



The German Research Landscape

Silvia Schmid, Head of the DAAD Information Center Yerevan



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. The sky is clear and blue. A semi-transparent grey banner is overlaid across the middle of the image, containing the title text.

Facts | Structures | Financing

Research in Germany

 **Fraunhofer**
ISE

Fraunhofer - Institut für Solare Energiesysteme ISE



Facts and figures 2014



Almost 1,000 publicly funded research institutions



Research expenditures: 84 bn euros = 2.88% GDP



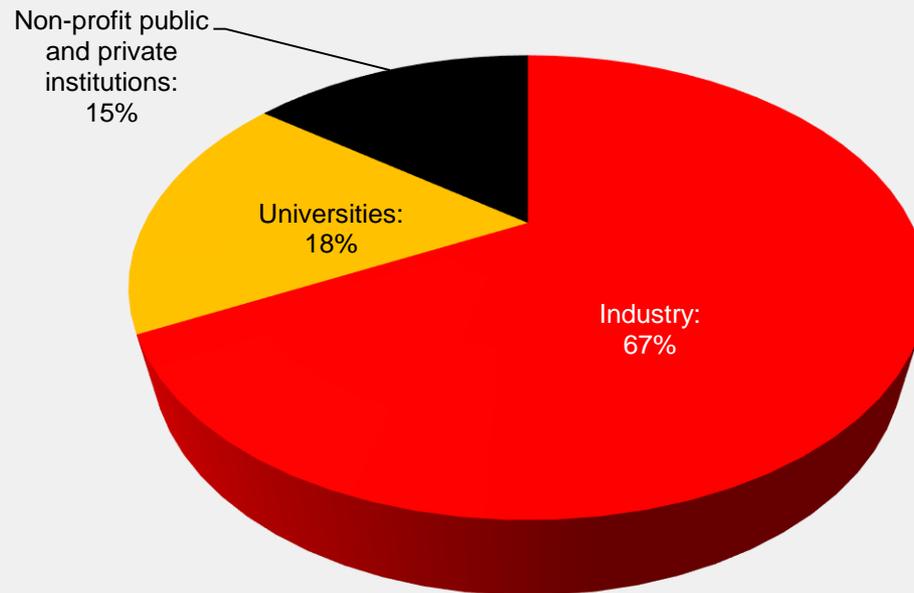
604,000 people in the R&D sector



Bilateral, European and multilateral cooperation with more than 151 countries



Research expenditures by sector



Research expenditures by sector in 2014 (%)

Source: Federal Statistical Office



Pillars of the German research sector

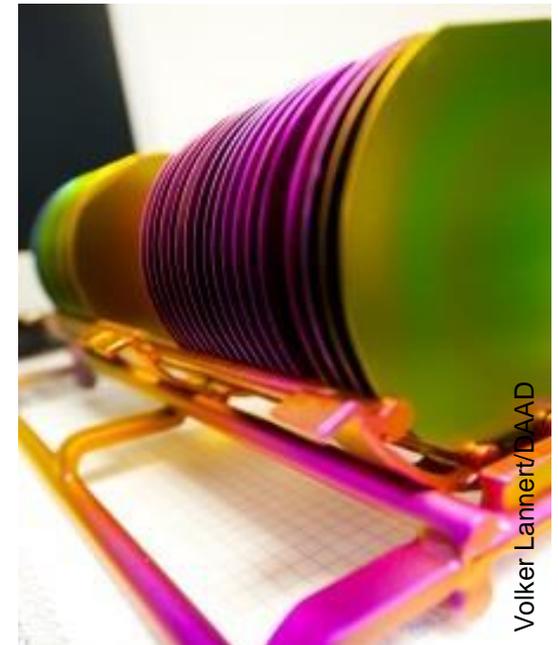
Universities (HEIs)



