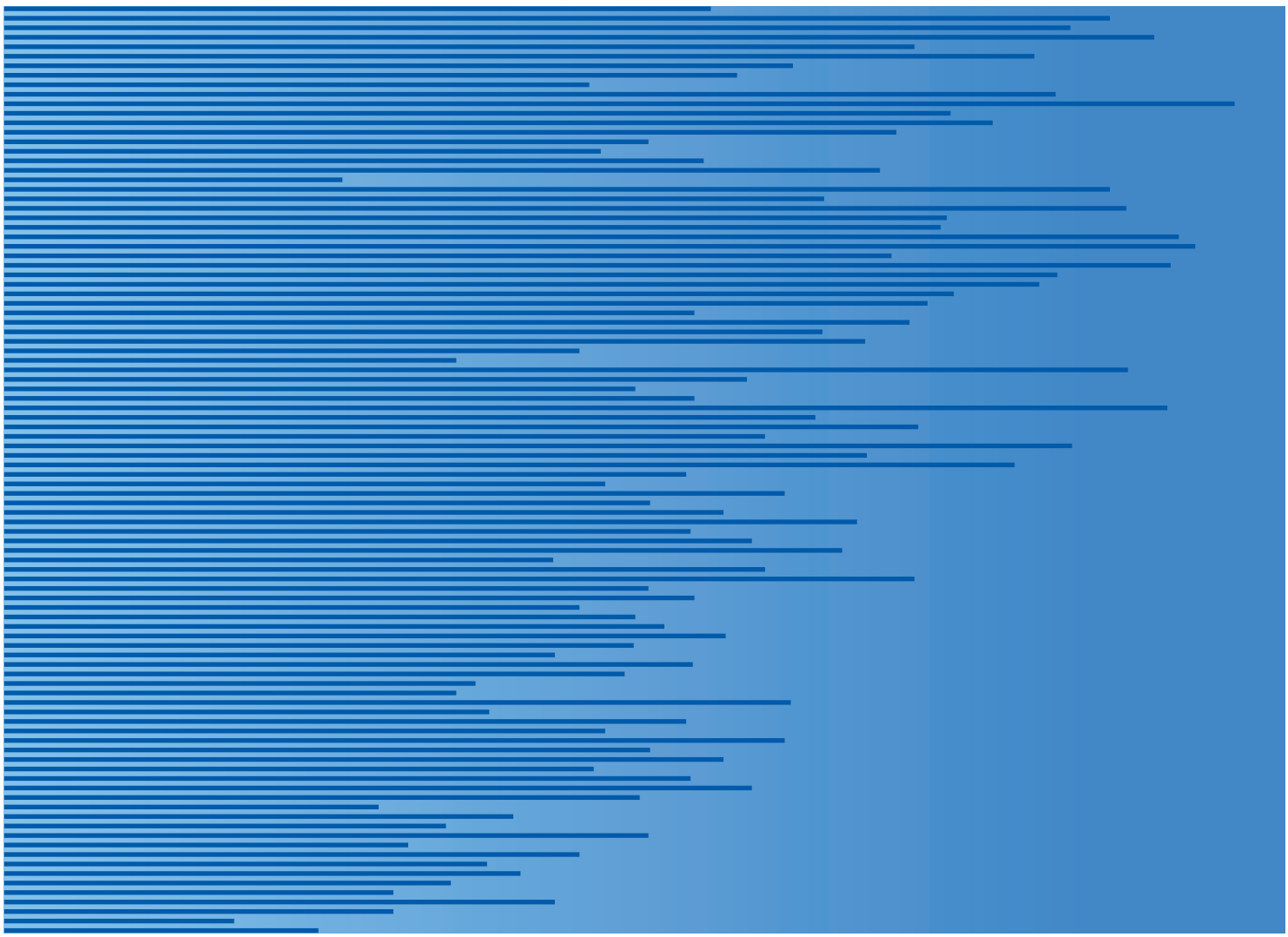
Deutsche
Forschungsgemeinschaft

Funding Ranking 2009
Institutions – Regions – Networks

Thematic Profiles of Higher Education Institutions and Non-University Research Institutions in Light of Publicly Funded Research



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Foreword

The German scientific system is undergoing a fundamental transformation, which is nowhere more evident than in the increasing specialisation and structural differentiation of the university landscape. This is being played out against the backdrop of a competitive system that requires universities to act increasingly as autonomous institutions. Competitive project funding by the Deutsche Forschungsgemeinschaft (DFG), the EU, and the federal and state governments – especially in connection with the Excellence Initiative – as well as other funding sources have driven and sustained this process in an almost catalytic fashion.

When it comes to the analysis and description of this process – as it is reflected in the light of competitive funding – the DFG Funding Ranking has become an established institution and each new report is eagerly anticipated. We hope that the differentiated analyses of the subject-specific funding profiles of research institutions undertaken in the new Funding Ranking will meet the steadily rising demand for information on the part of DFG member institutions and ministries.

The level of acceptance reached by the Funding Ranking and the confidence people have in the accuracy of the information presented in the report find particular expression in the wish for ever more differentiated and thematically specific analyses. By incorporating further evaluations, every new edition attempts to provide a reliable basis of information for the latest discussions related to science policy. In addition to the insights already given, for instance, into different aspects of internationality or networking of research institutions, the latest report presents for the first time a differentiation of DFG awards by the gender of the applicants.

Thematic differentiation of this kind, which throws specific elements of the data into sharp relief and thus opens new perspectives on our research system, could also make a real contribution to changing perceptions and priorities. As a case in point, DFG awards will be differentiated for the first time by funding programme, which will serve to highlight, for example, the share of an institution's total funding made up by Individual Grants. These insights into the funding processes can throw up surprises time and again. They invite the heads of universities who are responsible for evaluating the acquisition of competitive funding, to look at the whole spectrum of research funding, from small individual projects to larger Clusters of Excellence.

Therefore, we hope that the new Funding Ranking will provide orientation for analysing the current stage of differentiation in the scientific landscape as well as a basis for planning and management for individual locations looking to gain and edge in research. Moreover, we hope that it will make a contribution to the debate on research evaluation and its indicators. In this respect too, we commend this report to the attention of all those who are involved in such processes.

We would like to take this opportunity to express our sincerest gratitude to everyone that played a part in its production.

Professor Dr.-Ing. Matthias Kleiner
President of the Deutsche Forschungsgemeinschaft

Professor Dr. Margret Wintermantel
President of the German Rectors' Conference

1 Introduction

In this, the fifth edition of the Funding Ranking[1], the DFG reports on the participation of German research institutions in the funding programmes of the DFG and other national and international research funding institutions including direct project funding by the federal government and EU funding in the Sixth Framework Programme. The figures for third-party funding presented here are based on a very broad and solid foundation. Altogether, the data incorporated in this study accounts for almost 90 percent of the funds granted by public bodies in the form of third-party funding. The term "third-party funding" refers to funds that originate from sources other than the basic finance budget provided by the responsible state ministries. They are usually funds which are distributed on a competitive basis.

One of the special features of the Funding Ranking is its methodical approach: With the exception of the data on personnel and finances which is collected every year by the State Statistical Offices, the figures that form the basis of this report are all provided by the public funding institutions themselves. The resulting statistics are therefore not rooted in error-prone, costly surveys of funding recipients; they are based on data which directly reflects the funding activities of the various funding sources.

Apart from providing *funding statements for higher education institutions (HEIs) and non-university research institutions* and examining *the clusters and networks formed between these institutions* as a result of joint research projects, another important goal of the DFG Funding Ranking is to identify the *thematic priorities set by research institutions* as a result of externally funded research projects.

In light of the indicators and statistical data presented here, it is not only possible to determine the research profiles of individual institutions, but also, what is perhaps even more interesting, to compare them with other profiles. For this purpose, the report employs a method of visualisation specially developed for the DFG Funding Ranking by the Max Planck Institute for the Study of Societies in Cologne. These profile analyses offer a range of insights into specific priorities and into the relative emphases the institutions place on different subjects.

