

🌸🌺🌻 **The German Research Landscape and
Funding Options for International Cooperation**

DAAD Science Lectures Hong Kong 2017



A photograph of a modern, multi-story building with a curved facade and large windows. Three white flags with the Fraunhofer ISE logo are flying in front of the building against a clear blue sky. The building's facade is light-colored with horizontal panels. The windows are dark and reflect the sky. The flags are on tall poles and are slightly blurred due to wind. The overall scene is bright and clear.

Facts | Structures | Financing

Research in Germany

 **Fraunhofer**
ISE

Fraunhofer - Institut für Solare Energiesysteme ISE



Facts and figures 2015



Almost 1,000 publicly funded research institutions



Research expenditures: 88.8 bn euros = 2.87% GDP



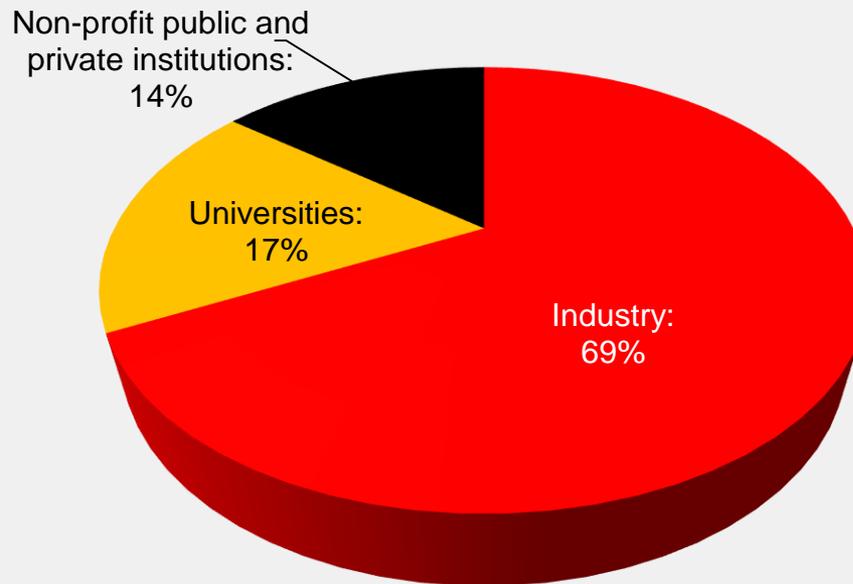
640,516 people in the R&D sector



Bilateral, European and multilateral cooperation with more than 155 countries



Research expenditures by sector



Research expenditures by sector in 2015 (%)

Source: Federal Statistical Office



Pillars of the German research sector

Universities (HEIs)



Non-university research institutes



Industrial research

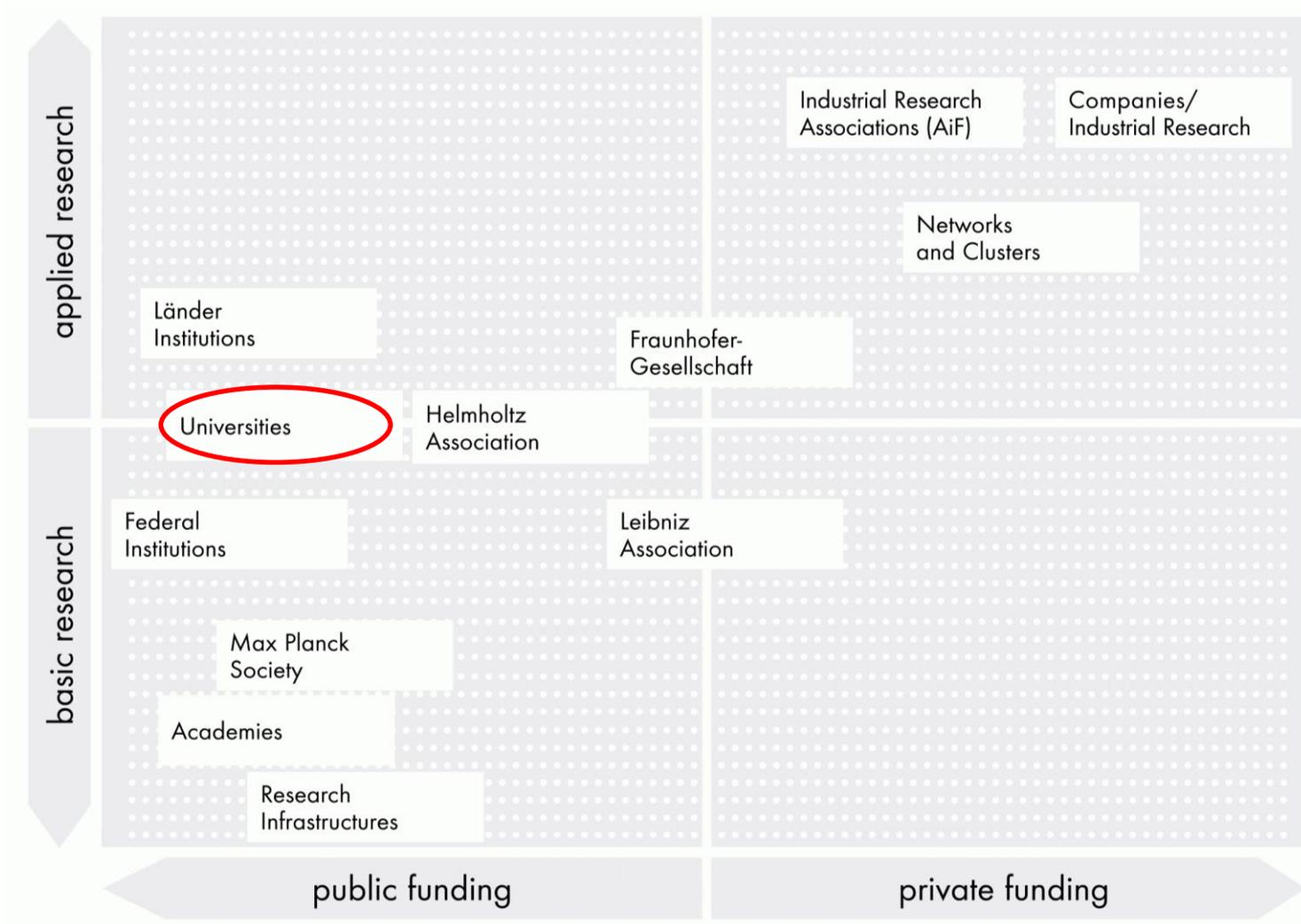




Diversity | Excellence | Investments
Research institutions



Participants



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Adaptation: Frankfurter Societäts-Medien GmbH



