to 79.6% for “be a member of the Center, including dual appointment.”

Of the reasons cited for choosing “strongly interested,” “sounds appealing,” or “interested,” the nature of the research was the most common reason for some Centers, while research level was the most common for other Centers.

Those not interested in participation gave such reasons as concern about living in Japan or in the area of the Center (including family), not being able to leave the present situation, and having a specialty outside the research areas of the Center.

3-4 Advice for the WPI Center

The following were most often given as advice on making the WPI Center a more global research center. Nearly the same kind of advice was given for all the Centers, pointing to the importance not only of research activities but of actively creating opportunities for outside exchange, disseminating information outside the Center, and developing the talents of young researchers.

- Plan symposiums and similar events.
- Strengthen publicity, advertising, and information dissemination.
- Promote globalization (e.g.: hold international conferences, invite and accept foreign scientists, dispatch Japanese scientists overseas, promote international exchanges and international joint research projects, issue information in English).
- Accept, develop, and make use of outstanding young research talent.

- Increase exchanges and ties with outside research organizations and scientists, including those overseas.

3-5 Views of and Advice for the WPI Program

When asked to give their views of the WPI Program and advice, many respondents said they had not been aware of the program in the first place, while others praised the outstanding work being undertaken. In addition, much of the advice was similar to that offered for individual Centers, such as the need for more aggressive PR and for exchanges and ties with overseas institutions and scientists, and the importance of developing young research talent.

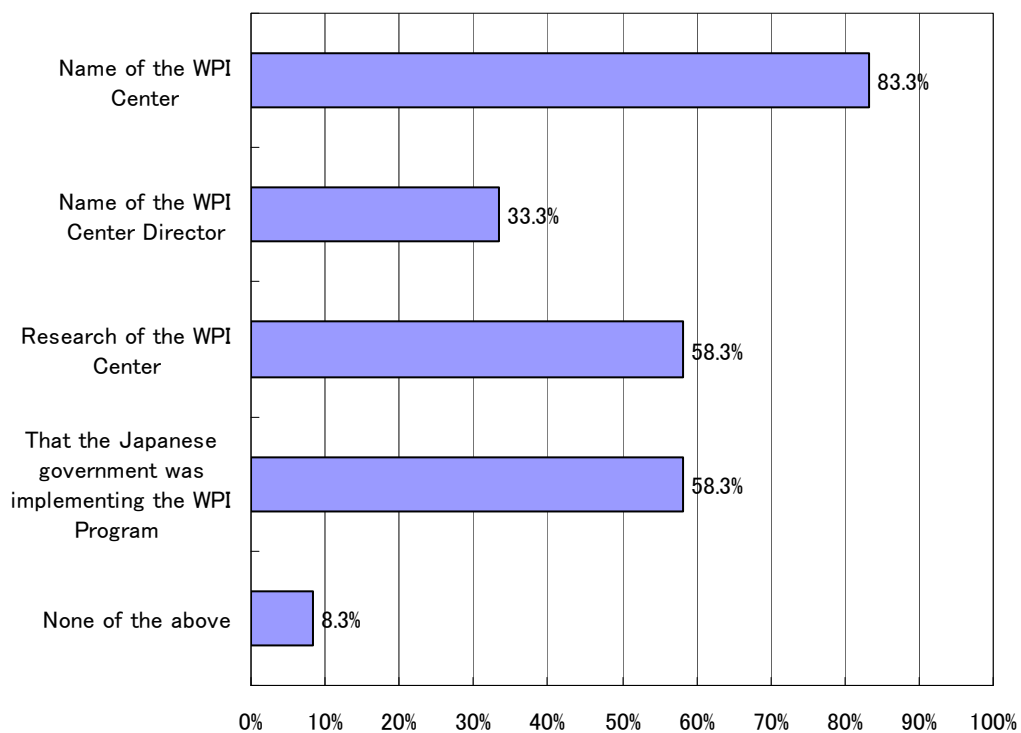
Another view offered was that research funds should be distributed to a wide range of institutions and research talent rather than being concentrated on a few programs.