The strong and overwhelmingly positive response to previous reports has encouraged the DFG to further develop this method of presenting the funding activities of the partners involved in the Funding Ranking and to establish it as a regular information service. Since the third edition, the DFG has been receiving active support by the Stifterverband für die deutsche Wissenschaft (Donors' Association for the Promotion of Sciences and Humanities in Germany). This support as well as the close cooperation of various funding institutions has enabled us to continually expand the scope of the report.

As regards the DFG Funding Ranking 2009, the report has been enhanced in particular through the *expansion of subject-specific analyses*. In the analyses of research funding by the DFG, for instance,

[1] Previous editions can be found at www.dfg.de/en/ranking/archive.

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this edition distinguishes between *48 different research fields*. These are based on the four-tier subject classification system, which is implemented in the DFG's Review Board system. This system also serves as a reference for the subject classification of most of the other data sources used in the Funding Ranking.

For example, the representation of thematic profiles that result from DFG awards is supplemented by information on direct project funding by the federal government and the EU in various thematic funding areas. Compared to the last edition of the Funding Ranking, the comparative analyses of funding acquisition from the various funding sources in different programmes or subject areas have been expanded.

Another innovation of the current report is a comparative analysis of the *participation of men and women in DFG funding activities*. The DFG Funding Ranking thus makes a contribution to ensuring transparency in gender equality issues. It also provides its member HEIs with figures that help in the benchmarking of this topic, which is of growing importance to research and research funding.

Moreover, the "European dimension" of the Funding Ranking has been extended, since data on participation in the funding lines of the European Research Council (ERC), newly established in 2007, have been included for the first time.

The DFG Funding Ranking 2009 is structured as follows: Supported by comprehensive statistical analyses, **Chapter 2** first describes the data sources that form the basis of the report. These sources reflect the funding activities of the principal research funding bodies and state institutions which are of importance to German research institutions. In view of the main focus of the DFG Funding Ranking – the ranking analyses and the research profiles of HEIs – there is also a short overview of the resources and funds available to universities, with special reference to the difference between *basic and third-party funding*.

Based on the indicators introduced in the previous chapter, **Chapter 3** goes on to examine the *priorities set by HEIs, non-university research institutions and regions in particular research fields*. In the process, the *cross-disciplinary funding profiles* which have been deduced from the main funding indicators – i.e., DFG awards, direct R&D project funding by the federal government and R&D funding in the Sixth EU Framework Programme – are also presented.

Building upon this general survey of research institutions and regions, **Chapter 4** contains *detailed subject-specific analyses*, differentiated by the four scientific disciplines the DFG differentiates between: the humanities and social sciences, life sciences, natural sciences and engineering sciences. Alongside specific participations in thematic programmes of the EU and the federal government, the study primarily focuses on the *funding rankings* of HEIs with the highest volume of DFG awards.

In addition to the tabular information, which presents the activities of individual institutions in quantified form, the above-mentioned method of visualisation is used to illustrate specific thematic priorities and funding profiles with a precise differentiation between 48 research fields within the four scientific disciplines.

Networking and cooperation between HEIs and non-university research institutions in the form of joint participation in DFG-funded cooperation programmes is also examined. Sections 4.1 to 4.4 provide information, including a statement of figures, on the number of *guest researchers funded by the ERC, the DAAD or the AvH* working at a HEI in each scientific discipline. Finally, information on the number of *DFG reviewers and members of DFG Review Boards* per HEI is used as an indicator for scientific expertise.

Chapter 5 offers a short general overview of the main findings and a sketch of the plans which the DFG is pursuing to further develop the Funding Ranking project. An extensive **appendix of tables** presents the data which forms the basis of the report differentiated by HEIs and non-university research institutions, by subjects and by specific funding programmes.

The printed version of the Funding Ranking is accompanied by an Internet presence that includes both an electronic version of the report and some additional statistics in German (www.dfg.de/ranking). As in 2003 and 2006 additional statistics are also available in English (cf. www.dfg.de/en/ranking). This is intend-

ed in particular for international scientists and academics and for those employees of international research and funding institutions who have a special interest in the "centres of research" in Germany.

2 Overview of Research Funding by Different Funding Sources

This chapter describes the data sources incorporated in the report, which reflect the funding activities of the principal research funding bodies which are of importance to HEIs and non-university research institutions. The figures presented here offer important structural information on the promotion of research and are essential to the correct interpretation of the third-party funding indicators employed in chapters 3 and 4.

2.1 Resources and Funding of Higher Education Institutions

The State Statistical Offices, under the leadership of the Federal Statistical Office, conduct annual surveys on the total revenues of HEIs. These figures provide crucial background information for the DFG Funding Ranking, since they allow an estimate of the relative weighting of the third-party funding data that forms the basis of this report.

The three large categories of income distinguished by the statistics for HEIs are *administrative income* (including income from university hospital care), *third-party funding income* and *basic funds*, which taken together are used to cover *current expenditure*.

HEI Expenditure Amounts to About € 30 Billion per Year

The data compiled by the Federal Statistical Office is given in Table 2-1. It documents the revenues of almost 400 German HEIs for the reporting year 2006, taking into consideration *universities, universities of applied sciences* (including universities of applied sciences for civil service applicants) and *colleges of education, theology and art*. Altogether, the current expenditure of these HEIs amounts to € 29.5 billion. It is financed by € 11.2 billion in administrative income, € 3.9 billion in third-party funding income and € 14.5 billion in basic funds.

Table 2-1:
HEI expenditure 2006 by scientific discipline

Scientific discipline	Current expenditure (= Total)	Administrative income		Third-party funding income		Current basic funds	
	Mio. €	Mio. €	% of total	Mio. €	% of total	Mio. €	% of total
Humanities and social sciences	5,554.6	327.3	5.9	602.3	10.8	4,625.1	83.3
Life sciences	16,799.7	10,652.9	63.4	1,532.3	9.1	4,614.5	27.5
Natural sciences	2,708.2	34.3	1.3	628.3	23.2	2,045.7	75.5
Engineering sciences	4,452.6	186.4	4.2	1,091.2	24.5	3,175.0	71.3
Total	**29,515.2**	**11,200.9**	**37.9**	**3,854.1**	**13.1**	**14,460.2**	**49.0**

Data basis and source:
Federal Statistical Office (DESTATIS): The current basic funds, administrative income and third-party funding of universities, universities of applied sciences and colleges of education, theology and art in 2006.
Calculations by the DFG.

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Table 2-2:
Universities' income from third-party funding 2006 relative to number of full-time scientific personnel by scientific discipline

Scientific discipline	Mio. €	Prof.		Scientists in total	
		No.	Tsd. € per Prof.	No.	Tsd. € per Sci.
Humanities and social sciences	502.4	8,732	57.5	30,261	16.6
Life sciences	1,515.5	4,777	317.2	50,048	30.3
Natural sciences	617.2	3,799	162.5	18,916	32.6
Engineering sciences	972.7	3,220	302.1	23,061	42.2
Total	**3,607.9**	**20,528**	**175.8**	**122,286**	**29.5**

Data basis and source:
Federal Statistical Office (DESTATIS): Universities' third-party funding and full-time scientific and artistic personnel (based on full-time equivalents) in 2006.
Calculations by the DFG.

Income from Third-Party Funding is Growing in Importance

On average, HEIs cover about 38 percent of their current expenditure with administrative income (primarily income from university hospitals), 13 percent with income from third-party funding and 49 percent with basic funds. As shown in Table 2-1, which distinguishes between four scientific disciplines, the life sciences account for the highest expenditure by a wide margin. At €16.8 billion, the costs incurred in this area constitute well over half the total expenditure borne by HEIs. Life sciences also yield the greatest share of administrative income, proceeding mainly from the running of university hospitals[2]. Excluding administrative income from the basis of calculation, we can determine that third-party funding has a share of more than 21 percent. The development trend of the ratio between basic and third-party funding shows that the share of third-party funding has risen steadily over time. In the year 2000 it was still only 18 percent, and in 1995 a mere 14 percent[3].