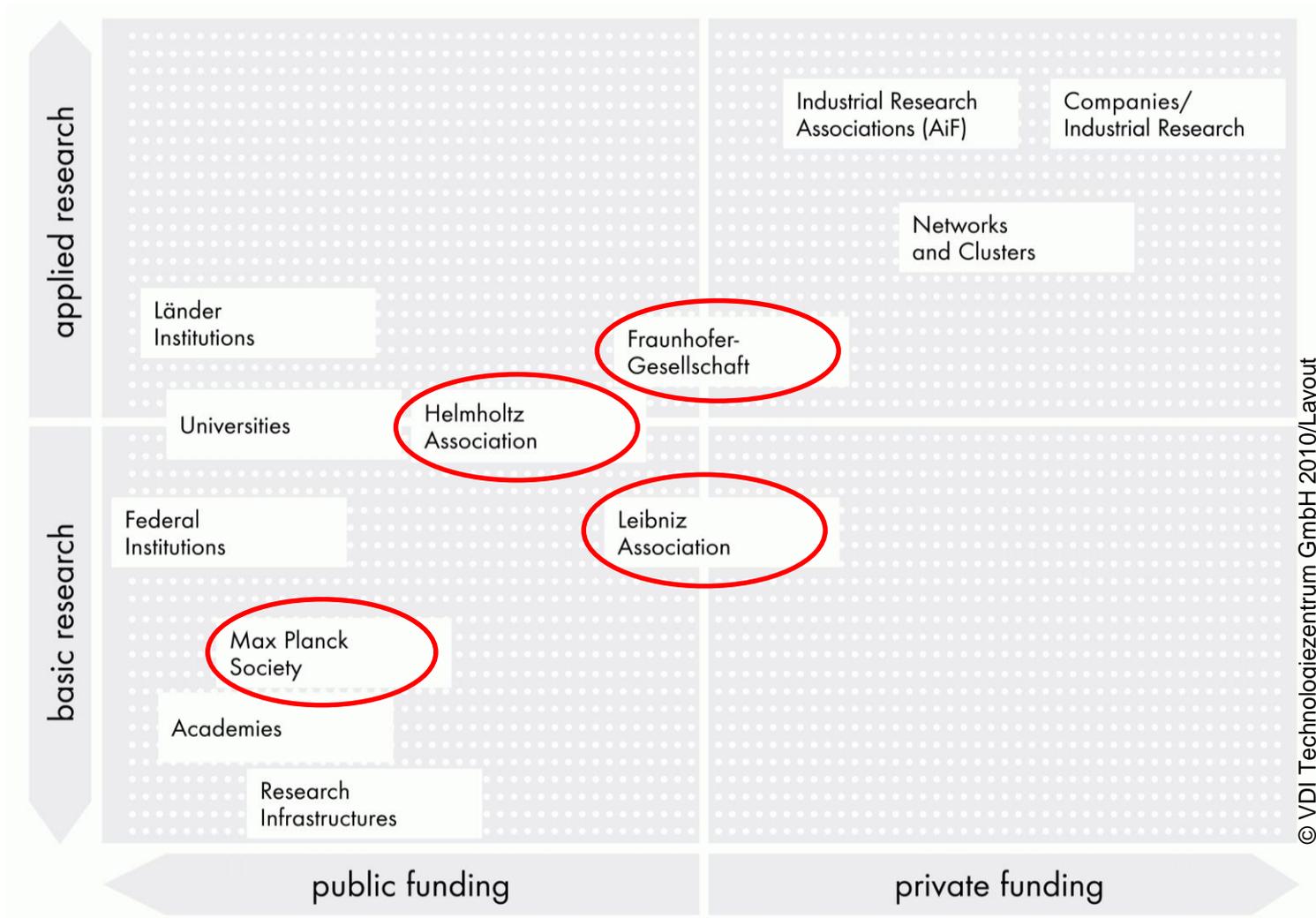
Universities

- Approx. 400 HEIs – 148 authorised to confer doctorates
- Almost 29,000 international doctoral candidates
- Principle of uniting learning, instruction and research
- Excellence Initiative = 4.6 bn euros for cutting-edge research





Non-university research (I)



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The Big Four

Institution	Institutes	Budget	Researchers
Max Planck Society	83 institutes	2.2 bn euros	13,300
Helmholtz Association	18 research centres	4.24 bn euros	38,200 (staff in total)
Fraunhofer-Gesellschaft	67 institutes	2.1 bn euros	24,000 (staff in total)
Leibniz Association	89 institutes	1.73 bn euros	9,300



Max Planck Society



MAX-PLANCK-GESELLSCHAFT



83 institutes



2.2 bn euros



13,300 researchers



47% of the researchers are of international origin

MAX PLANCK INSTITUT



Research for the future



MAX-PLANCK-GESELLSCHAFT

- Basic research in the natural sciences, life sciences, social sciences and the humanities
- Innovative research fields which are especially demanding in terms of funding or time requirements
- Person-centered research organisation
- 18 Nobel laureates





 89 institutes

 1.73 bn euros

 9,300 researchers

 20% of the researchers are of international origin



Theoria cum praxi

Science for the benefit and good of humanity



- Natural, engineering and environmental sciences, economics, spatial and social sciences and humanities
- Knowledge transfer to policy-makers, academia, business and the public
- Scientific infrastructure, research-based services
- Archives, museums, national libraries