Additional Data

Totals for Leading Scientists Only: Awareness and Knowledge

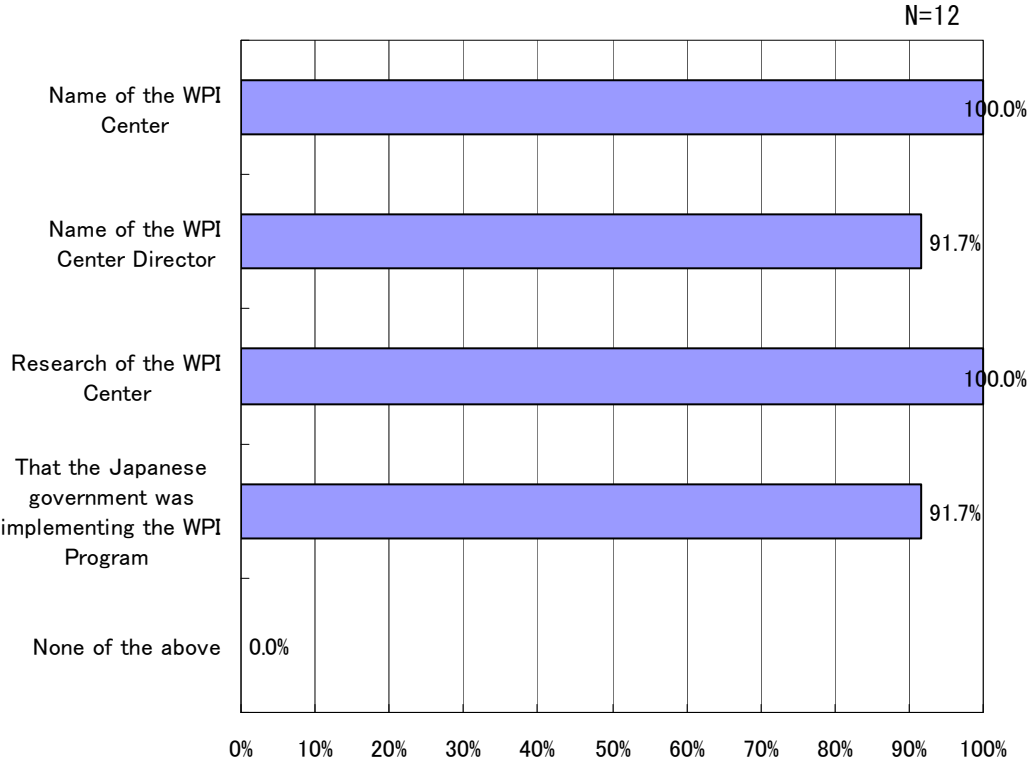
Advanced Institute for Materials Research (AIMR)

N=12



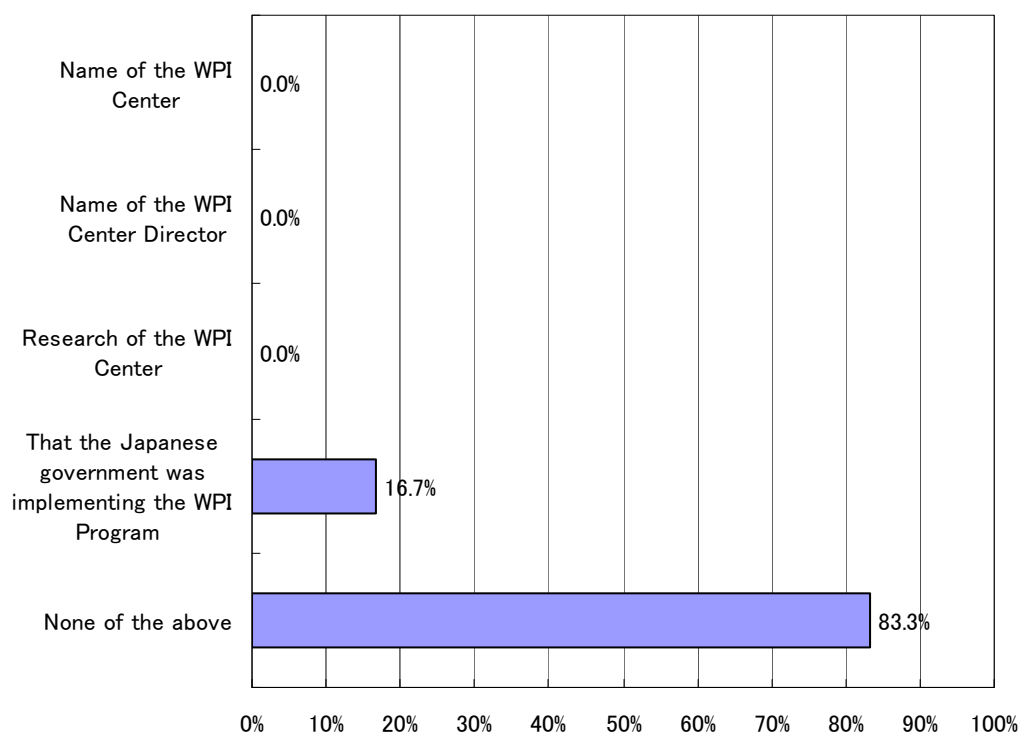
Before receiving this questionnaire, which of the following did you know about the WPI Center?

Institute for the Physics and Mathematics of the Universe (IPMU)



Before receiving this questionnaire, which of the following did you know about the WPI Center?