Universities Receive 94 Percent of All Third-Party Funding Earned by HEIs

A glance at the different types of HEIs reveals most distinctly that universities have a significantly higher income from third-party funding. The total revenues from third-party funding acquired by universities amounted to €3.6 billion. This corresponds to a 94 percent share of all third-party funding received by HEIs – a clear indication that an exclusive focus on universities would go a long way towards covering the entire field of HEIs involved in the competition for third-party funding. With this in mind, the specific third-party funding situation of *universities* in the various scientific disciplines is presented in Table 2-2, with reference to the number of researchers working in these fields.

Scientific Personnel Used as a Factor in Comparative Analyses

Alongside the examination of absolute figures, another important element of benchmarking studies or ranking studies, which are ultimately designed to facilitate comparisons, are correlations based on figures which relativise the size of an institution. The total number of scientific personnel working full-time at an institution and in particular the number of professors working there (calculations based on full-time equivalents) in the reporting year 2006 is referred to as a data basis in the DFG Funding Ranking 2009[4]. The universities that are the subject of the analysis presented in Table 2-2 employed more than 20,000 professors and almost 120,000 scientists and academics[5].

[2] 95 percent of the administrative income of the HEIs, amounting to €11.2 billion, is accounted for by the life sciences.

[3] Cf. Federal Statistical Office (2006).

[4] As regards the personnel figures stated in the Funding Ranking, it must be noted that they are based on the declarations of HEIs to the State Statistical Offices. The Federal Statistical Office then uses this information and double-checks with the respective HEI if any irregularities appear. However, it is still possible, as described by an article in *duz* magazine, for transcription errors or inaccurate information to occur. Cf. Hauser (2009).

[5] Tables A-3 and A-4 in the appendix state the number of professors and the total number of researchers employed at HEIs by institution per scientific discipline.

Varying Significance of Income from Third-Party Funding in Each Scientific Discipline

With reference to income from third-party funding, Table 2-2 shows that in absolute terms the universities acquire most third-party funding in the life sciences. At €1.5 billion, scientists working in this area attracted more than 40 percent of all third-party funding received by universities. In relative terms too, life sciences – alongside engineering sciences – are among the disciplines with the highest level of third-party funding. While over €300,000 in third-party funding was acquired per professor (full-time equivalents) during the reporting year 2006, the figure for natural sciences was €160,000 and for the humanities and social sciences almost €60,000 in the same period.

Performance-Based Resource Allocation Must Make Allowance for Subject-Specific Third-Party Funding Requirements

The short comparative analysis demonstrates that the significance of third-party funding varies widely from one subject to another[6]. It is therefore not appropriate to compare the third-party funding success of an art historian, for example, with that of a production engineer. If third-party funding revenue is regarded as a performance indicator, for example, with a view to performance-based resource allocation, then the differences between scientific disciplines shown here demonstrate the need to apply subject-specific standards in the weighting of this indicator. In the same way, any comparison of HEIs as a whole must take into account the profiles of the different institutions, because technical universities and universities that run hospitals or have a strong focus on medical research have a very different competitive position from HEIs with a subject portfolio heavily slanted toward the humanities and social sciences.

The DFG Funding Ranking takes this circumstance into account through the central role given to the formation of thematic profiles in its analyses (see especially Chapter 3), and the findings reported in Chapter 4 are consistently broken down into the four scientific disciplines presented in Table 2-2.

Sources of Third-Party Funding

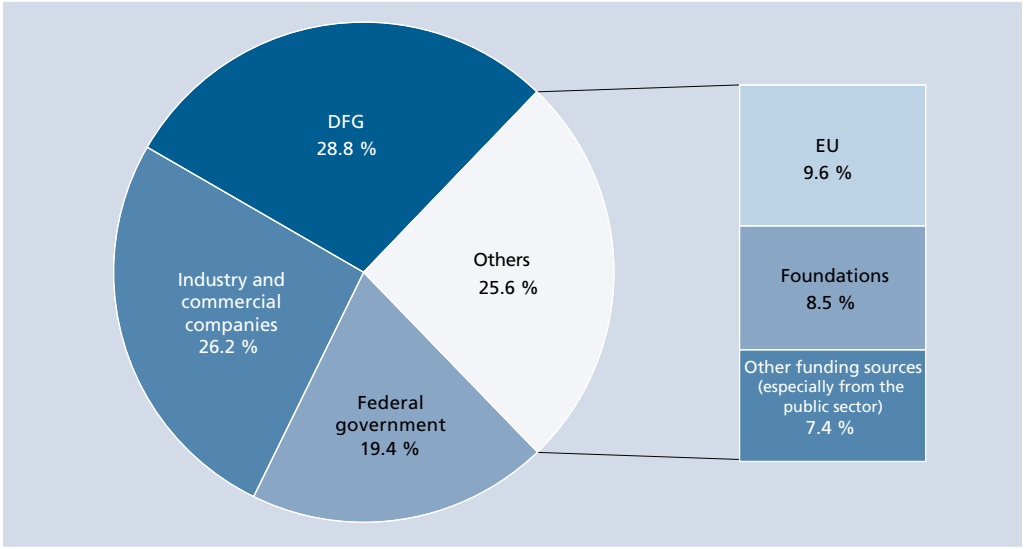
With reference to the various funding sources that finance externally funded projects at HEIs, Figure 2-1 reveals the particularly high share accounted for by DFG funding. The DFG is responsible for 29 percent of the total €3.9 billion in third-party funding earned by HEIs in the reporting year 2006. The federal government contributed 19 percent, while EU funding had a 10 percent share. Commercial business accounted for a share of 26 percent. The DFG is therefore the largest individual sponsor of externally funded research at German HEIs[7].

Whereas the data available to the first two DFG Funding Rankings only covered *research funding by the DFG* (cf. DFG 1997 and 2000), it was possible to enlist other funding sources for the 2003 report. With the cooperation of the *Alexander von Humboldt Foundation (AvH)* and the *German Academic Exchange Service (DAAD)* and based on the funding they provided for research stays of top international scientists and academics at German research institutions, it became possible to correlate information concerning the DFG funding received by HEIs with information regarding their international appeal. Further data from the European Commission allowed for comparative analyses that looked at the participation of universities in the Fifth *EU Framework Programme* (FP5) (cf. DFG 2003). The 2006 Funding Ranking included a kind of intermediate report on the Sixth EU Framework Programme. Moreover, a significant expansion of the data basis was made possible by the inclusion of *direct R&D project funding by the federal government* and of funding by the Federal Ministry of Economics and Technology for programmes supervised by the *German Federation of Industrial Cooperative Research Associations (AiF)* (see DFG 2006). Funding data on the newly established *European Research Council (ERC)*

[6] While Table A-1 in the appendix reports the total income of individual HEIs, Table A-2 documents the data provided by the Federal Statistical Office on the HEIs' income from third-party funding, differentiated by subject area.

[7] It is expected that the DFG's importance will increase with the expansion of the DFG funding portfolio (e.g. through the funding measures belonging to the Higher Education Pact 2020) described in Section 2.2. This will, however, only appear in financial statistics after the year 2006 which is studied here.

Figure 2-1:
Third-party funding income 2006 of HEIs by funding source



Notes:
The graph is based on € 3.9 billion, the total income from third-party funding acquired by HEIs.

Data basis and source:
Federal Statistical Office (DESTATIS): The third-party funding acquired in 2006 by universities, universities of applied sciences and colleges of education, theology and art.
Calculations by the DFG.

have been incorporated for the first time in the DFG Funding Ranking 2009.

The funding activities of the funding organisations covered in this report are presented in detail below.

2.2 The Deutsche Forschungsgemeinschaft

The Deutsche Forschungsgemeinschaft (German Research Foundation, DFG) is the principal funding organisation for research in Germany. Its main task is to provide financial support for projects with a basic research orientation carried out by scientists and academics working at universities or non-university research institutes. The DFG pursues its primary objective, to serve research in all fields, as a self-governing organisation of German research. It is an association under private law. Its members include most German universities, non-university research institutions, scientific associations and the Academies of Sciences and Humanities. The DFG receives its resources from the federal and state governments, which are represented in all decision making bodies, though scientists make up the majority. In keeping with its statutes, the DFG supports all subjects and scientific disciplines from an annual budget which is currently over €2 billion.

