

World Premier International Research Center Initiative



WPI Program



Aims:

Establishing “globally visible^{*} and internationally opened centers”.

Areas:

Basic research

Four basic goals:

1. Advancing leading edge research
2. Creating breakthrough and paradigm shift by fusion^{*}.
3. Establishing internationally opened center^{*}.
4. Reforming research systems^{*}.

^{*} *shown in detail below*

Global Visibility



- 20% of PIs are invited from abroad
- 30% or more oversea researchers
- International environments for daily life
- English as the working language
- International program committee
- International working group for site visit
- Appraisal and reputation by world top-researchers
- Attract young researchers as a proud step on their carrier paths
- International conferences / symposium

Fusion of Researches



- Interdisciplinary research
- Creation of new research areas and concepts
- Achievement of breakthrough or paradigm shift
- Unpredictable
- Bottom-up
- Environment to encourage communication
- Under one roof
- Fusion Strategy: Physics / Mathematics;
Immunology / imaging
Materials / Biology

Reform of Research Systems



- Global administration standard
- English as a primary language
- Internationally opened atmospheres
- Break of traditional or bureaucratic systems
- Support by host institutions
- Strong leadership by Center Director
- Support of administration director and staffs

Basic Requirement



- 20 or more top –notch PIs
- 20% of PIs are invited from abroad
- 30% or more oversea researchers
- A total of 200 or more members

- English as the working language
- International environments for daily life

- 1.35 billion yen (11 million US\$/15 million Euro) a year per center
- Research money is not included
- Additional support of 2 billion yen for facilities in FY2009.
- Financial support for 10-15 years

- Selected and evaluated by international program committee
- Site visit by PD, PO and international working group

Selection of WPI Program



- **Reviewing :**

1. **System review :** Evaluation of systems and reform by 5-6 national reviewers
2. **Science review:** Scientific evaluation by 5-6 national and international reviewers

- **Selection :**

International Program committee with 16 members
Chaired by Dr. Hiroo Imura

- **Competition :**

WPI in 2007, 33 applications to 5 centers
Green WPI in 2010, 9 applications to 1 center

Program committee



Chairperson

IMURA, H. ; Chairman, Foundation for Biomedical Research and Innovation

IYOSHI, A.; Chancellor, Chubu University

IKOMA, T.; Executive Vice President, Canon Inc.

ISHIDA, H.; President, Kanazawa Gakuin University;

KIMURA, T. ; Advisor to MEXT

KOBAYASHI, M.; Executive Director, JSPS Nobel Laureate in Physics (2008)

KOBAYASHI, Y.; Former Chairman of the Board, Fuji Xerox Co., Ltd.

KUROKAWA, K. ; Professor, National Graduate Institute for Policy Studies

NOYORI, R. ; President, RIKEN; Nobel Laureate in Chemistry (2001)

SUEMATSU, Y. ; Advisor, National Institute of Informatics

AYMAR, R. ; Senior Counsellor to the “Administrateur Général”(CEO),
French Atomic Energy Authority (CEA)

COLWELL, R. ; Professor, University of Maryland

DASHER, R. ; Professor, Stanford University

HALLIDAY, I. ; President, European Science Foundation

LIM Chuan Poh ; Chairman, Agency for Science, Technology and Research Singapore

MASON, M. ; Director, Robotics Institute, Carnegie Mellon University

WPI Research Centers



- **AIMR on material science** ; Tohoku University
- **IPMU on universe** : University of Tokyo
- **iCeMS on meso-dynamics/ stem cell** : Kyoto University
- **IFReC on immunology** : Osaka University
- **MANA on nanotechnology** : National Institute for Materials Science

The above 5 research centers launched in October 2007

- **Carbon-Neutral Energy Research Institute:** Kyushu University

to be launched on December 2010

WPI Research Centers



AIMR



Material science

IPMU



Univers

CiRA/iCeMS



Cell biology

IFReC



Immunology

MANA



Nanotechnology

Quality of Science



AIMR : Ranked 4th in citations in material sciences

IPMU : Physics and mathematics in understanding the universe. Kamiokande: world-wide reputation.

iCeMS : iPS cells chosen as “Breakthrough of the year”
Candidates for Nobel prize

IFReC : A world leader of immunology.
Papers of Dr. S. Akira ranked “most cited”.