 18 research centres

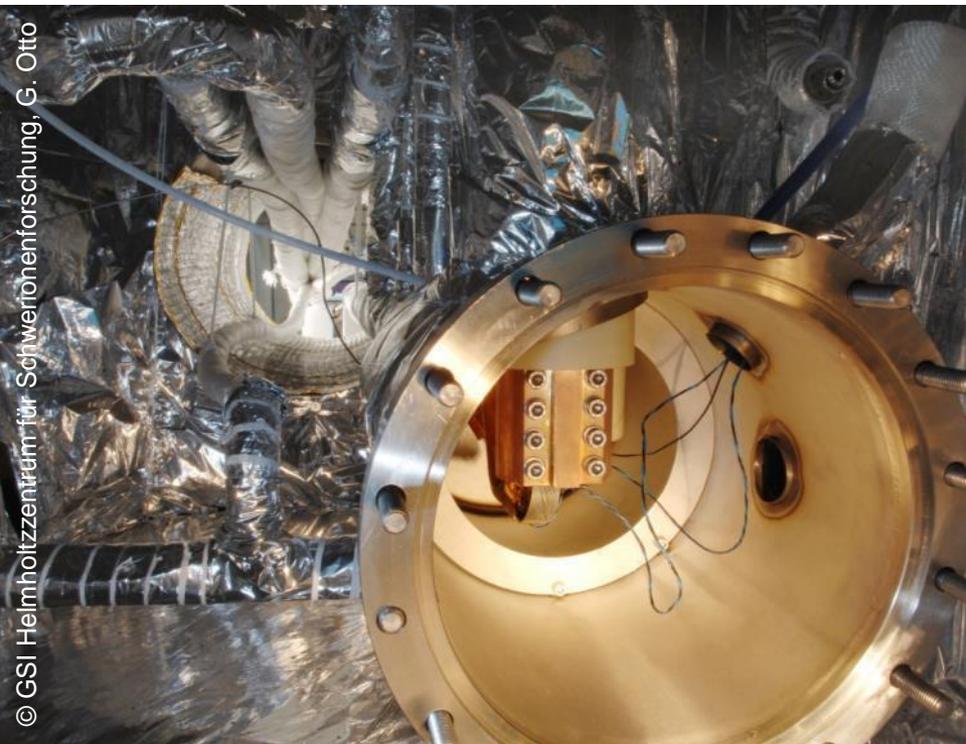
 4.24 bn euros

 38,200 staff in total

 7,500 of the researchers are of international origin (2014)



Shaping the future with sustainable research



- Energy, earth and environment, health, key technologies, structure of matter, aeronautics, space and transport
- Research infrastructures
- Basic research with a focus on potential applications
- Applied research



 67 institutes
 2.1 bn euros
 24,000 staff (in total)





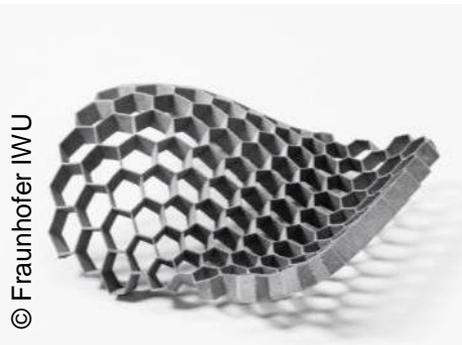
Research dedicated to the future



- Integration of scientific findings into useful innovations for industry and society
- Health, security, communication, mobility, energy and environment
- Contract research for industry and government (70%)



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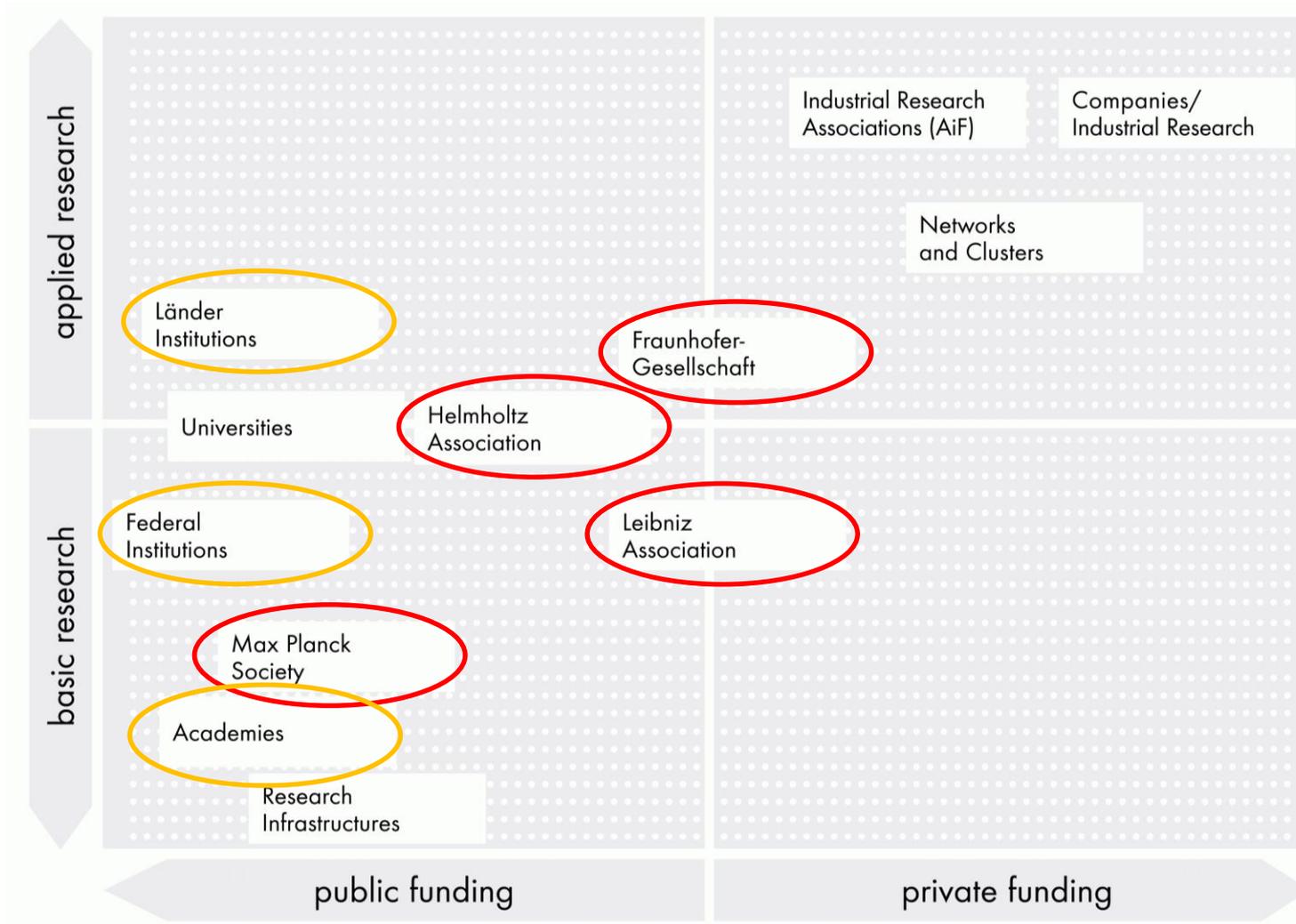
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© Fraunhofer