The DFG's Review System

Scientists and academics or universities present their projects in proposals and the best projects are selected on a competitive basis. For this decision-making pro-cess, the DFG relies on a voluntary panel of experts from the relevant field (*peer review process*). An important feature of the DFG's review system is the division of labour between the review of funding proposals, on the one hand, and the evaluation of these reviews on the other. The decisive criteria for the selection of reviewers are scientific qualification and recognition as well as specialist knowledge of the field of the proposal, while at the same time avoiding conflicts of interest. Between 2005 and 2007 the DFG's decision-making bodies relied on the expertise of more than 15,000 reviewers, roughly 23 percent of who are from abroad (see Figure 2-2)[8].

Elected Members of the DFG's Review Boards

The DFG's Review Boards, whose members are elected every four years from

[8] Tables A-15 and A-16 in the appendix give the number of reviewers per HEI and non-university research institution, differentiated by 14 subject areas. Further information on the data basis used and the methodical approach can be derived from Section A.1.2 in the appendix.

among scientists and academics at HEIs and non-university research institutions, are responsible for quality assurance and the evaluation of the reviews submitted by these experts.

The last election of Review Board members for the term of office from 2008 to 2011 was held in 2007. It was the first online election of its kind and altogether more than 36,000 scientists and academics returned their electronic ballots. In this way, the 594 Review Board members were selected from more than 1,300 candidates. At the time of their election, the chosen Review Board members were working at a total of 71 German HEIs and 61 non-university research institutions[9]. For the purposes of the Funding Ranking, the number of persons consulted in the course of the DFG's review process – whether as members of Review Boards or as reviewers – is an important indicator of scientific expertise, which is used in particular for the subject-specific ranking analyses in Chapter 4[10].

Programme Portfolio of the DFG

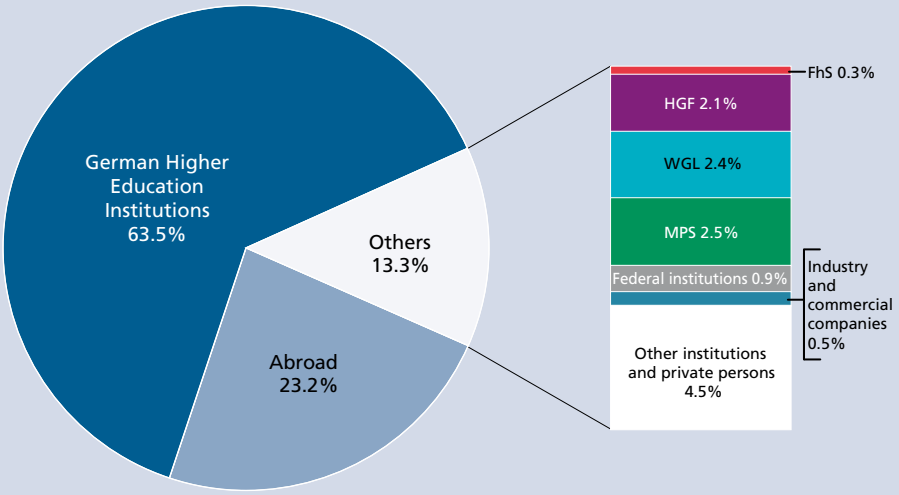
With reference to the DFG's programme portfolio, Table 2-3 shows the number of grants allocated to funding programmes and individual measures (in the form of new and renewal proposals) and the total amount allocated to each funding programme. The programmes on which the analysis is based cover almost the entire range of subject-specific funding programmes offered by the DFG[11]. The DFG Funding Ranking 2009 focuses on data for *DFG awards* granted during the *period from 2005 to 2007*; it does not make reference to the funds *paid out* during this period. *Over three years, a total of € 5.8 billion* was granted for the programmes listed in the table. This corresponds to a rise of greater than 50 percent compared to the previous DFG Ranking (2002 to

[9] In Section 2.9, the figures for the Review Board Election 2007 are also differentiated by scientific discipline. Tables A-17 and A-18 in the appendix give the number of Review Board members per HEI and non-university research institution. There is further information on the Review Board Election 2007 available from the DFG's Internet site (http://www.dfg.de/en/dfg_profile/structure/statutory_bodies/review_boards/fk_2008_2011/index.html).

[10] The level of importance assigned by members of the DFG Review Boards to the inclusion of reviewer activities in ranking analyses was expressed in an iFQ survey on the DFG's review system (cf. Hornbostel/Olbrecht 2007).

[11] Funding for the maintenance of international scientific contacts, for research facilities, or for scientific library services or information systems is not taken into account.

Figure 2-2:
Institutional origin of DFG reviewers



Notes:
The graph is based on data for a total of 15,563 persons, who participated in the evaluation of funding proposals which were decided by the DFG during 2005 to 2007. Further information on the data basis used and the methodical approach can be derived from section A.1.2 in the appendix.

Data basis and source:
Deutsche Forschungsgemeinschaft (DFG): Reviewers of proposals submitted within the framework of the Individual Grants Programme and the Coordinated Programmes from 2005 to 2007.
Calculations by the DFG.

Table 2-3:
DFG funding portfolio: Awards in the years 2005 to 2007

Programme group / funding programme[1]	Programmes	Individual measures	Funds	
	No.	No.	Mio. €	%
Individual Grants and Prizes		**16,377**	**2,050.2**	**35.4**
Individual Proposals[2]		15,137	1,767.0	30.5
Publication Grants		410	2.9	0.1
Heisenberg Programme		259	34.9	0.6
incl. Heisenberg Fellowships		227	28.4	0.5
incl. Heisenberg Professorships		32	6.5	0.1
Emmy Noether-Programme		480	181.8	3.1
incl. International Fellowships[3]		18	0.9	0.0
incl. Independent Junior Research Groups[4]		462	180.9	3.1
EURYI Awards		15	6.9	0.1
Gottfried Wilhelm Leibniz Prize		31	56.0	1.0
Other Prizes[5]		45	0.7	0.0
Coordinated Programmes	**1,214**	**23,406**	**3,746.0**	**64.6**
Excellence Initiative and its funding lines	85	85	1,181.5	20.4
incl. 1st funding line: Graduate Schools	39	39	134.2	2.3
incl. 2nd funding line: Clusters of Excellence	37	37	707.9	12.2
incl. 3rd funding line: Institutional Strategies	9	9	339.4	5.9
DFG Research Centres	6	6	100.1	1.7
Humanities Research Centres	6	6	18.5	0.3
Collaborative Research Centres and programme variants	344	15,979	1,357.6	23.4
incl. Collaborative Research Centres	276	13,816	1,167.4	20.1
incl. Transfer Units	27	174	16.2	0.3
incl. Transregional Collaborative Research Centres	36	1,721	149.7	2.6
incl. Cultural Studies Research Centres	5	268	24.3	0.4
Priority Programmes	127	4,153	456.7	7.9
Research Units and programme variants	233	2,764	328.2	5.7
incl. Research Units	195	2,362	288.2	5.0
incl. Clinical Research Units	38	402	40.0	0.7
Research Training Groups	413	413	303.5	5.2
Total	**1,214**	**39,783**	**5,796.2**	**100.0**

Notes:
For methodical reasons, the Excellence Initiative funding decisions made at the end of 2006 and the end of 2007 are included in the calculation in the form of three-year awards rather than five-year awards. Further remarks on methodology, with particular reference to the handling of the Excellence Initiative, can be found in the appendix.

[1] Not including programmes for the development of infrastructure, committees and commissions, or international scientific contacts.
[2] Including funding initiatives in bioinformatics, clinical studies and scientific networks.
[3] Programme expired in 2005.
[4] Including action plan in computer science.
[5] Heinz Maier-Leibnitz Prize, Communicator Award, von Kaven Award, Bernd Rendel Prize, Ursula M. Händel Animal Welfare Prize, Gerhard Hess Programme, Landwirtschaftliche Rentenbank Prize, Albert Maucher Prize, Eugen and Ilse Seibold Prize, Copernicus Award; these are financed by special funding.

Data basis and source:
Deutsche Forschungsgemeinschaft (DFG): DFG awards 2005 to 2007.
Calculations by the DFG.

2004: €3.7 billion). Aside from a general increase in the budget available to the DFG, this growth can be attributed to the causes mentioned below.