MANA : Ranked 3rd in citation in material sciences

Internationalization



- **Total:** 45% (344/761) are foreigners.
IPMU: 48% of total researchers and 80% of postdocs are foreigner.
- Organizing International conferences / symposia
- Use of English
- Support to daily life

2nd anniversary of IPMU



Program Director Program Officer



- **Program Director :**

Kuroki, T., JSPS

- **Program Officer :**

Osada, Y., Riken to AIMR on material science

Sanda, I., Kanagawa U. to IPMU on universe

Suda, T., Keio U. to iCeMS on meso-dynamics/ stem cell

Sasazuki, T., Kyushu U. to IFRc on immunology

Saito, G., Meijo U. to MANA on nanotechnology

Kasagi, N., U. Tokyo to CNERI on hydrogen energy

- **International working group**

5-6 top scientists to each WPI research centers

Evaluation of WPI Program



- **External committee**
 - Site visit (2 days, 4 x in 5 years)
 - Follow up meeting (1 day, 4 x in 5 years)
 - Interim evaluation at 5 y may reflect to continuation.
- **Internal committee**
 - Advisory committee (1-2x in 5 Years)

Points of View in Evaluation



- **Scientific Achievement**

- Outstanding science
- Creation of new research fields / breakthrough

- **Implementation as a WPI research center**

- Leadership of director
- Core mass of top class PIs
- Participation of foreign scientists (PIs, postdocs etc)
- Encouragement of fusion studies
- Environment for life and science of foreign scientists
- Support of administration
- Support of host institution
- Break of bureaucratic or traditional limitation

Site Visit



Day 1

- Briefing of director
- Presentation of 9 PIs
- Interview to foreign researchers
- Interview to young researchers

Day 2

- Guided tour to facilities
- Discussion with center staffs
- Preparation of a site visit report

Site visit team

- Program director
- Program officer
- MEXT
- JSPS
- Working group
 - 6 experts scientists
 - 3 from abroad



Follow-up



Participants

Program committee, PD, POs, MEXT, JSPS

- Report of PD
- Progress report of the center director
- Comments of PO
- Discussion
- Lectures of selected PIs

After follow up discussion by PD PO



Reports of Evaluation



- **Site visit report**; send to all WPI centers.
- **Follow up committee**;
 - Unedited comments; send to the corresponding center
 - Edited report; open in URL

URL of follow-up committee report

JSPS > WPI program > Follow-up
> follow-up results > FY 2007, FY2008

Questionnaire Survey



- July-Sept. 2009 (1y 10m after launching)
- 183 Leading scientists
- 5721 Researchers selected from top journals
- Response rate: 32.4% (researchers)
33.3% (leading scientists)
- A variation exists among WPI centers.

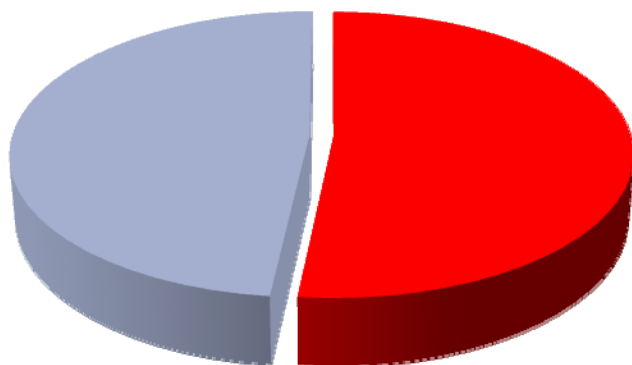
[URL questionnaire](#)

JSPS > WPI program > Follow-up > Questionnaire survey



Global Recognition of WPI Program

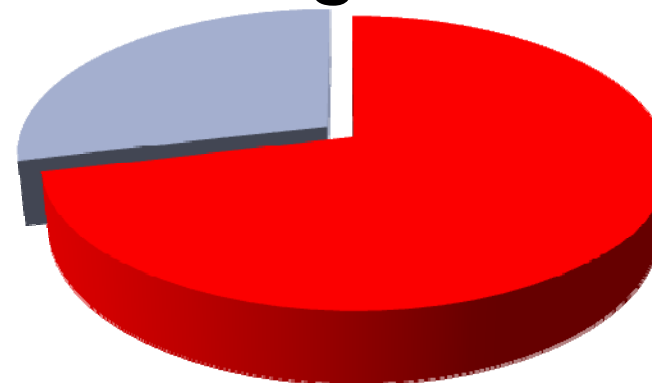
- **Researchers**



Recognized by 51.7%

in terms of WPI program, center's name, name of director or its activity.