Non-university research (II)



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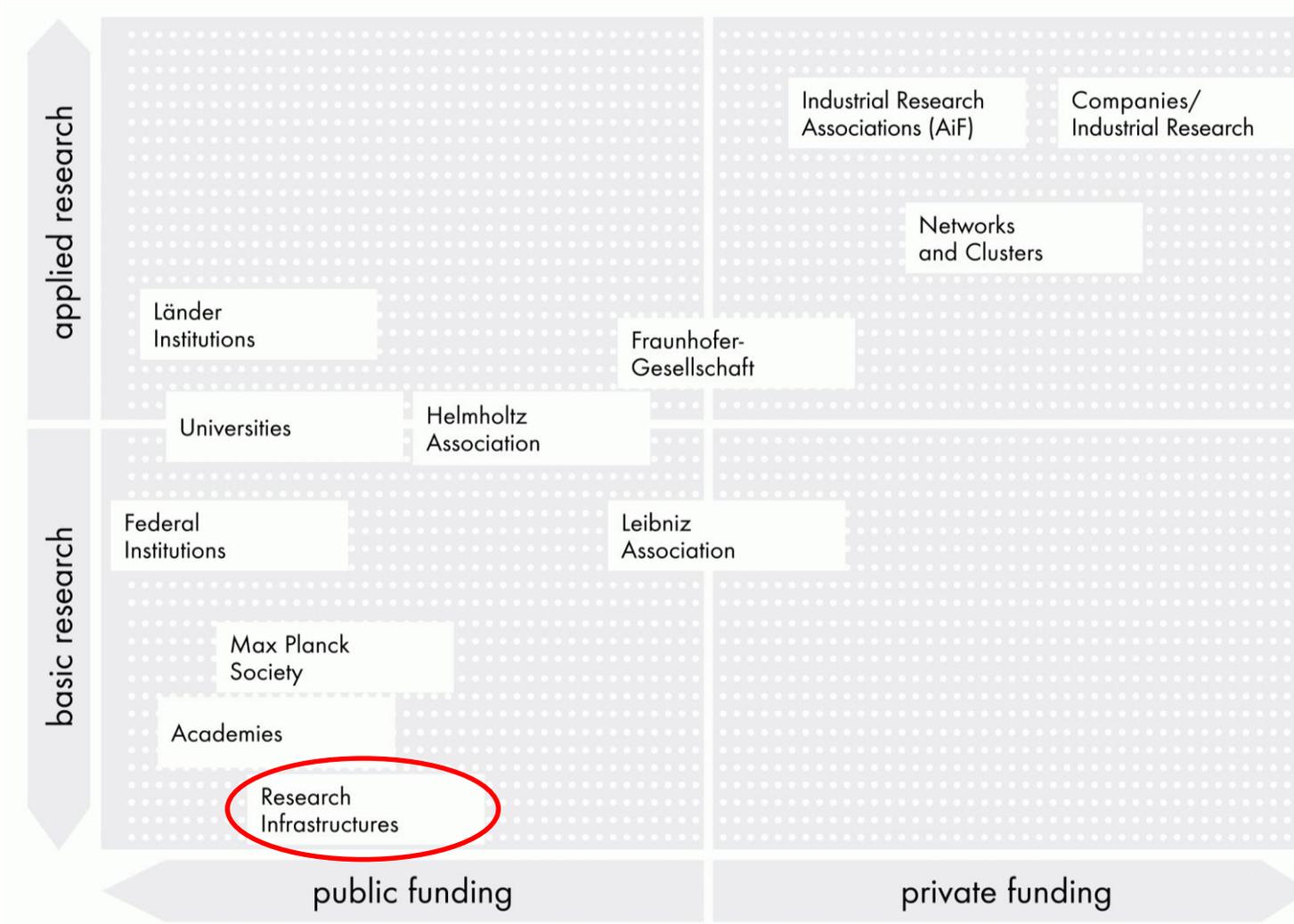
Non-university research (II)

- Federal research institutions / departmental research (46)
- “Länder” research institutions (40)
- Academies of Sciences and Humanities





Research infrastructures



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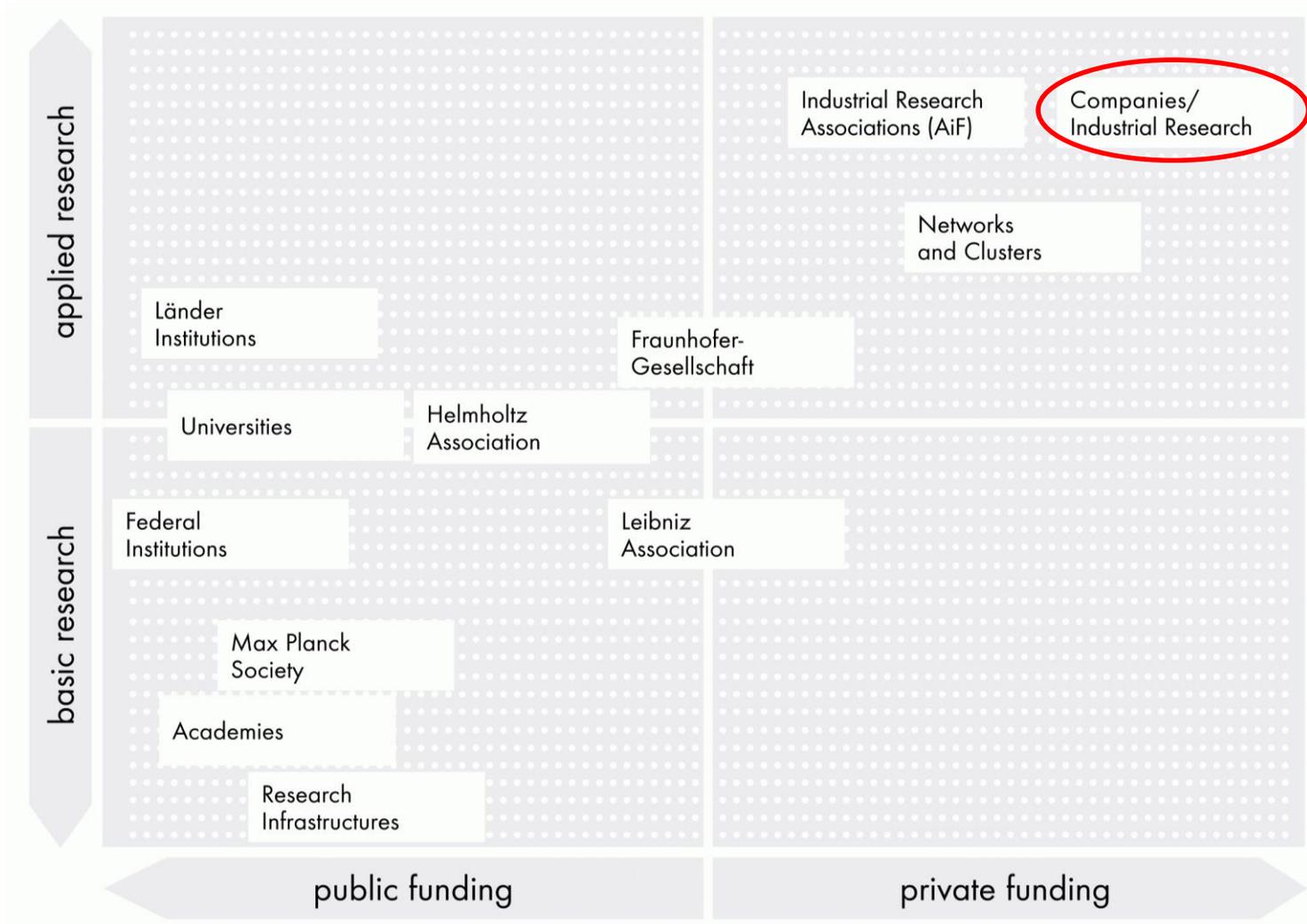
Research infrastructures