Expansion Due to the Excellence Initiative of the States and the Federal Government

A total of €1.9 billion has been provided by the federal government (75 percent) and the states (25 percent) for the *Excellence Initiative*, covering the years 2006 to 2011. These funds were assigned to the programme's three funding lines (Graduate Schools, Clusters of Excellence, and Institutional Strategies for Advancing Top-Level University Research). The funding decisions in the Excellence Initiative were made in two rounds (at the end of 2006 and at the end of 2007). The grants decided in this programme cover a five-year period. Instead of this five-year funding period, each of the funding lines is incorporated into the report with a three-year funding period, analogous to the reporting period applied to the other programmes. This should ensure that

funding awarded in the context of the Excellence Initiative are given equal consideration and that they are allocated the relative importance which the Excellence Initiative is expected to take in relation to the other DFG funding programmes studied here[12].

Expansion Due to Higher Education Pact 2020

As part of the Higher Education Pact 2020, the states and the federal government have agreed an *overhead allowance* for the DFG. Since 1 January 2007, an overhead allowance has been granted for DFG Research Centres, Collaborative Research Centres, and Research Training Groups to cover the indirect costs associated with the projects. Since 1 January 2008 (time of the approval), this has also been applicable, apart from a few exceptions, to new awards in other DFG programmes. The overhead allowance amounts to 20 percent of the claimable, direct project expenses and has been incorporated into the funding statistics at a proportional rate. The amounts stated in the DFG Funding Ranking are inclusive of these overhead allowances.

DFG Awards by Programme Group

Based on the calculation logic explained above, the awards granted in the three reporting years from 2005 to 2007 add up to a total of *€5.8 billion*. This analysis is based on around *40,000 decisions* taken during the years 2005 to 2007 involving funding amounts from a few thousand to several million euros. Grants of a few thousand euros include, for instance, funds to cover publishing costs and run-out funding for projects which will be completed soon. Those amounting to several million euros include, for instance, the Gottfried-Wilhelm Leibniz Prize[13] and the three funding lines of the Excellence Initiative.

During the period under consideration, a total of €4.6 billion was allocated to the traditional DFG programmes, and *€1.2 billion* was provided for the *Excellence Initiative*, based on a three-year funding period. This corresponds to a *share of 20 percent* of the total volume of DFG grants studied in this report. As regards the distribution of funds within the Excellence Initiative, 29 percent went to the third funding line (Institutional Strategies). The first funding line (Graduate Schools) accounted for 11 percent, and the greater portion of the funds was allocated to the second funding line (Clusters of Excellence) with 60 percent.

The three funding lines of the Excellence Initiative are assigned to the DFG's *group of Coordinated Programmes*. The chief funding goals of the Coordinated Programmes include aspects such as cooperation and structural development through regional and trans-regional collaborations or the concentration of scientific potential on highly topical research areas at particular research locations.

Chapter 4 contains analyses which demonstrate the level and type of support provided by DFG-funded Coordinated Programmes to inter-institutional cooperation. This question is of particular interest in the context of the DFG Funding Ranking, because apart from the internal research activities that can be read from various indicators, it is also possible to discern to what extent scientists successfully manage to involve partners from neighbouring HEIs and non-university research institutions in joint research projects.

During the reporting period, about €2 billion was provided for the *Individual Grants group*, which includes the Individual Grants Programme as well as the promotion of young researchers and prizes. This corresponds to a 35 percent share of the total funding volume.

Funding Decisions in the Excellence Initiative

The introduction of the DFG Research Centres and the Excellence Initiative in particular have given a major boost to the structure-building effects brought about by research funding measures – previously associated primarily with Collaborative Research Centres and Research Training Groups. On average, the total funding received by a Collaborative Research Centre in a three-year period is €3.9 million, while Clusters of Excellence have an average total funding of about approximately €19.1 million and DFG Research Centres receive about €16.7 million in the same period. In like manner, there is

[12] Further information on the data basis used and the methodical approach can be derived from Section A.1 in the appendix.

[13] In 2007 the award volume associated with the prize was increased from €1.5 to €2.5 million.

Figure 2-3:
Funding decisions within the scope of the Excellence Initiative

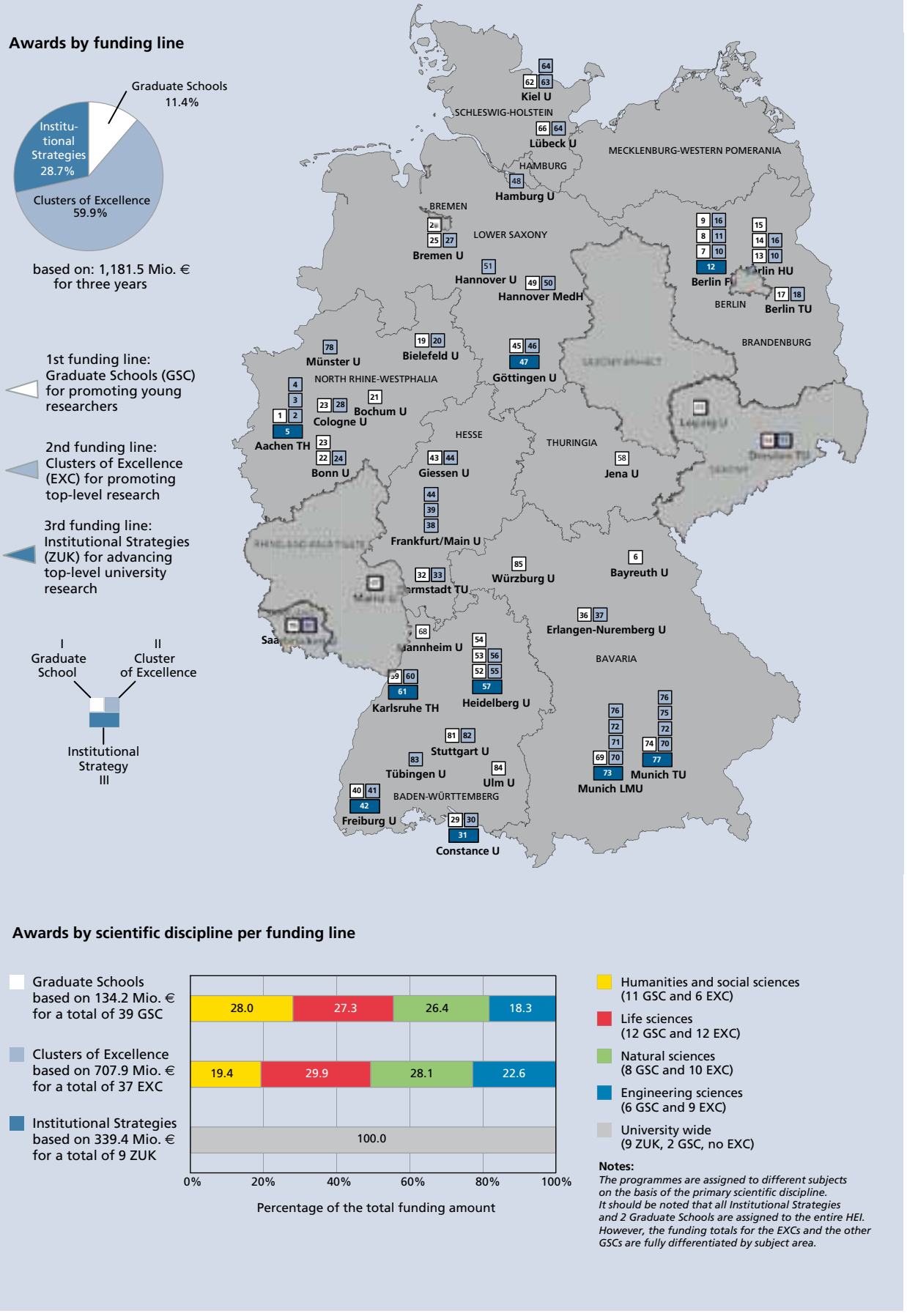


Figure 2-4:
Projects approved within the scope of the Excellence Initiative (in alphabetical order of the relevant host universities)