Non-university research institutes



Industrial research

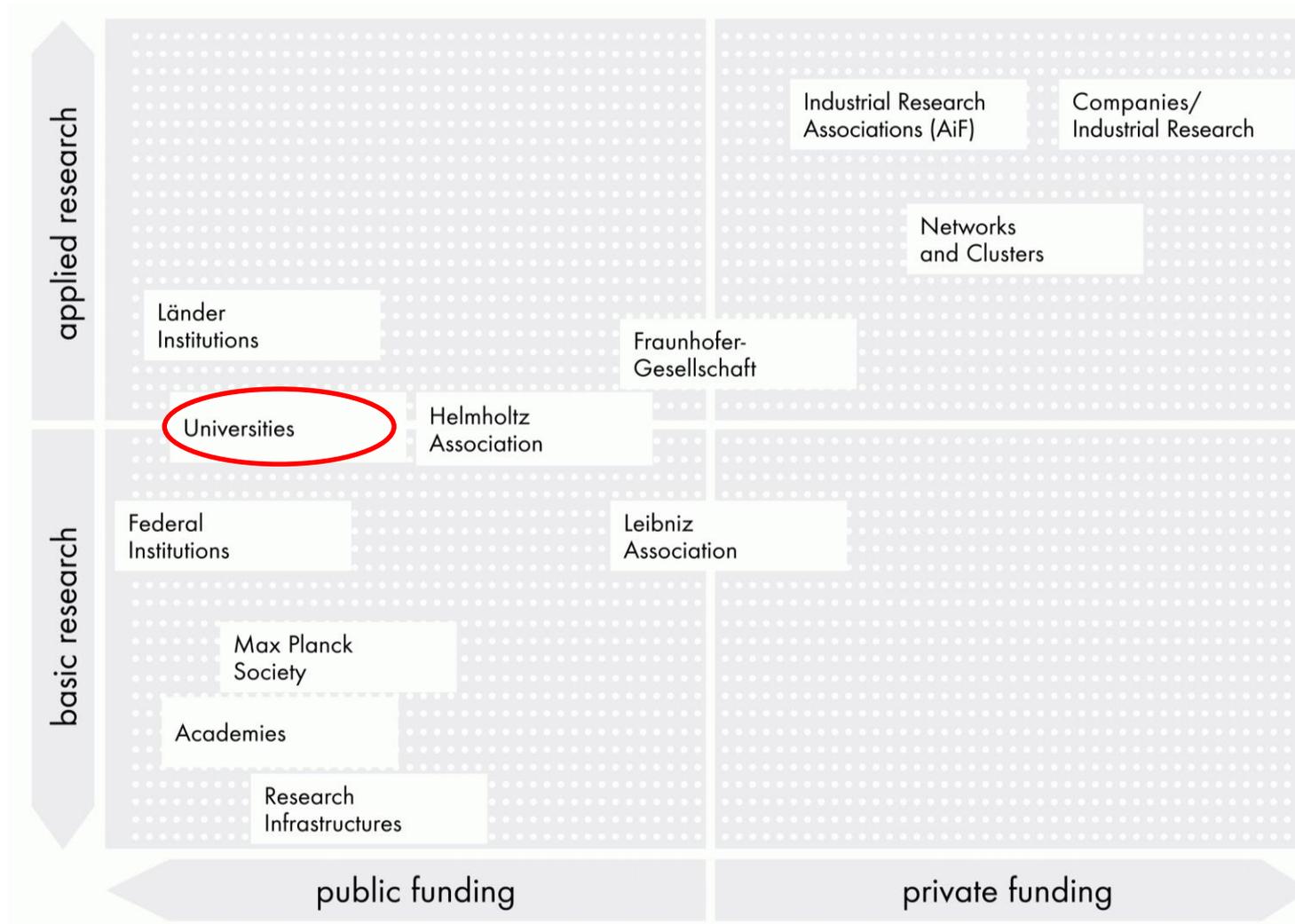




Diversity | Excellence | Investments
Research institutions



Participants



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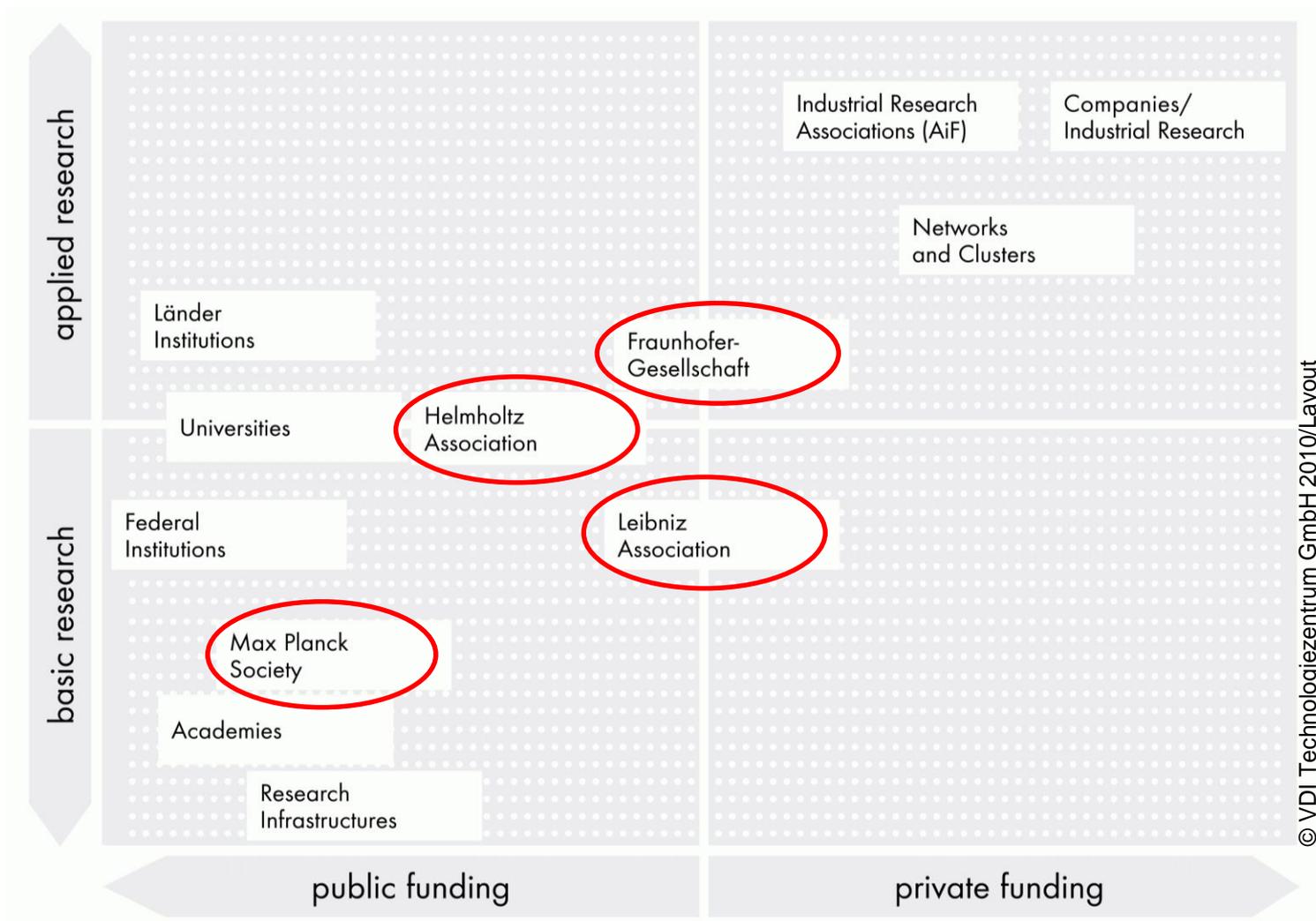
Universities

- Approx. 400 HEIs – 148 authorised to confer doctorates
- Almost 26,000 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	14,700