Flash II – Free-electron laser, Hamburg



Industrial research



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Industrial research

- 69% of all research funding in Germany comes from business and industry
- Innovation-driving sectors: pharmaceuticals, electronics, automotive engineering, mechanical engineering
- Technology transfer – Cluster formation, networks



Current developments in science and research

Strategies for innovation, excellence and international cooperation





Goals | Measures | Instruments
Research policy



Strategies I Measures

National focus

- High-Tech Strategy
- Leading-Edge Cluster Competition
- Research infrastructures
- Research agreements
 - Excellence Initiative
 - Excellence Strategy
 - Higher Education Pact
 - Pact for Research and Innovation

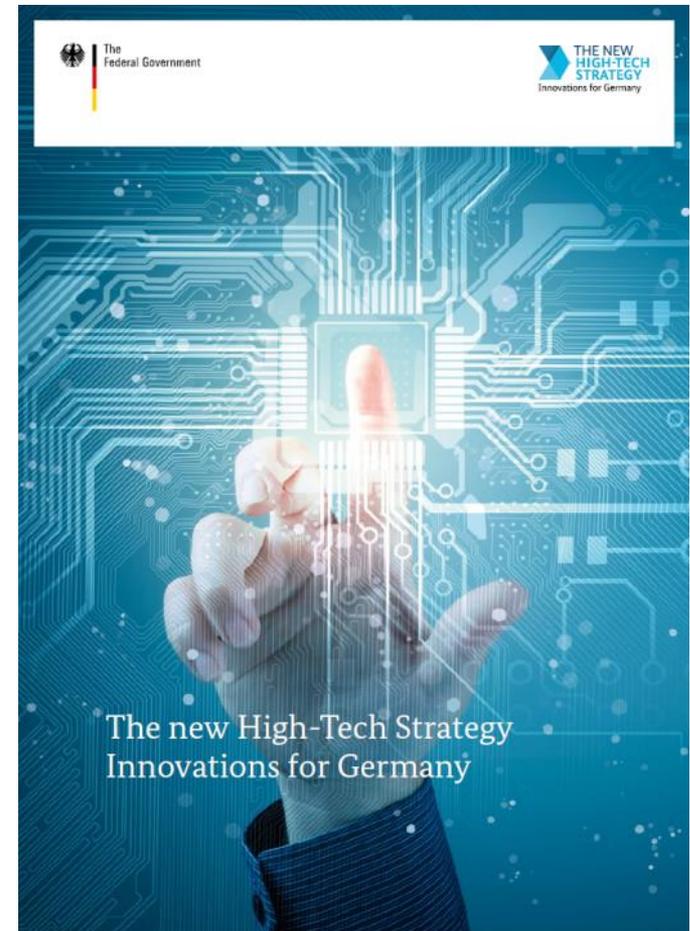
Internationalisation

- Internationalisation Strategy
- Science Offensive
- Internationalisation Action Plan
- European Research Area



High-Tech Strategy

- National cross-departmental strategy
- Thematic priorities – future tasks
- Interconnecting science and industry
- Creating fertile ground for innovation
- Cementing Germany's position as a leading innovator in the world





High-Tech Strategy

Fields of the future

Healthy living



Sustainable economy and energy



Intelligent mobility



Innovative world of work



Civil security



Digital economy and society





Science and industry

Creation of networks and clusters

Leading-Edge Cluster Competition

- 15 leading-edge clusters funded nationwide
- 600 mn euros
- Technology transfer, junior research promotions
- 2017 Competition: Internationalisation of Leading-Edge Clusters



Research campus

- 9 research campuses
- Public-private partnership
- Science and industry under one umbrella organisation
- Research fields with high research risk and particular potential for game-changing innovations



Research campus

Envisioning
energy transition
and mobility as a
single challenge





Excellence Initiative

Federal- and state-funded research programme

- Duration: 2006-2017
- Total funding volume: 4.6 bn euros
- Focus: university research activities
- Cooperation with regional, national and international partners





Excellence Initiative

Funding structures

Graduate schools

Structured PhD programmes



Excellence clusters

Internationally visible beacons of research



Future concepts

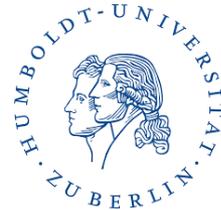
Universities among the best-ranked internationally





Excellence Initiative

Future concepts



UNIVERSITÄT
HEIDELBERG
ZUKUNFT
SEIT 1386





Excellence Strategy

Funding structures

Excellence Universities

Permanent support for universities with 2-3 Clusters of Excellence



Clusters of Excellence

Project funding for internationally competitive areas of research





Pact for Research and Innovation

- Non-university research institutes and university research projects
- 2016-2020 five percent funding increase to institutions annually
- Goals: identification of future-oriented research fields, promotion of junior researchers, cross-institutional networking, internationalisation, knowledge and technology transfer, partnerships with industry