- **Leading Scientists**



Recognized by 78.7%

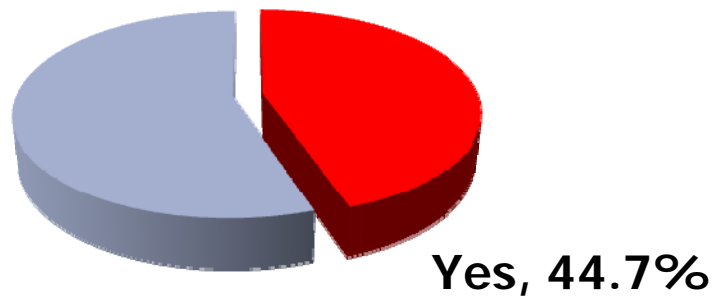
- A variation exists among WPI centers.

Questionnaire of WPI Centers

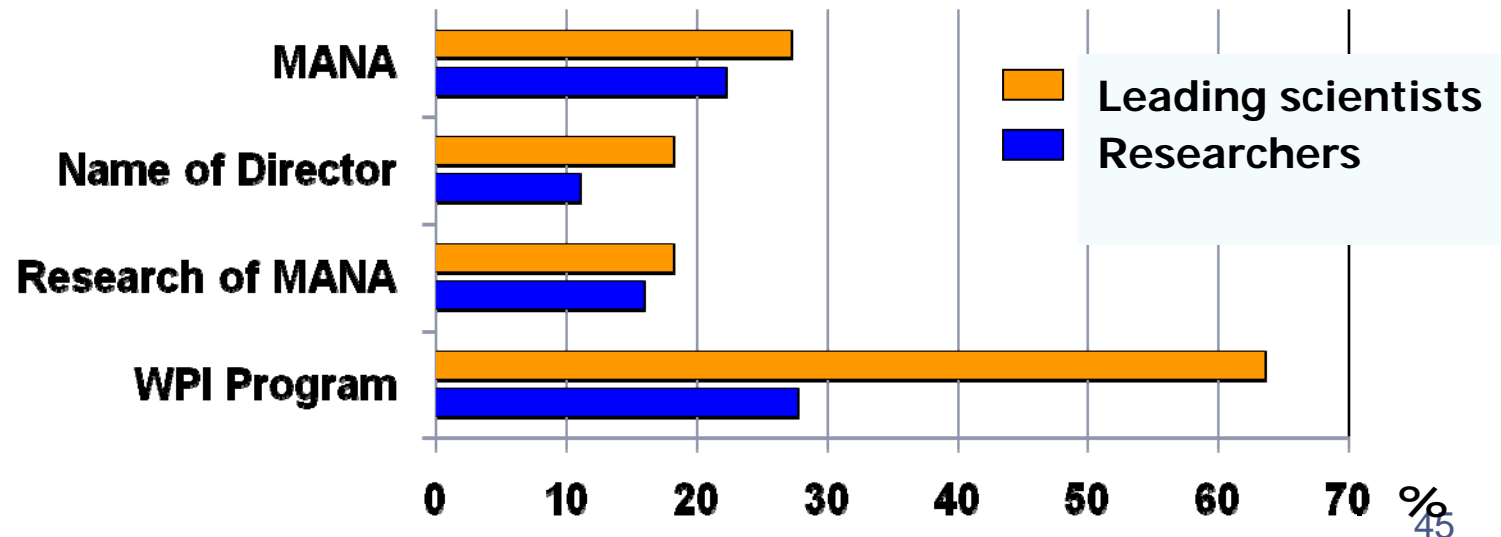
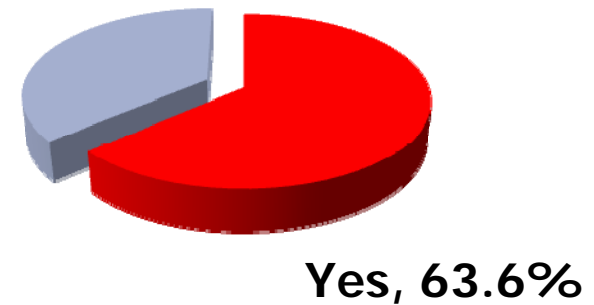
- Almost a half (44%) of researchers evaluates science levels of WPI centers as “outstanding”.
- A majority of researchers (61.8%) are interested to be a member of WPI centers including dual appointment.
- A majority of researchers (69.1%) may recommend their students or colleagues to be a member of WPI centers including dual appointment.