1 Aachen TH
Aachen Institute for Advanced Studies in Computational Engineering Science

2 Aachen TH
Ultra High-Speed Mobile Information and Communication

3 Aachen TH
Integrative Production Technology for High-Wage Countries

4 Aachen TH
Tailor-Made Fuels from Biomass

5 Aachen TH
RWTH 2020: Meeting Global Challenges

6 Bayreuth U
Bayreuth International Graduate School of African Studies

7 Berlin FU
Graduate School of North American Studies

8 Berlin FU
Muslim Cultures and Societies: Unity and Diversity

9 Berlin FU
Friedrich Schlegel Graduate School of Literary Studies

10 Berlin FU together with Berlin HU*
Topoi. The Formation and Transformation of Space and Knowledge in Ancient Civilizations

11 Berlin FU
Languages of Emotion

12 Berlin FU
Free University Berlin - An International Network University

13 Berlin HU
Berlin School of Mind and Brain

14 Berlin HU
Berlin-Brandenburg School for Regenerative Therapies

15 Berlin HU
Berlin Graduate School of Social Sciences

16 Berlin HU together with Berlin FU*
NeuroCure: Towards a Better Outcome of Neurological Disorders

17 Berlin TU
Berlin Mathematical School

18 Berlin TU
Unifying Concepts in Catalysis

19 Bielefeld U
Bielefeld Graduate School in History and Sociology

20 Bielefeld U
Cognitive Interaction Technology

21 Bochum U
Ruhr University Research School

22 Bonn U
Bonn Graduate School of Economics

23 Bonn U together with Cologne U*
Bonn-Cologne Graduate School of Physics and Astronomy

24 Bonn U
Mathematics: Foundations, Models, Applications

25 Bremen U
Global Change in the Marine Realm

26 Bremen U
Bremen International Graduate School of Social Sciences

27 Bremen U
The Ocean in the Earth System

28 Cologne U
Cellular Stress Responses in Aging-Associated Diseases

29 Constance U
Constance Research School "Chemical Biology"

30 Constance U
Cultural Foundations of Social Integration

31 Constance U
Model Constance - Towards a Culture of Creativity

32 Darmstadt TU
Graduate School of Computational Engineering "Beyond Traditional Sciences"

33 Darmstadt TU
Smart Interfaces: Understanding and Designing Fluid Boundaries

34 Dresden TU
International Graduate School for Biomedicine and Bioengineering

35 Dresden TU
From Cells to Tissues to Therapies

36 Erlangen-Nuremberg U
Erlangen Graduate School in Advanced Optical Technologies

37 Erlangen-Nuremberg U
Engineering of Advanced Materials - Hierarchical Structure Formation for Functional Devices

38 Frankfurt/Main U
Macromolecular Complexes

39 Frankfurt/Main U
Formation of Normative Orders

40 Freiburg U
Molecular Cell Research in Biology and Medicine

41 Freiburg U
Centre for Biological Signalling Studies – from Analysis to Synthesis

42 Freiburg U
Windows for Research

43 Giessen U
International Graduate Centre for the Study of Culture

44 Giessen U together with Frankfurt/Main U*
Cardio-Pulmonary System

45 Göttingen U
Göttingen Graduate School for Neurosciences and Molecular Biosciences

46 Göttingen U
Microscopy at the Nanometer Range

47 Göttingen U
Göttingen: Tradition - Innovation - Autonomy

48 Hamburg U
Integrated Climate System Analysis and Prediction

49 Hannover MedH
Hannover Biomedical Research School

50 Hannover MedH
From Regenerative Biology to Reconstructive Therapy

51 Hannover U
Centre for Quantum Engineering and Space-Time Research

52 Heidelberg U
Heidelberg Graduate School of Fundamental Physics

53 Heidelberg U
Heidelberg Graduate School of Mathematical and Computational Methods for the Sciences

54 Heidelberg U
The Hartmut Hoffmann-Berling International Graduate School of Molecular and Cellular Biology

55 Heidelberg U
Cellular Networks

56 Heidelberg U
Asia and Europe in a Global Context: Shifting Asymmetries in Cultural Flows

57 Heidelberg U
Heidelberg: Realising the Potential of a Comprehensive University

58 Jena U
Jena School for Microbial Communication

59 Karlsruhe TH
Karlsruhe School of Optics and Photonics

60 Karlsruhe TH
Centre for Functional Nanostructures

61 Karlsruhe TH
A Concept for the Future of the University of Karlsruhe (TH)

62 Kiel U
Graduate School for Integrated Studies of Human Development in Landscapes

63 Kiel U
The Future Ocean

64 Kiel U together with Lübeck U*
Inflammation at Interfaces

65 Leipzig U
Building with Molecules and Nano-Objects

66 Lübeck U
Graduate School for Computing in Medicine and Life Sciences

67 Mainz U
Materials Science in Mainz

68 Mannheim U
Empirical and Quantitative Methods in the Economic and Social Sciences

69 Munich LMU
Graduate School of Systemic Neurosciences

70 Munich LMU together with Munich TU*
Nanosystems Initiative Munich

71 Munich LMU
Munich-Centre for Integrated Protein Science

72 Munich LMU together with Munich TU*
Munich-Centre for Advanced Photonics

73 Munich LMU
Working Brains - Networking Minds - Living Knowledge

74 Munich TU
International Graduate School of Science and Engineering

75 Munich TU
Cognition for Technical Systems

76 Munich TU together with Munich LMU*
Origin and Structure of the Universe

77 Munich TU
TUM. The Entrepreneurial University Institutional Strategy to promote Top-Level Research

78 Münster U
Religion and Politics in Pre-Modern and Modern Cultures

79 Saarbrücken U
Saarbrücken Graduate School of Computer Science

80 Saarbrücken U
Multimodal Computing and Interaction

81 Stuttgart U
Graduate School for Advanced Manufacturing Engineering

82 Stuttgart U
Simulation Technology

83 Tübingen U
Centre for Integrative Neuroscience

84 Ulm U
International Graduate School in Molecular Medicine Ulm

85 Würzburg U
Graduate School for Life Sciences

*Co-participant

Abbreviations:
FU = Free University
HU = Humboldt-University
LMU = Ludwig-Maximilians-University
MedH = Medical School
TH / TU = Technical University
U = University

a clear difference between the average funding volume received by Graduate Schools (€3.4 million) and that received by Research Training Groups (€0.7 million). Moreover, the average total funding provided to Institutional Strategies is about €38 million over a three year period.

Since the implementation of the Excellence Initiative, there are now a total of 85 centres of excellence – 39 Graduate Schools, 37 Clusters of Excellence and 9 Institutional Strategies – being funded at 37 HEIs (as host universities). In the course of the two rounds of decisions, a total of 180 funding proposals were reviewed for 83 Graduate Schools, 79 Clusters of Excellence and 18 Institutional Strategies. These proposals were submitted by a total of 43 host universities. The request for submission of proposals was based on the evaluation of more than 600 outline proposals, which had been filed by 79 HEIs (as host universities). Figures 2-3 and 2-4 offer a compact overview of the general funding structure in the Excellence Initiative and of the projects and HEIs funded as part of the initiative.

A closer examination of the HEIs which have been successful in the Excellence Initiative is one of the focal points of chapters 3 and 4. In this context, special attention will be given to the question of how the awards granted within the Excellence Initiative are integrated with the funding portfolio of specific HEIs.

Regional Distribution of DFG Awards

In addition to the information summarised above, Figure 2-5 contains a cartographic representation illustrating the regional distribution of DFG funding, when HEIs and non-university research institutions are considered together. The graph reveals the regions that are especially active in terms of DFG funding. The differentiation by funding programme shows how successful specific research locations were, for example, in the Excellence Initiative. The important role of Individual Grants almost nationwide is also conspicuous.

DFG Awards by Applicant's Gender

In this edition of the Funding Ranking, the participation of men and women in DFG funding activities will be examined for the first time with the help of statistical data.