MAX-PLANCK-GESELLSCHAFT



Research agreements

First results

- Created additional study opportunities
- Opened up new research topics
- Established new institutes
- Attracted international researchers
- Produced more world-class publications
- Led to successful patent strategies





Internationalisation strategy

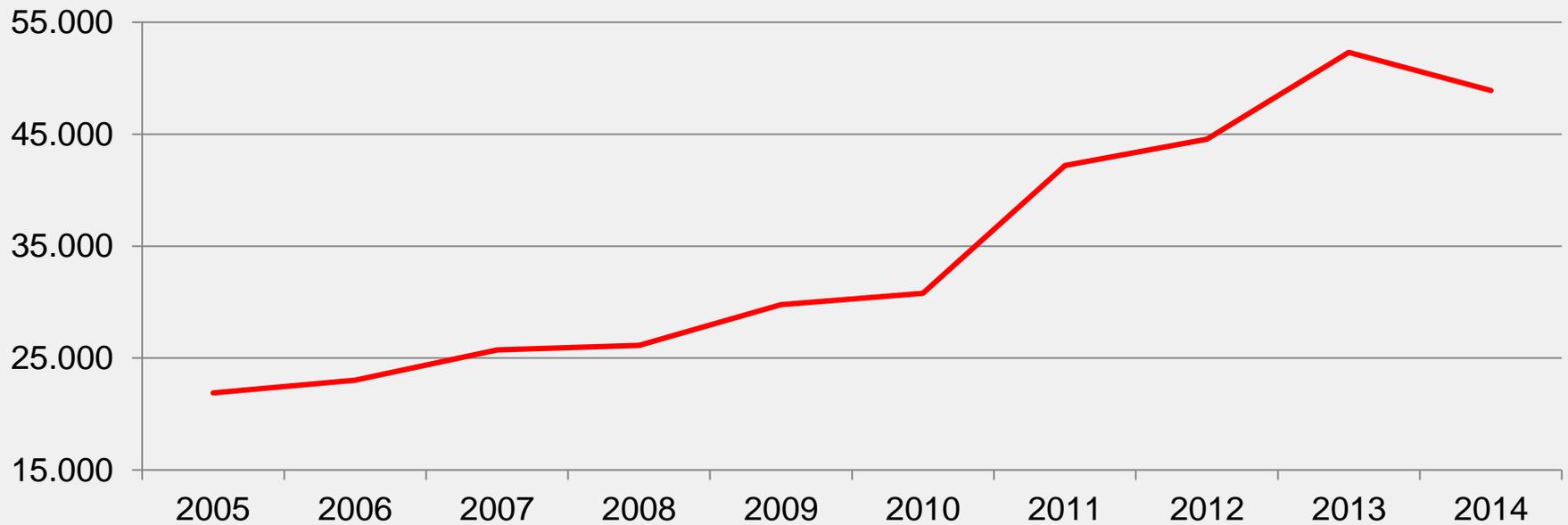
Instruments



- Funding bilateral research projects
- Transnational joint research projects
- Internationalisation of leading-edge clusters/networks
- Mobility
- Research marketing campaign “Research in Germany”



International researchers



Number of international researchers in Germany

Source: *Wissenschaft Weltoffen*

Funding opportunities in Germany

Various funding options available for PhD candidates, postdocs, young academics, experienced scientists and world-class researchers





Funding for PhD students



Paths to a PhD

Individual vs. structured PhD

Individual PhD

- Individual research under supervision of supervisor
- Optional courses or other forms of teaching / learning
- Mostly informal admission and marginal formalisation

Structured PhD

- Guidance by a team of supervisors / supervising committee
- Mandatory, fixed supporting curriculum (interdisciplinary)
- Defined application process
- Offered by research training groups / graduate schools



Funding for PhD students

FUNDING PROGRAMME	DURATION		TYPE OF FUNDING		TYPE OF DOCTORATE	
	Research stay (up to 2 years)	Complete doctorate	Grant/ scholarship	Work contract*	Individual doctoral project	Structured doc- toral programme
DLR-DAAD Research Fellowships		■	■		■	
Graduate Schools (DFG)		■	■	■		■
Green Talents (BMBF)	■		■			
Indiv. Doctoral Projects at Fraunhofer Institutes		■		■	■	
Indiv. Doctoral Projects at Helmholtz Centres		■	■	■	■	
Indiv. Doctoral Projects at Leibniz Institutes		■		■	■	
Indiv. Doctoral Projects at Max Planck Institutes		■		■	■	
Internat. Helmholtz Res. Schools & Grad. Schools		■	■	■		■
International Max Planck Research Schools		■		■		■
Internat. Visiting Researchers at Max Planck Inst.	■		■			
Leibniz Graduate Schools and ScienceCampi		■	■	■		■
MSC Innovative Training Networks		■		■		■
Re-invitation Programme (DAAD)	■		■			
Res. Grants – Binationally Superv. Doct. Degrees (DAAD)	■		■		■	
Res. Grants – Doctoral Programmes (DAAD)		■	■		■	■
Res. Grants – One-Year and Short-Term (DAAD)	■		■		■	■
Research Training Groups (DFG)		■	■	■		■
Support Early Career Res. in Clusters of Exc. (DFG)		■	■	■	■	■
Support Early Career Res. in Collab. Res. Centres (DFG)		■	■	■	■	■

*generally includes own salary and expenses for staff and consumables



Funding for PhD students

Graduate and research schools

A photograph of a student with glasses sitting at a desk in a modern office, typing on a keyboard. Another student is visible in the foreground, slightly out of focus, looking at a laptop. The office has large windows and a potted plant.

PhD students in research training groups, graduate schools and non-university institutes collaborate on research projects, work as research associates or finance their work with research grants.



Funding for PhD students

Graduate and research schools

- DFG Research Training Groups at universities
- Excellence Initiative Graduate Schools at universities
- DAAD-funded doctoral programmes at universities or non university research institutes
- International Max Planck Research Schools (IMPRS)
- International Helmholtz Research Schools and Graduate Schools
- Leibniz Graduate Schools and ScienceCampi
- European programme: MSC Innovative Training Networks



Funding for PhD students

Individual funding

At universities, doctoral students are often employed as research associates on part-time contracts or receive a scholarship.