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

 23% of the junior researchers are of international origin



Theoria cum praxi

Science for the benefit and good of humanity



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- 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

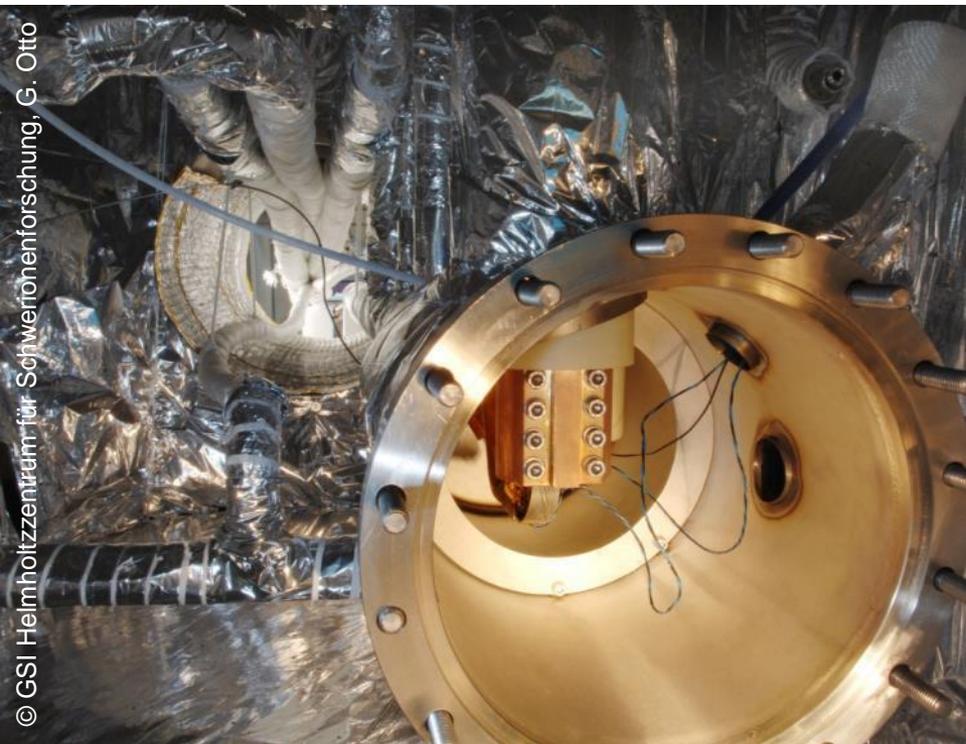
 4.24 bn euros

 14,700 researchers

 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)