Global Recognition of MANA

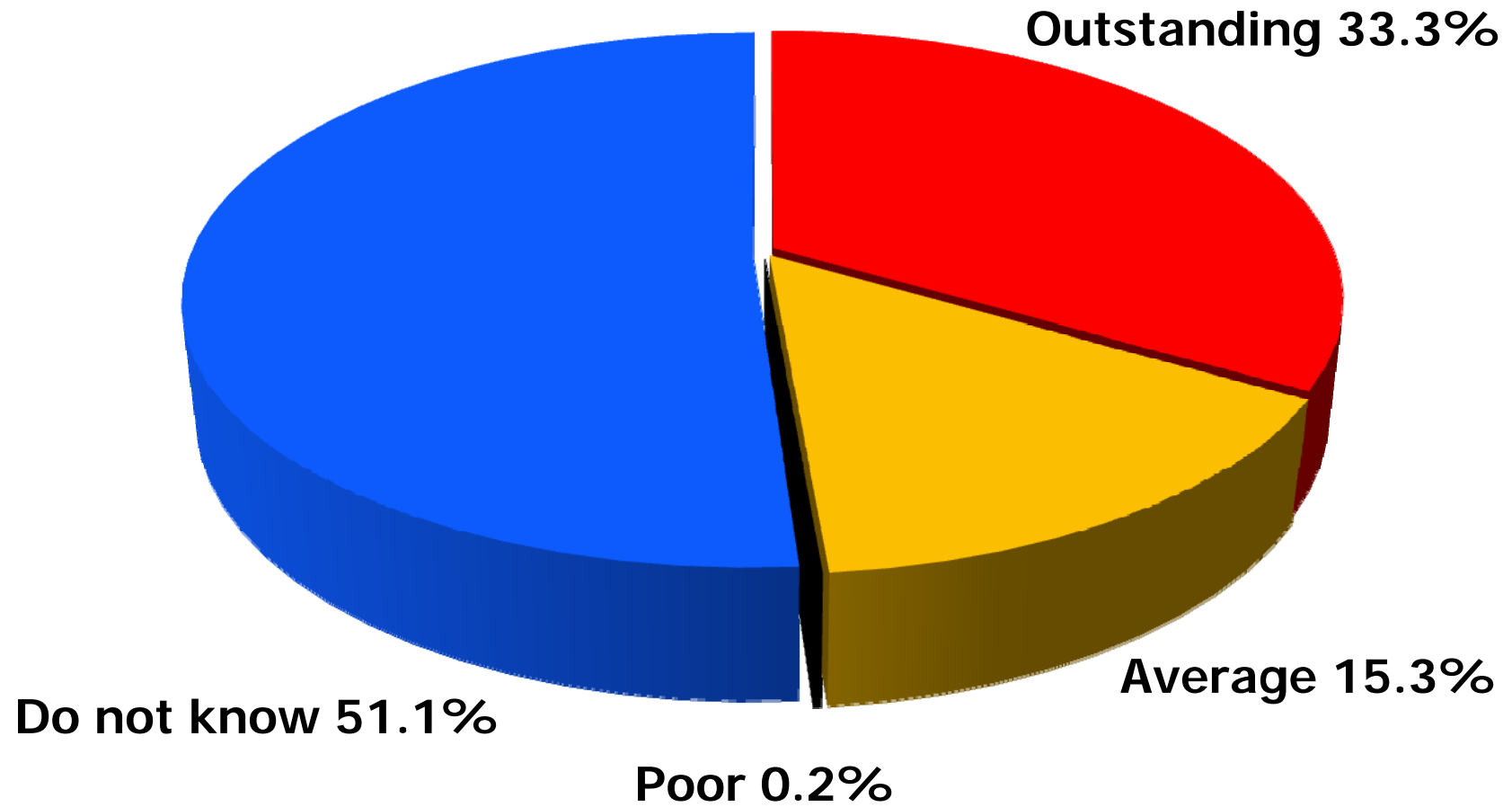
Researchers



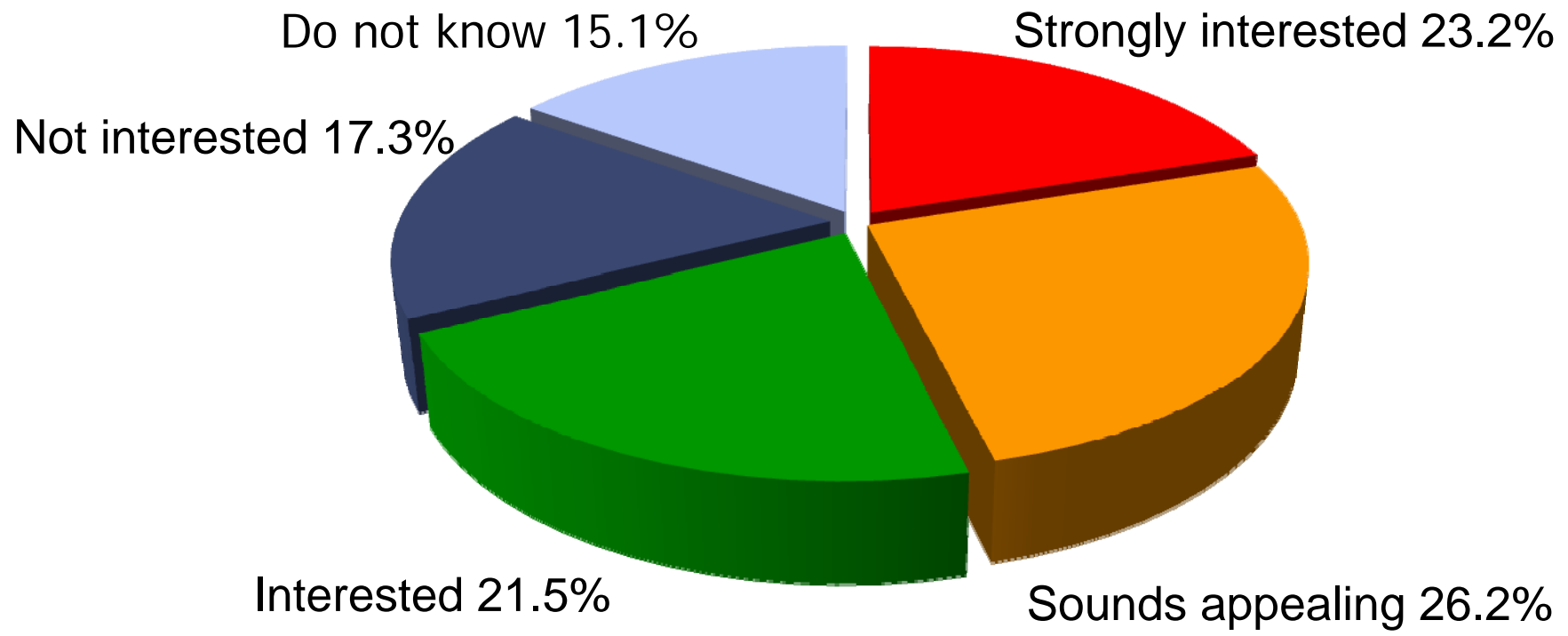
Leading Scientists



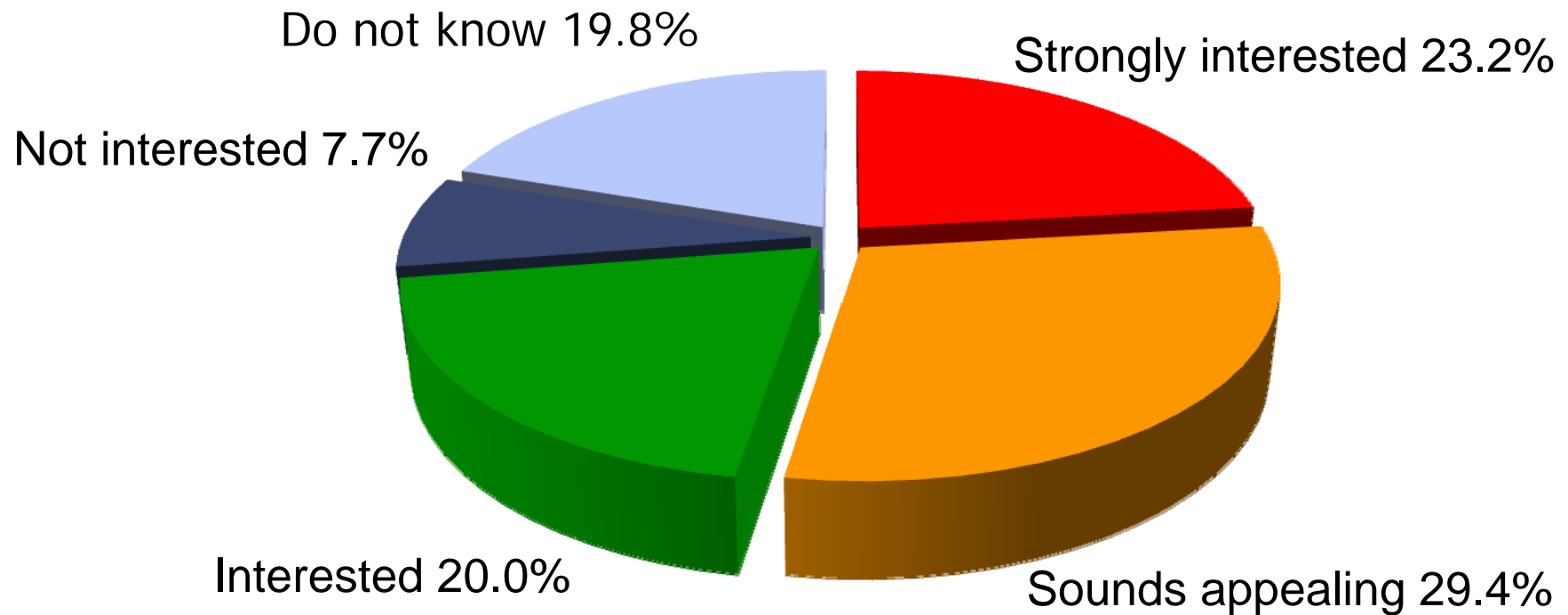
High Evaluation of MANA



68% of researchers are interested to be a member of MANA by themselves



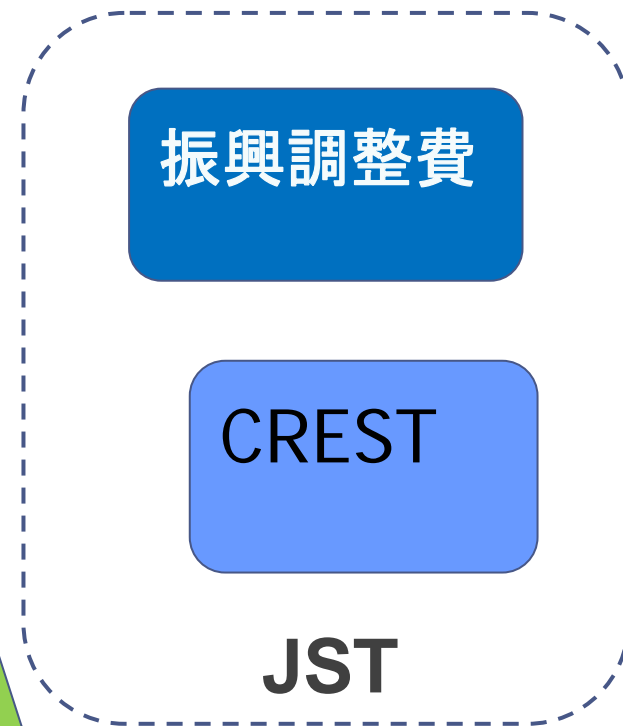