Funding for PhD students

Individual funding

- Individual doctoral projects at universities
- Individual doctoral projects at non-university research institutes:
 - Fraunhofer Institutes
 - Helmholtz Centres
 - Leibniz Institutes
 - Max Planck Institutes
- DLR-DAAD Research Fellowships
- ...



A photograph showing three people in a meeting. On the left, a woman with dark hair tied back, wearing red-rimmed glasses and a red turtleneck sweater, is speaking and gesturing with her hands. On the right, two men in white shirts are looking down at papers on a table. One man is pointing at a document. The background is a plain, light-colored wall.

Funding for postdocs



Funding for postdocs

FUNDING PROGRAMME	DURATION		TYPE OF FUNDING			CAREER LEVEL		
	Short-term (up to 1 year)	Long-term (more than 1 year)	Fellowship/ grant	Work contract*	Funding**	Postdoctoral researcher	Junior research group leader	Junior professor
Bilateral Exchange of Academics (DAAD)	■		■			■		
DLR-DAAD Research Fellowships	■	■	■			■		
Emmy Noether Programme (DFG)		■		■	■		■	
ERC Consolidator Grants		■		■	■		■	
ERC Starting Grants		■		■	■		■	
Fraunhofer Attract		■		■	■		■	
Georg Forster Research Fellowship (Humboldt)	■	■	■			■		
Graduate Schools (DFG)		■	■	■		■	■	
Grants to Support the Initiation of Internat. Collab. (DFG)	■		■			■		
Green Talents (BMBF)	■		■					
Head of Max Planck Research Group		■		■	■		■	
Helmholtz Young Investigators Groups		■		■	■		■	
Humboldt Research Fellowship	■	■	■			■		
Internat. Visiting Researchers at Max Planck Inst.	■	■	■			■		
Leibniz-DAAD Research Fellowships	■		■			■		
Leibniz Junior Research Groups		■			■		■	
Max Planck Grants for Advanced Postdoct. Training		■		■		■		
MSC European Fellowship		■	■			■		
P.R.I.M.E. (DAAD)		■		■		■		
Re-invitation Programme (DAAD)	■		■			■		
Research Grants (DFG)		■		■	■	■		
Research Grants – One-Year and Short-Term (DAAD)	■		■			■		
Research Stays for Univ. Academics & Scientists (DAAD)	■		■			■		
Research Training Groups (DFG)		■	■	■		■	■	
Sofja Kovalevskaja Award (Humboldt)		■			■		■	
Support Early Career Res. in Clusters of Exc. (DFG)		■	■	■		■	■	■
Support Early Career Res. in Collab. Res. Centres (DFG)		■	■	■		■	■	■

*generally includes the researcher's own salary and expenses for staff and consumables



Funding for postdocs

Working as a postdoctoral researcher

- DAAD & DFG research grants
- DLR-DAAD & Leibniz-DAAD research fellowships
- Humboldt research fellowships
- Max Planck grants
- European programme: MSC European Fellowships
- ...





Funding for postdocs

Heading a junior research group

- Emmy Noether Programme
- Fraunhofer Attract
- Head of a Max Planck Research Group
- Helmholtz Young Investigators Groups
- Sofja Kovalevskaja Award
- European programmes: ERC Starting / Consolidator Grants
- ...



Jan Zappner/DAAD



Funding for postdocs

Junior professorship

- Support for early career researchers within DFG-funded
 - Clusters of Excellence
 - Collaborative Research Centres



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Bilateral exchange of academics

🌻 In Brief

Research and study visits as part of bilateral exchange of researchers and scholars with partner countries

🌻 Who?

Postdocs / Junior researchers
Senior researchers

🌻 Duration?

2 weeks–3 months

🌻 Value?

Fellowship: 2,000–
2,150 €/month

www.funding-guide.de



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DAAD



Funding for senior researchers



Funding for senior researchers

FUNDING PROGRAMME	DURATION		TYPE OF FUNDING			CAREER LEVEL		
	Short-term (up to 1 year)	Long-term (more than 1 year)	Fellowship/ award	Work contract	Funding*	Experienced researcher	Research group leader	Professor
Alexander von Humboldt Professorship		■			■		■	
Anneliese Maier Research Award (Humboldt)		■			■	■		
Bilateral Exchange of Academics (DAAD)	■		■			■		
DLR-DAAD Research Fellowships	■		■			■		
ERC Advanced Grants		■		■	■	■		
Fraunhofer Attract		■		■	■		■	
Fraunhofer-Bessel Research Award (Humboldt)	■		■			■		
Friedrich Wilhelm Bessel Research Award (Humboldt)	■		■			■		
Georg Forster Research Award (Humboldt)	■		■			■		
Georg Forster Res. Fellowship (Humboldt)	■	■	■			■		
Grants to Support the Initiation of Internat. Collab. (DFG)	■		■			■		
Heisenberg Programme - Fellowship (DFG)		■	■			■		
Heisenberg Programme - Professorship (DFG)		■		■	■			■
Humboldt Research Award	■		■			■		
Humboldt Research Fellowship	■	■	■			■		
Internat. Visiting Researchers at Max Planck Inst.	■	■	■			■		
Internat. Visiting Scholars at Leibniz Inst.	■	■	■	■		■		
MSC European Fellowship		■	■			■		
Re-invitation Programme (DAAD)	■		■			■		
Research Grants (DFG)		■		■	■	■		
Research Stays for Univ. Academics & Scientists (DAAD)	■		■			■		

*generally includes the researcher's own salary and expenses for staff and consumables



Funding for senior researchers

Working as an experienced researcher

- Research Awards:
 - Anneliese Maier
 - Fraunhofer-Bessel
 - Humboldt
 - ...
- Visiting researchers at Max Planck/Leibniz Institutes
- European programmes: ERC Advanced Grants, MSC European Fellowships
- ...