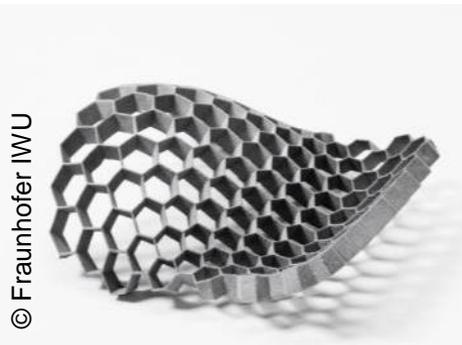
Research dedicated to the future



- 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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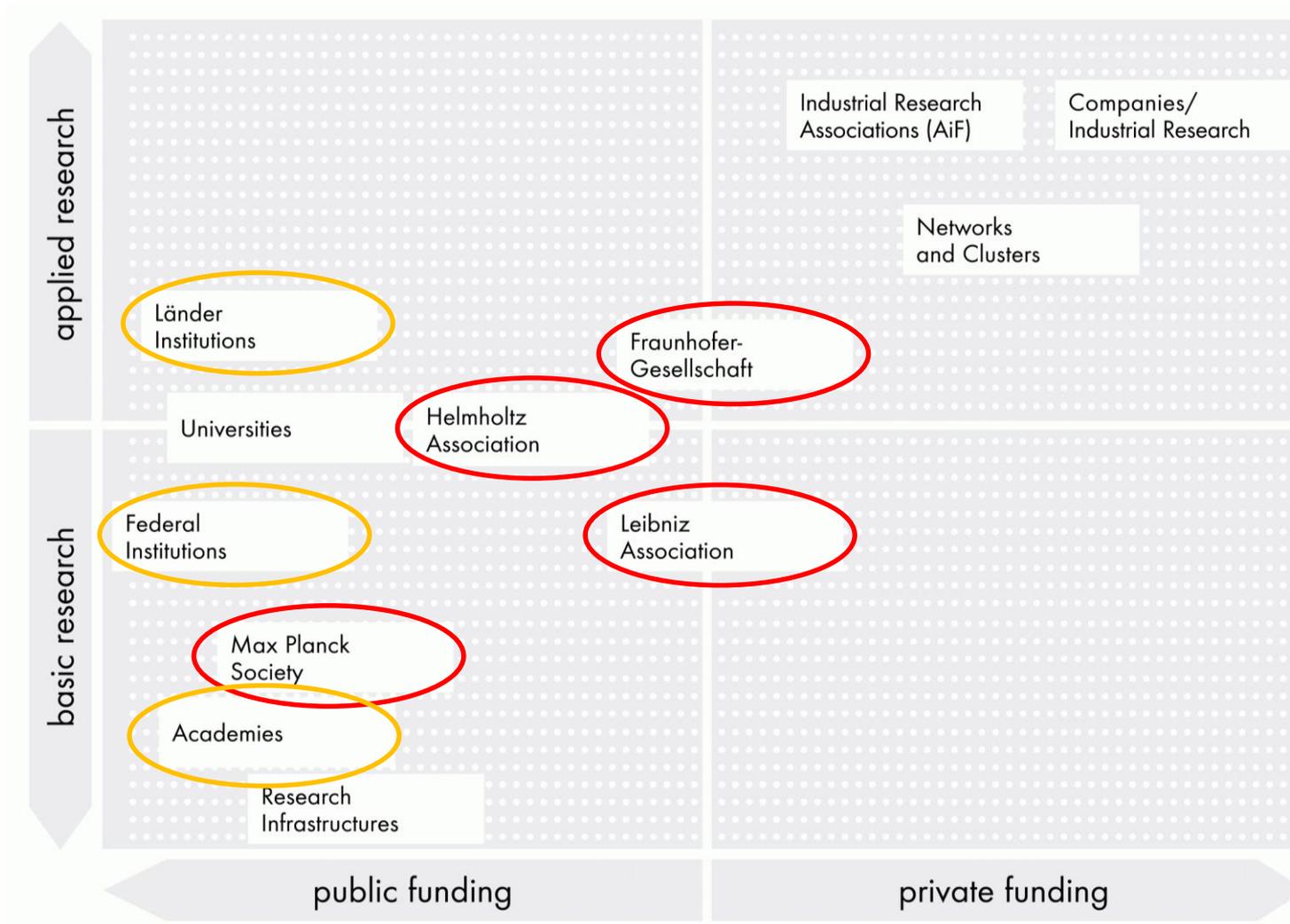
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Non-university research (II)



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Non-university research (II)

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





Departmental research

ROBERT KOCH INSTITUT



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Robert Koch Institute



Departmental research



Federal Institute for Materials Research and Testing



Academies of Sciences and Humanities



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Leopoldina – National Academy of Sciences