The DFG is committed to securing tangible improvements to equal opportunities for men and women in the German research system[14]. In December 2007, the DFG's Executive Committee appointed a commission of experts to develop a set of *Equal Opportunity Standards for Research*. At the Annual General Assembly 2008, the majority of DFG member institutions declared their support for the idea and resolved upon the implementation of the Equal Opportunity Standards for Research as a self-imposed duty. The members are responsible for the implementation procedures, while the DFG supports these activities with advice and coordination, for example, in the form of an information system called *"Tool Box"*. This system contains a list of measures undertaken by DFG member institutions toward improving equal opportunities in science[15]. At www.dfg.de/instrumentenkasten users can find a German-language searchable database of quality-assured equal opportunity measures implemented in research. The Tool Box is a collection of practical examples, systematically chosen on the basis of various quality aspects, which reveal the range of equal opportunity measures used in Germany, their mode of action and their framework conditions.

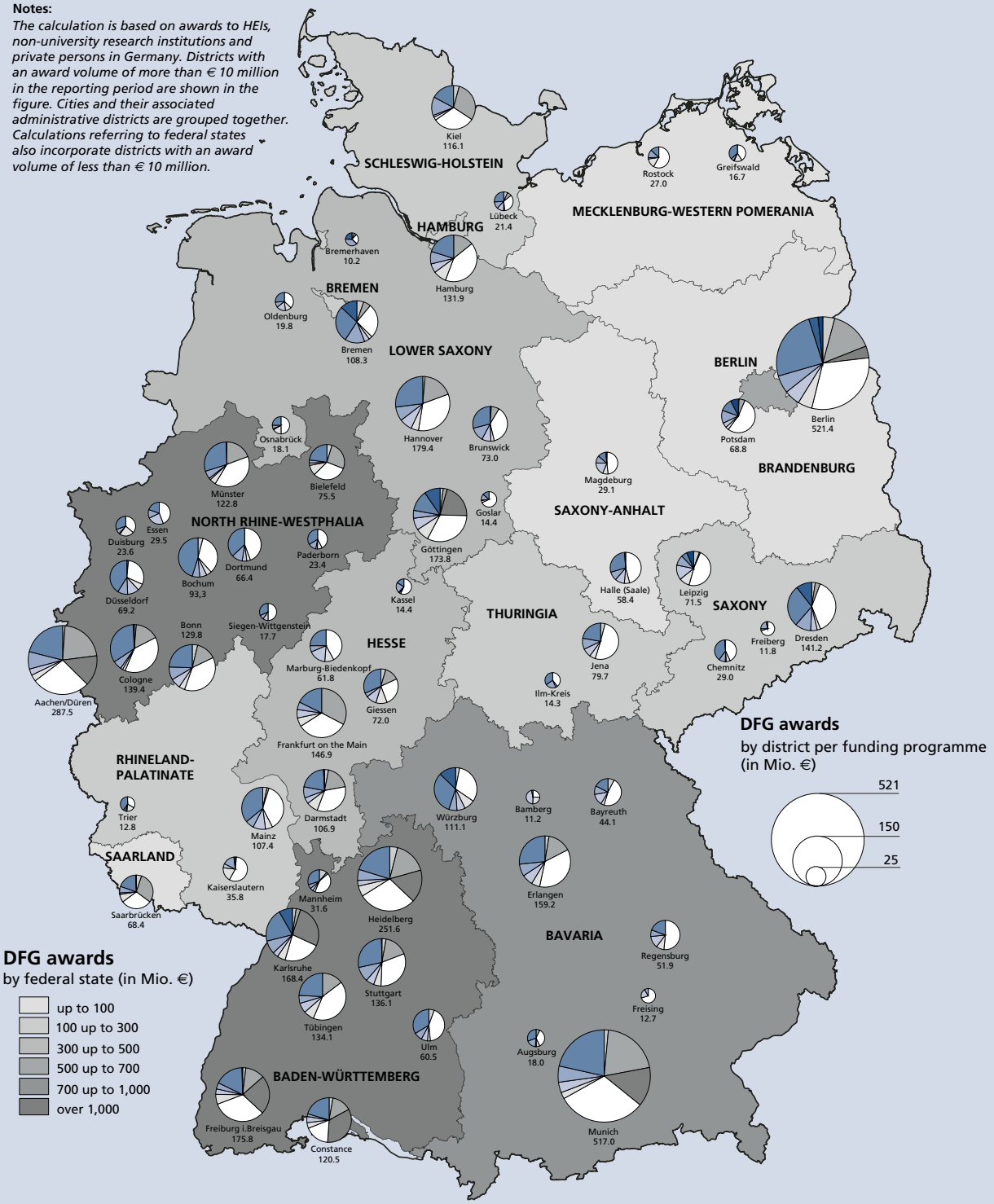
Furthermore, the DFG published a study in 2008, which illuminates the DFG funding process, from the application to the Review Board decision, in various funding programmes. With the aid of data on the processing of proposals, the study looks at the proportion of women scientists involved in the DFG's proposal system, their chances in comparison to male scientists of receiving funding, and the extent to which the DFG's promotion of young researchers is being used by young women scientists. The results of surveys also reveal varying notions of the research system and of the opportunity for a career in science and the humanities. Another focus of the study is on the participa-

[14] More detailed information on equal opportunities as one of the DFG's areas of activities can be found in German on the Internet page www.dfg.de/dfg_im_profil/aufgaben/chancengleichheit/informationen.html.

[15] Information on the Equal Opportunity Standards for Research and on the various equal opportunities milestones of the DFG can be found on the DFG's Internet site (www.dfg.de/dfg_im_profil/aufgaben/chancengleichheit/standards.html).

Figure 2-5:
Regional distribution of DFG awards 2005 to 2007 by funding programme

Notes:
The calculation is based on awards to HEIs, non-university research institutions and private persons in Germany. Districts with an award volume of more than € 10 million in the reporting period are shown in the figure. Cities and their associated administrative districts are grouped together. Calculations referring to federal states also incorporate districts with an award volume of less than € 10 million.



tion of male and female scientists in the decision-making process for funding proposals and the representation of women in the DFG's decision-making bodies (cf. Hinz/Findeisen/Auspurg 2007)[16].

Along the same lines, and with the goal of providing greater transparency and a better information basis, especially for the DFG's member institutions, the 2009 Funding Ranking gives figures for the participation of women in DFG-funded research[17].

At the HEIs included in the reporting sample – institutions with total DFG funding of greater than €0.5 million between 2005 and 2007 and with five or more researchers involved in an application – there were more than 18,000 persons involved as applicants, project leaders, and in other roles[18]. On average, 16 percent of the DFG grants for these universities were awarded to women.

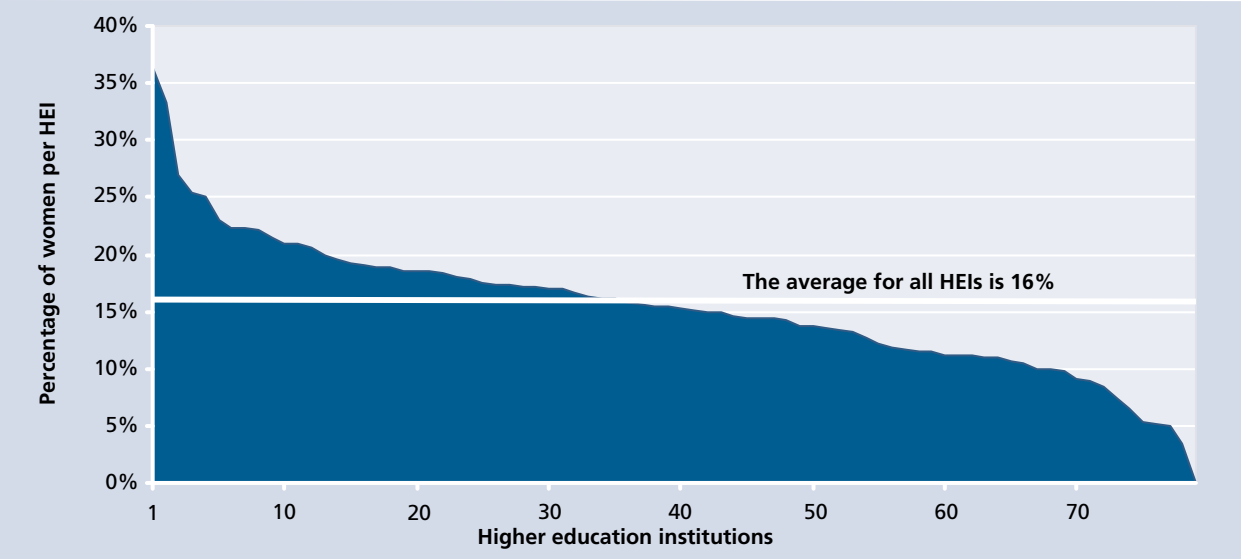
As shown in Figure 2-6, the figures range from 0 to 36 percent at the 80 HEIs included in the evaluation. Even if one ignores the two extreme values, which are caused by the small number of cases, the result of the evaluation still shows a very broad range in the proportion of women. As might be expected, the main factor influencing this result is the thematic profile of the different HEIs. As a rule, there are fewer women studying and working at technical universities than at HEIs which have research profiles with a distinct slant toward the humanities and social sciences. Table A-13 in the appendix shows the share of DFG awards allocated to women by institution and differentiated by the four scientific disciplines distinguished by the DFG. Averaged across this list of 80 HEIs, women make up 23 percent of the applicants for DFG-funded projects in the humanities and social sciences, and in the life sciences they have a 19 percent share. By way of comparison, they have shares of 9 and 8 percent respectively in the natural and engineering sciences.