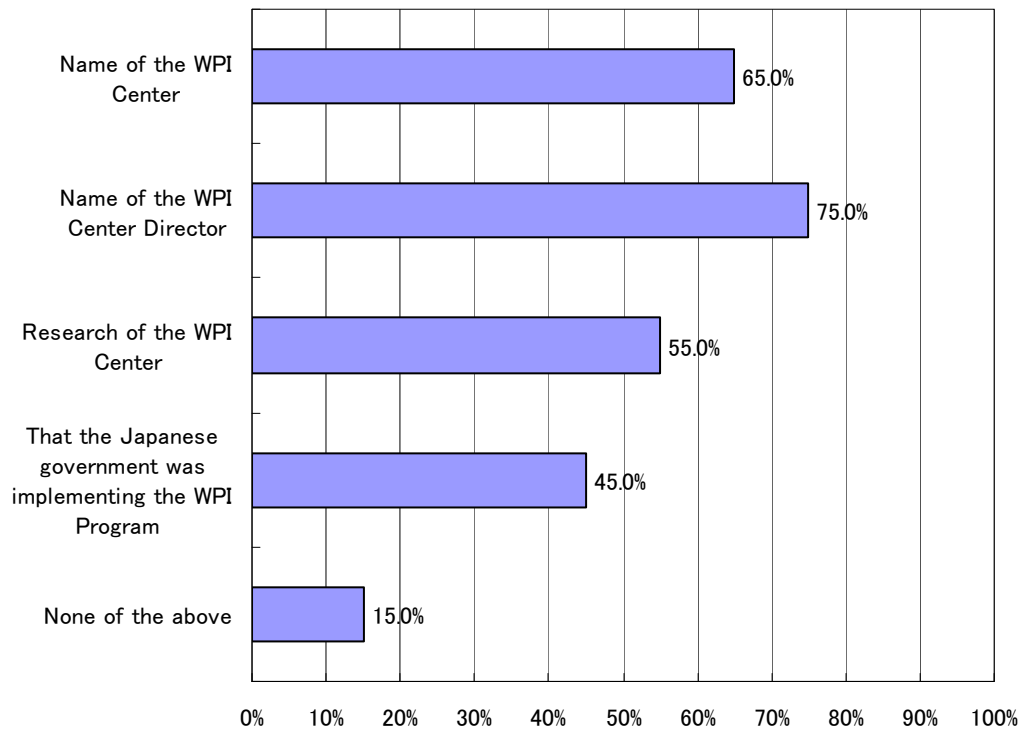
N=6



Before receiving this questionnaire, which of the following did you know about the WPI Center?

Immunology Frontier Research Center (IFReC)

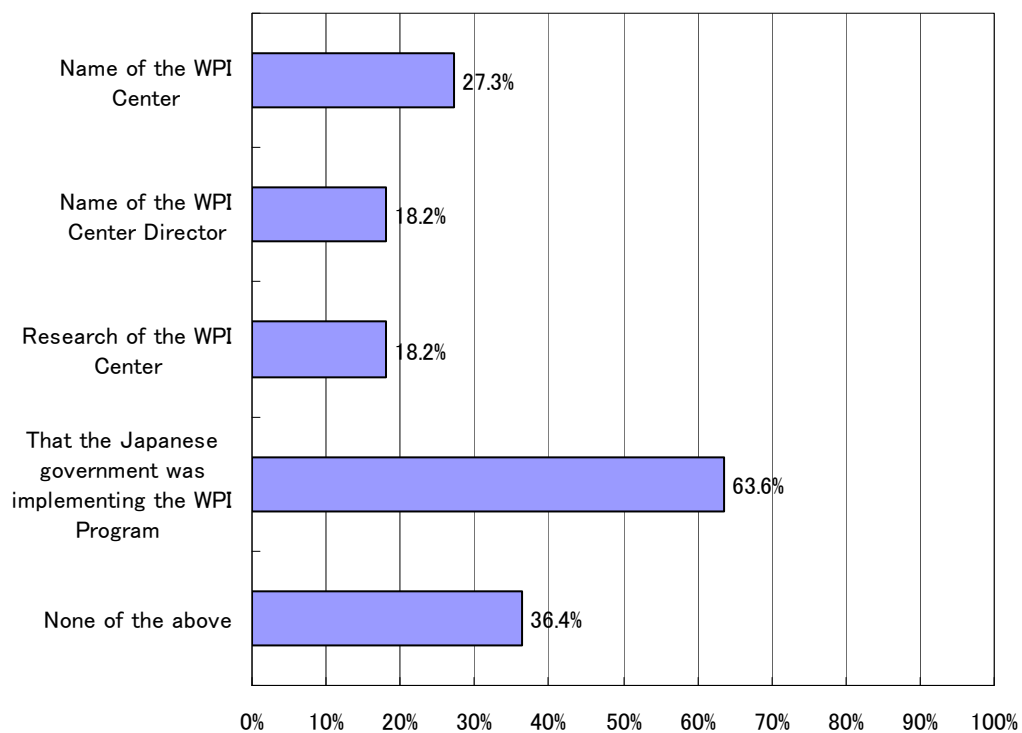
N=20



Before receiving this questionnaire, which of the following did you know about the WPI Center?

International Center for Materials Nanoarchitectonics (MANA)

N=11



Before receiving this questionnaire, which of the following did you know about the WPI Center?