Research infrastructures



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Research infrastructures

Roadmap

- Climate research infrastructures, platforms for social, cultural and humanities researchers, Life Science networks, research vessels
- Structured decision-making processes for large-scale projects
- Roadmap projects = planning security, funding
- **Goal:** To provide sophisticated instruments for use in top-level research





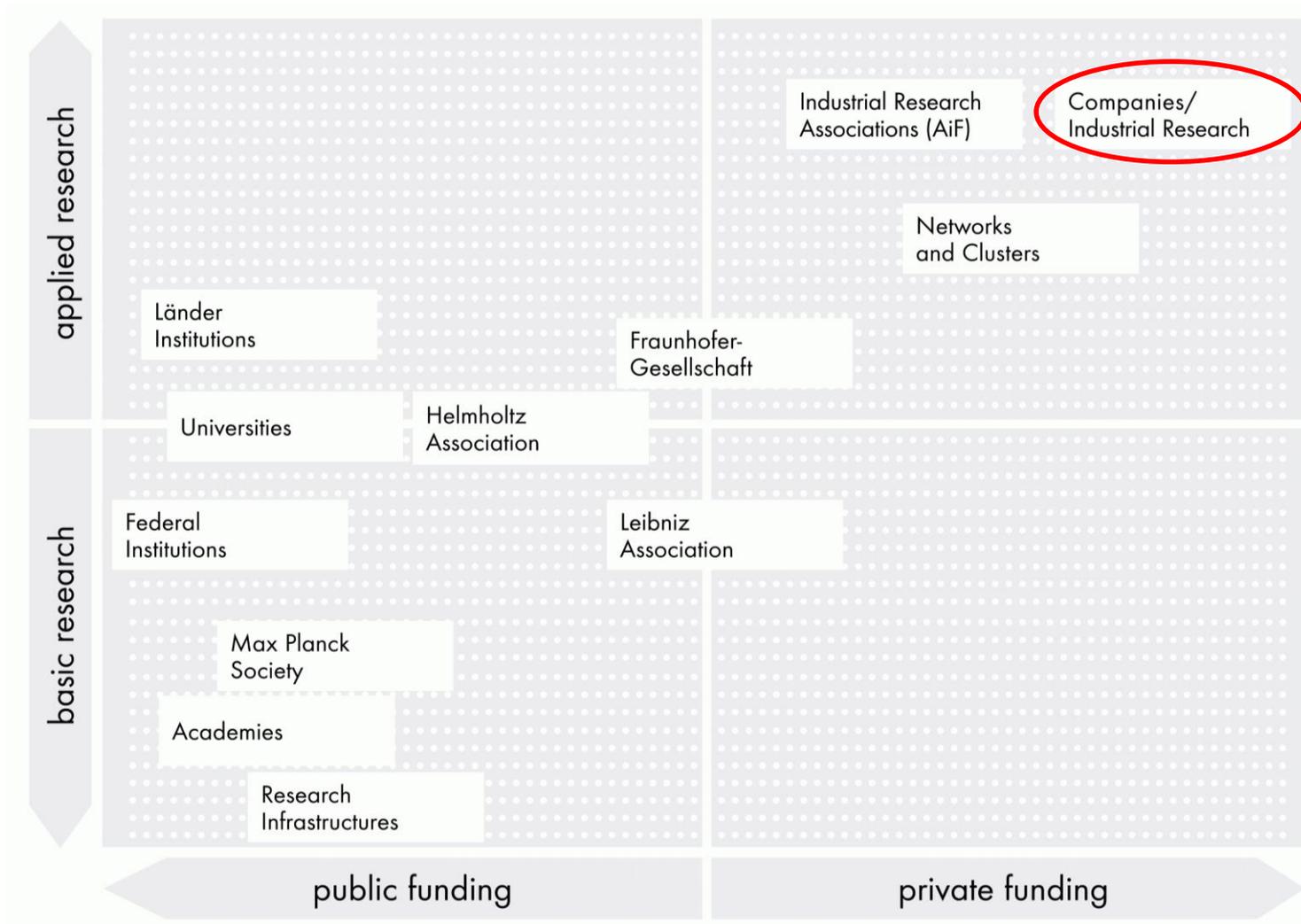
Research infrastructures



Research ice-breaker “Polarstern”



Industrial research



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Industrial research

- 66% 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





Germany – Driving innovation

- 10 German corporations are among the top 20 European innovation drivers

SIEMENS



BOSCH

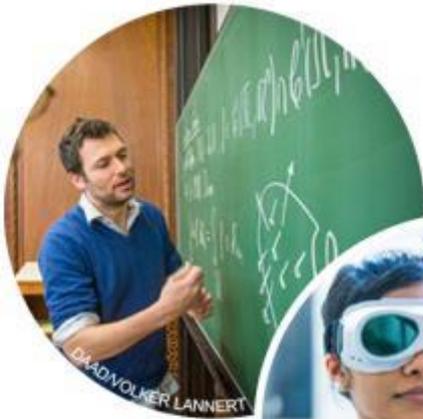


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Funding opportunities in Germany