Funding for senior researchers

Heading a research group

- Alexander von Humboldt Professorship
- Fraunhofer Attract



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Funding for senior researchers

Professorship

- Professorship within the Heisenberg Programme



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Funding Programmes by DAAD

- **University Summer Courses at German Universities for Foreign Students and Graduates**
Application deadline: 1 December
- **Study Scholarships (for Master studies) in the fields of architecture, music, performing arts, fine art, film, design & visual communication**
Application deadline: 31 October (for architecture: 30 September)
- **Research Grants for Completion of a Doctoral Programme in Germany (1 – 3 years),** Application deadline: 15 October
- **Research Grants (Short-term up to 6 months, non renewable)**
Application deadline: 15 November for stays beginning from April and 30 April for stays beginning from October
- **Research Grants (Long-term 7 to 10 months, non renewable)**
Application deadline: 15 October
- **Research Stays for University Academics and Scientists**
Application deadline: 15 Apr for stays that start between August of the same year and Jan of the following year/15 Oct for stays that start between Mar and Jul of the following year
- **Re-Invitation Programme for Former Scholarship Holders**
Application deadline: 15 Apr for stays that start between August of the same year and Jan of the following year/15 Oct for stays that start between Mar and Jul of the following year
- **Project-related Bilateral Exchange Programme**
Germany/Hong Kong Joint Research Scheme (with UGC)
- **The Croucher Foundation Programme (for Natural Sciences, Medicine or Technology) ==> only Hong Kongers**





Sources of information

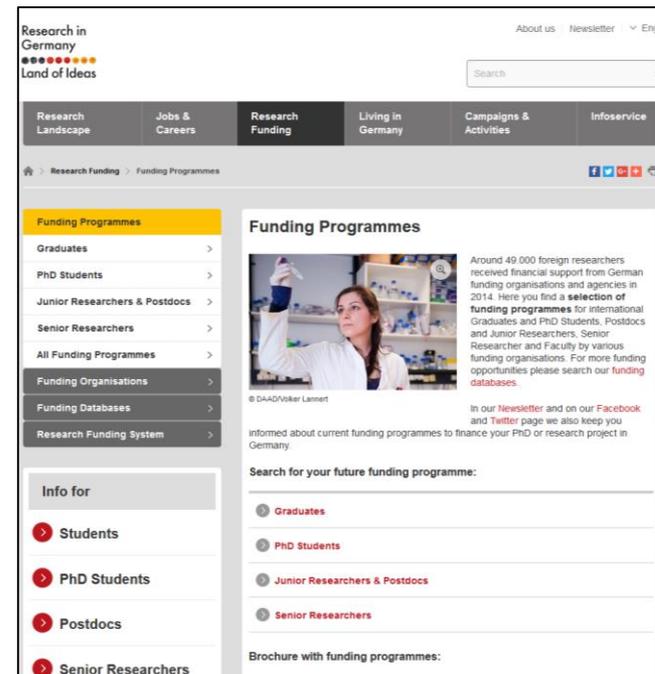


Need more information?

Brochure “Funding your research in Germany”



www.research-in-germany.org/funding-programmes





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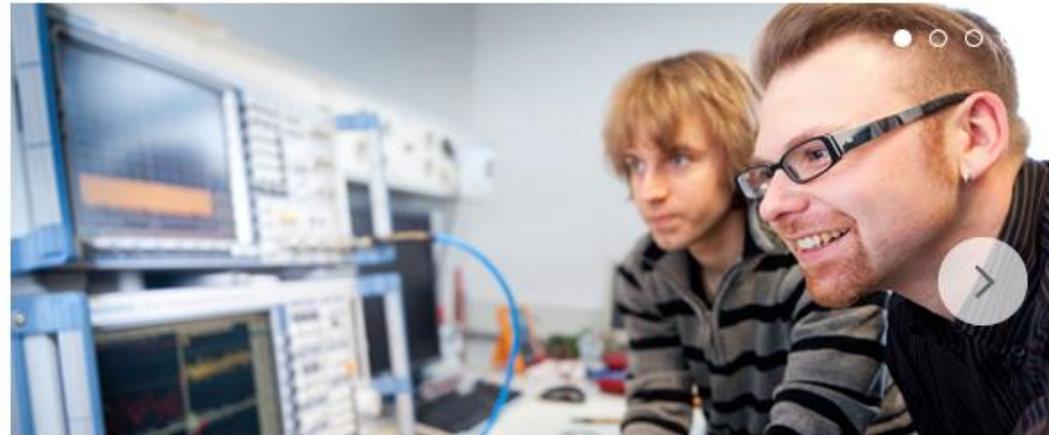
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Websites and databases

- <http://www.research-in-germany.org>
- <http://www.funding-guide.de>
- <http://www.euraxess.de>
- <http://www.research-explorer.de>
- <http://www.higher-education-compass.de>

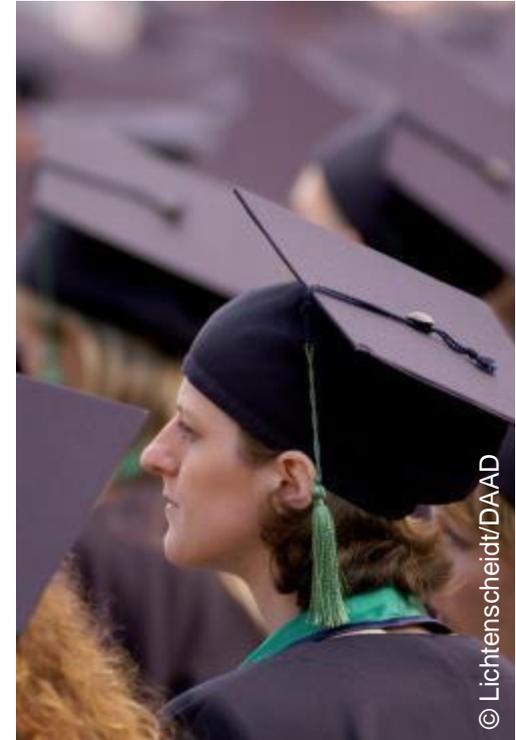




Useful links

Finding a doctoral position

- PhD Germany
www.phdgermany.de
- Research in Germany
www.research-in-germany.org/jobs
- EURAXESS
www.euraxess.de
- Academics
www.academics.com



The German Academic Exchange Service – THE German National Agency for Exchange and Internationalisation



Dr. Siegbert Klee,
Director DAAD IC



Mr Orange Cheung,
Education Officer

DAAD Information Centre Hong Kong & Macau

Hong Kong Baptist University
Academic & Administration Building,
Room 1126, 11th Floor

Weekly Consultation:

1st & 3rd Monday of each month, 4 pm – 7 pm

Every Tuesday, 10 am – 12 noon

appointment (required for PhD / research)



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Vielen Dank und Herzlich Willkommen in Deutschland!



Welcome to Germany



Land of Ideas