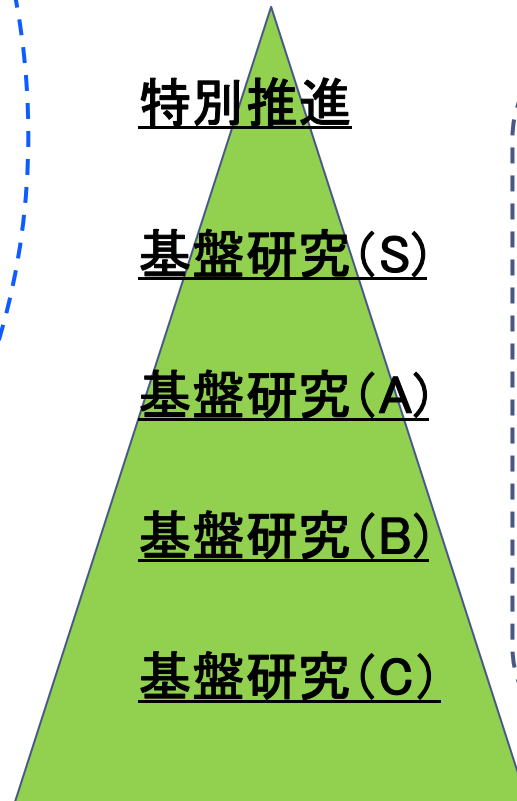
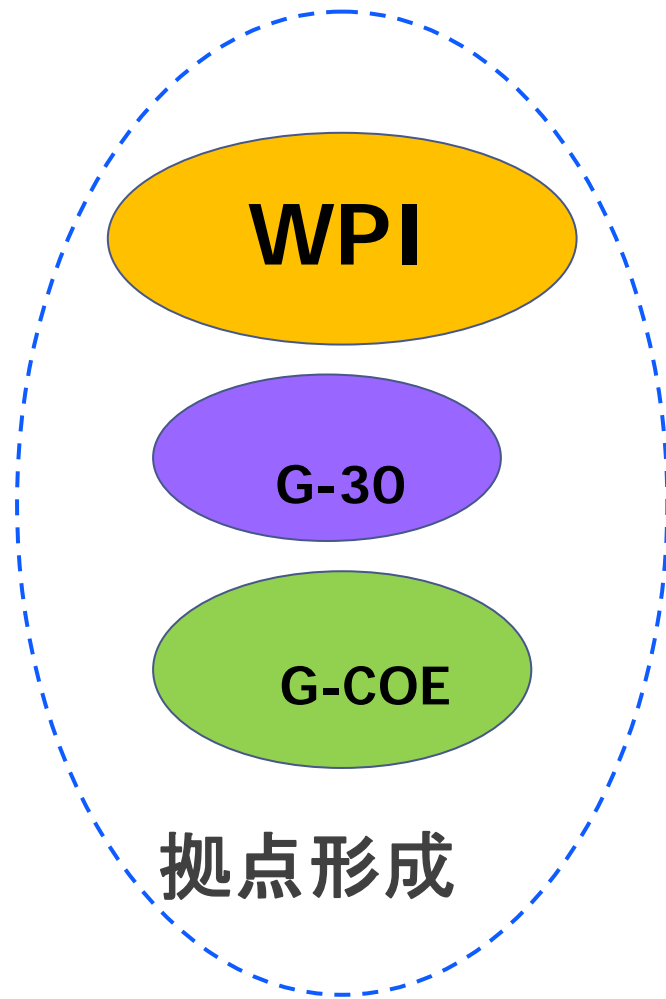
73% of researchers recommend their students or colleagues to be a member of MANA by themselves



Summary of National Excellence Programs

		Estab	No. Ctr	Years	Budget a year a center		Total budget a year	
					Euro(millon)	Yen (oku)	Euro(millon)	Yen (oku)
Denmark	UNIK	2009	4	5	65m	71	65	75
Germany	Graduate school	2006	39	5	1	1.2	380	440
	Cluster of excellence	2006	37	5	6.5	7.8		
	Institutional strategy	2006	9	5	12.5	14.3		
France	Excellence initiative	2010	10	5				
	Univeristy hospital	2010	5	5				
	Technology institute	2010	5	5				
	Research lab	2010	50	5				
Japan	WPI	2007	6	10	11.7	13.5	71.5	82.18
Korea	WCU	2008		5			165mill \$	140
Malasia	MRU	2007		3			3.2	3.7
Poland	KNOW	2011	7	5			200	230
Spain	ICE	2009	5	4	12	14		
	Regional ICE	2009	4		8.5	9.8		
	Promising campus	2009	9		5	5.8		
Sweden	Linnaeus grant	2006	40	10	1	1.2		
	Strategic res area	2010		5	10	11.5	572	6600

1 Euro=115yen



科研費