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and Research

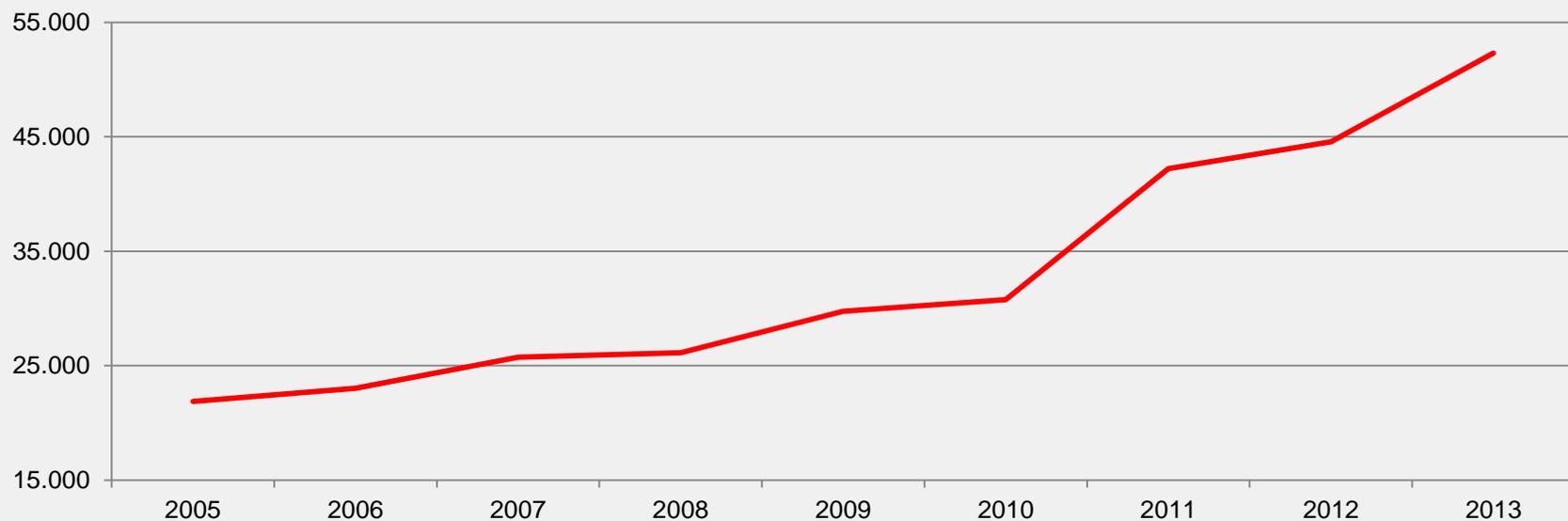
Research in
Germany



Land of Ideas



International researchers



Number of international researchers in Germany

Source: *Wissenschaft Weltoffen*

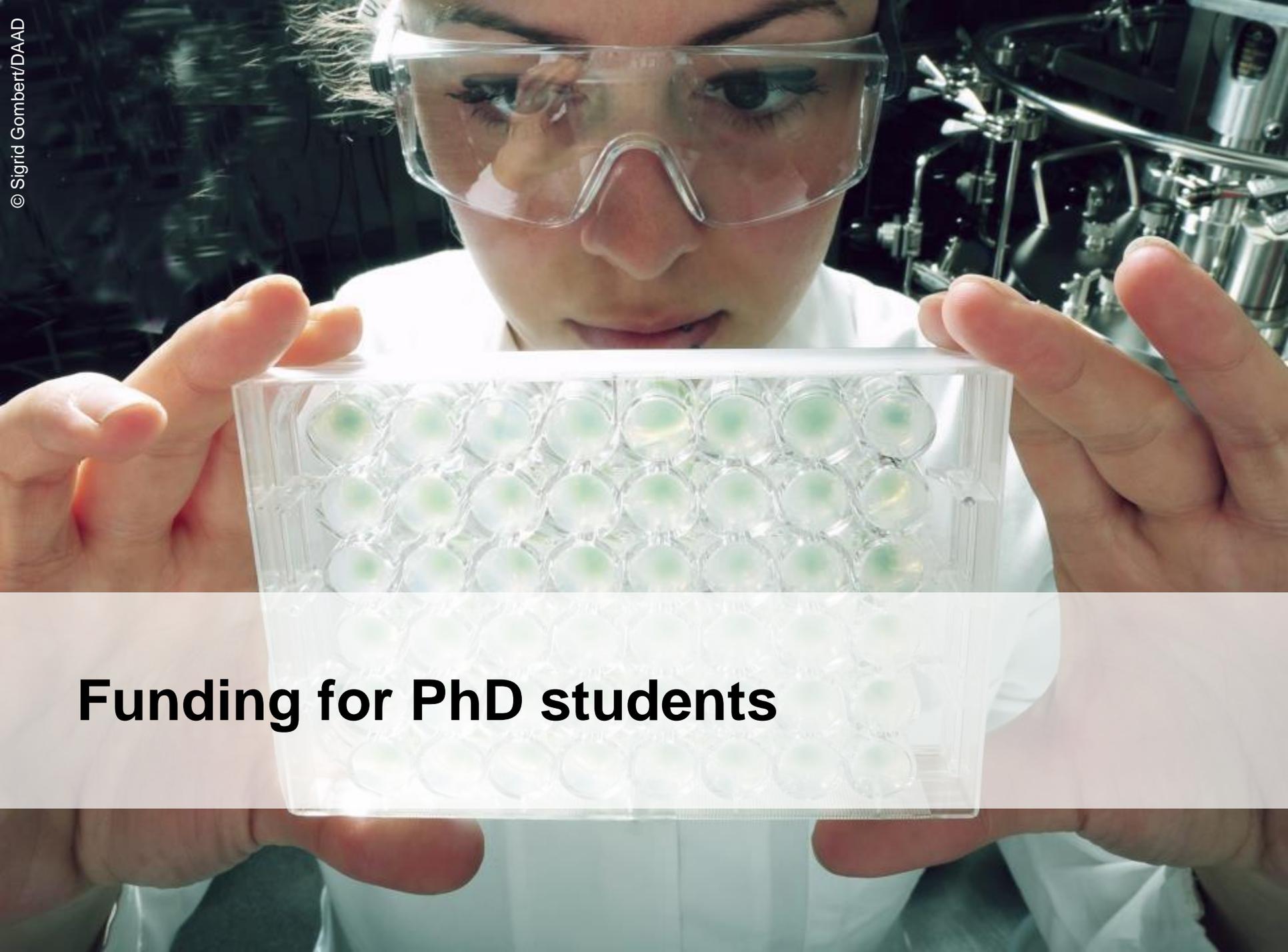


Funding for international researchers

Different programmes for different purposes

Duration	Short-term research stay (up to 2 years)	Long-term research stay (more than 2 years)	Complete doctorate
Type of funding	Grant / scholarship fellowship / award	Work contract	Funding*
Type of doctorate/ position	Individual doctoral project / structured doctoral programme	Postdoctoral researcher / junior research group leader / junior professorship	Senior researcher / research group leader / professorship

*generally includes own salary and expenses for staff and consumables

A close-up photograph of a female scientist wearing safety goggles and a white lab coat. She is holding a clear plastic multi-well plate with both hands, looking intently at the contents. The plate contains a grid of small, circular wells, each containing a small amount of a green, translucent liquid. The background is dark and out of focus, showing some metallic laboratory equipment.

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



Individual vs. structured PhD model

WHAT KIND OF DOCTORATE SUITS ME BEST? THE DIFFERENCES AT A GLANCE

	TRADITIONAL APPROACH	STRUCTURED PROGRAMME
Selecting a research project	<p>I would like to choose my own doctoral subject.</p> <p>I would like to study for my doctorate with a specific researcher.</p>	<p>I prefer thematic integration in a doctoral or research programme.</p>
Organisation	<p>I enjoy working independently and taking responsibility for my work.</p> <p>I would like to plan how I use my time myself.</p> <p>I would like to primarily concentrate on my research topic.</p> <p>I will attend selected subject seminars, if necessary.</p>	<p>I would like to regularly exchange ideas with colleagues.</p> <p>I would prefer to be integrated in a specific project or have a fixed curriculum.</p> <p>I would like my doctoral study to have a definite timeframe.</p> <p>I would like to receive support with articles, lectures or participation in conferences.</p> <p>I would like to deepen my subject knowledge and key skills in seminars.</p>
Supervision	<p>I would prefer in-depth discussions with one supervisor.</p> <p>I want to find a supervisor according to my own criteria.</p>	<p>I would like to have several contact partners.</p> <p>I would like to receive support with official formalities such as registration and a work permit.</p>





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





Financing your PhD

- No tuition fees
- Living costs: approx. 800 € (\$ 900) per month
- Can be self- or parent-financed (external funding)
- Financed by the German supervisor or host institution
- Individual funding: research associate contracts (part-time)
- Apply for a scholarship





Funding for PhD students

Different programmes for different purposes

Duration	Research stay (up to 2 years)	Complete doctorate
Type of funding	Grant / scholarship	Work contract
Type of doctorate	Individual doctoral project	Structured doctoral programme



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		■	■	■		■
Green Talents	■		■			
Indiv. Doct. Projects at Fraunhofer Institutes		■		■	■	
Indiv. Doct. Projects at Helmholtz Centres		■	■	■	■	
Indiv. Doct. Projects at Leibniz Institutes		■		■	■	
Indiv. Doct. Projects at Max Planck Institutes		■		■	■	
Internat. Helmholtz Res. Schools & Grad. Schools		■	■	■		■
International Max Planck Research Schools		■		■		■
Internat. Visiting Res. at Max Planck Inst.	■		■			
Leibniz Graduate Schools and ScienceCampi		■	■	■		■
MSC Innovative Training Networks		■		■		■
Re-invitation Programme	■		■			
Res. Grants - Bi-nationally Superv. Doct. Degrees	■		■			
Res. Grants - Doctoral Programmes		■	■		■	■
Res. Grants - One-Year and Short-Term	■		■			
Research Training Groups		■	■	■		■
Support Early Career Res. in Clusters of Exc.		■	■	■	■	■
Support Early Career Res. in Collab. Res. Centres		■	■	■	■	■



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

- 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
- ...





Research grants – One-year and short-term grants

In Brief

Research or training project at a state-run or state-recognised university or non-university research institute in Germany

DAAD

Who?

PhD students
Postdocs / Junior researchers

Duration?

One-year grants: 7–10 months
Short-term grants: 1–6 months

Value?

750–1,000 €/month + additional allowances

www.funding-guide.de

Research in
Germany

Land of Ideas



Research grants – Doctoral programmes in Germany

In Brief

Doctoral project (individual or structured programme) at a state-run or state-recognised university or non-university research institute in Germany

DAAD

Who?

PhD students

Duration?

Up to 3 years

Value?

750–1,000 €/month + additional allowances

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Research grants – Binationally supervised doctoral degrees

🌸 In Brief

Doctoral degree at home university with integrated research phases in Germany

🌸 Who?

PhD students

🌸 Duration?

Up to 2 years

🌸 Value?

Grant: 1,000 €/month + additional allowances during stay(s) in Germany



DAAD

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DLR-DAAD research fellowships

In Brief

Research / doctorate in space, aeronautics, energy and transportation research at a DLR Institute

Who?

PhD students
Postdocs / Junior researchers
Senior researchers

Duration?

PhD students: 36 months
Junior researchers: 6–24 months
Senior researchers: 1–3 months

Value?

Fellowship: 1,500–2,300 €/month + additional allowances

www.daad.de/dlr

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A photograph of 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. In the center and right, two men in white shirts are looking down at papers on a table. The man on the right is pointing at a document. The background is a plain, light-colored wall.

Funding for postdocs



Funding for postdocs

Different programmes for different purposes

Duration	Short-term (up to 1 year)	Long-term (more than 1 year)	
Type of funding	Fellowship / Grant	Work contract	Funding*
Position	Postdoctoral researcher	Junior research group leader	Junior professorship

*generally includes own salary and expenses for staff and consumables



Funding for postdocs

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

*generally includes own salary and expenses for staff and consumables



Funding for senior researchers



Funding for senior researchers

Different programmes for different purposes

Duration	Short-term (up to 1 year)	Long-term (more than 1 year)	
Type of funding	Fellowship / Grant	Work contract	Funding*
Position	Senior researcher	Research group leader	Professorship

*generally includes own salary and expenses for staff and consumables



Funding for senior researchers

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

*generally includes own salary and expenses for staff and consumables



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



DAAD

www.funding-guide.de



Research stays for university academics and scientists

In Brief

Short-term research stay at a state-run or state-recognised university or non-university research institute in Germany

DAAD

Who?

Postdocs / Junior researchers
Senior researchers

Duration?

1–3 months

Value?

2,000–2,150 €/month, incl. travel allowance

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DLR-DAAD research fellowships

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Who?

PhD students
Postdocs / Junior researchers
Senior researchers

Duration?

PhD students: 36 months
Junior researchers: 6–24 months
Senior researchers: 1–3 months

Value?

Fellowship: 1,500–2,300 €/month + additional allowances

www.daad.de/dlr

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Re-invitation programme for former scholarship holders

In Brief

Research and work projects at a state-run or state-recognised HEI or non-university research institute

DAAD

Who?

Postdocs / Junior researchers
Senior researchers

Duration?

1–3 months

Value?

Fellowship: 2,000–2,150 €/month + travel allowances

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Humboldt Research Fellowship for senior researchers

- ❁ In Brief** Long-term research project with an academic host in Germany
- 🌺 Who?** Senior researchers
- ❁ Duration?** 6–18 months
- 🌻 Value?** Fellowship: 3,150 €/month + additional allowances



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www.humboldt-foundation.de > Sponsorship



Sources of information



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Websites and databases

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- <http://www.funding-guide.de>
- <http://www.euraxess.de>
- <http://www.research-explorer.de>
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Thank you!



Silvia Schmid

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