[16] Further analyses related to this topic can be found in the DFG's online statistical monitoring service, which was established in 2007 and is updated on a regular basis (see www.dfg.de/dfg_im_profil/aufgaben/chancengleichheit/statistik_1.html).

[17] Also see the *University Ranking on the basis of gender equality indicators*, which is regularly updated and published by the GESIS Institute's "Centre of Excellence – Women and Science (CEWS)" (cf. www.cews.org).

[18] For further details regarding the participations taken into account please refer to the notes in Figure 2-6.

Figure 2-6:
Share of DFG awards allocated to women 2005 to 2007 by HEI



Notes:
This analysis is based on data concerning the gender of researchers who participated in proposals for the Individual Grants Programme. In the case of Coordinated Programmes, the gender of spokespersons and their deputies and of project leaders and associated researchers is taken into account. In the case of proposals for DFG Research Centres and the first two funding lines of the Excellence Initiative, the gender of the designated Principal Investigators forms the basis. The graph is based on data for 80 HEIs which received an award volume of more than € 0.5 million from 2005 to 2007, and had five or more proposal participants in this period.

Data basis and source:
Deutsche Forschungsgemeinschaft (DFG): DFG awards 2005 to 2007.
Calculations by the DFG.

Table 2-4:
DFG system of Review Boards, subject areas and scientific disciplines

Review Board		Subject area	Scientific discipline
101	Ancient cultures	Humanities	Humanities and social sciences
102	History		
103	Fine arts, music, theatre and media studies		
104	Linguistics		
105	Literary studies		
106	Non-European languages and cultures, social and cultural anthropology, Jewish studies and religious studies		
107	Theology		
108	Philosophy		
109	Education sciences	Social and behavioural sciences	
110	Psychology		
111	Social sciences		
112	Economics		
113	Jurisprudence		
201	Foundations of biology and medicine	Biology	Life sciences
202	Plant science		
203	Zoology		
204	Microbiology, virology and immunology	Medicine	
205	Medicine		
206	Neurosciences		
207	Veterinary medicine, horticulture, agriculture and forestry	Veterinary medicine, agriculture and forestry	
301	Molecular chemistry	Chemistry	Natural sciences
302	Chemical solid state research		
303	Physical and theoretical chemistry		
304	Analytical chemistry and method development		
305	Biological chemistry and food chemistry		
306	Polymer research		
307	Condensed matter physics	Physics	
308	Optics, quantum optics and physics of atoms, molecules and plasmas		
309	Particles, nuclei and fields		
310	Statistical physics and nonlinear dynamics		
311	Astrophysics and astronomy		
312	Mathematics	Mathematics	
313	Atmospheric science and oceanography	Geosciences	
314	Geology and palaeontology		
315	Geophysics and geodesy		
316	Geochemistry, mineralogy and crystallography		
317	Geography		
318	Water research		
401	Production technology	Mechanical and industrial engineering	Engineering sciences
402	Mechanics and constructive mechanical engineering		
403	Process engineering and technical chemistry	Thermal and process engineering	
404	Heat energy technology, thermal machines and drives		
405	Materials engineering	Material science and engineering	
406	Materials science and raw materials		
407	System engineering	Computer science, system and electrical engineering	
408	Electrical engineering		
409	Computer science		
410	Construction engineering and architecture	Construction engineering and architecture	

DFG Awards by Scientific Discipline and Subject Area

In the 2009 DFG Funding Ranking, the analyses which take a subject-specific point of view use the DFG's four-tier subject classification system as a basis. It also provides a basis for the classification of data from external sources. The subject classification system, along with its division into subject areas, reflects the Review Board system and thus also the operative structures for the processing of proposals in the DFG. For instance, if a funding proposal is submitted to the DFG as part of the Individual Grants Programme, the Head Office decides, based on the topic of the proposal, which subject it should be assigned to[19]. In terms of the Review Board system, these subject area assignments have a direct effect on the *processing* (person at the DFG Head Office responsible for the relevant subject), the *review* (expert reviewers) and finally the *evaluation* (responsible Review Board) of the proposals[20].

The subject classification system includes over 200 subjects, which are assigned to the 48 Review Boards, 14 subject areas and four scientific disciplines. Table 2-4 shows the top three levels of the classification system, which are used in this report. Table A-5 in the appendix documents the further subdivision by subject.

[19] By contrast, in the case of Collaborative Research Centres or Research Units, for example, subject classification is used for statistical and publicity purposes only.

[20] A detailed description of the procedures of the Review Boards and of the reform of the DFG's review system may be found at http://www.dfg.de/en/dfg_profile/structure/statutory_bodies/review_boards/index.html. Moreover, Koch (2006) offers a deeper insight.

Table 2-5:
DFG awards 2005 to 2007 by scientific discipline per subject area

Scientific discipline / subject area	DFG awards in total not incl. 3rd funding line of the ExIn		of which			
			2005 to 2007 not incl. ExIn		1st & 2nd funding lines of the ExIn for 3 years	
	Mio. €	%	Mio. €	%	Mio. €	%
Humanities and social sciences	**856.7**	**15.7**	**682.0**	**14.8**	**174.7**	**20.7**
Humanities	534.1	9.8	416.5	9.0	117.5	14.0
Social and behavioural sciences	322.7	5.9	265.5	5.8	57.2	6.8
Life sciences	**1,989.4**	**36.5**	**1,741.0**	**37.7**	**248.4**	**29.5**
Biology	719.7	13.2	638.7	13.8	81.0	9.6
Medicine	1,153.9	21.1	988.7	21.4	165.2	19.6
Veterinary medicine, agriculture a. forestry	115.8	2.1	113.6	2.5	2.2	0.3
Natural sciences	**1,415.3**	**25.9**	**1,181.2**	**25.6**	**234.1**	**27.8**
Chemistry	383.9	7.0	324.5	7.0	59.4	7.1
Physics	547.8	10.0	442.9	9.6	104.9	12.5
Mathematics	156.5	2.9	122.7	2.7	33.8	4.0
Geosciences	327.0	6.0	291.0	6.3	36.0	4.3
Engineering sciences	**1,195.5**	**21.9**	**1,010.6**	**21.9**	**184.8**	**22.0**
Mechanical engineering[1)]	698.4	12.8	605.8	13.1	92.6	11.0
Computer science, system and electrical engineering	420.9	7.7	337.0	7.3	83.9	10.0
Construction engineering and architecture	76.2	1.4	67.8	1.5	8.3	1.0
Total	**5,456.9**	**100.0**	**4,614.7**	**100.0**	**842.1**	**100.0**

Notes:
For methodical reasons, the Excellence Initiative funding decisions made at the end of 2006 and the end of 2007 are included in the calculation in the form of three-year awards rather than five-year awards. Awards in the third funding line (Institutional Strategies), which are always assigned to the entire university, are not included in this analysis. Further remarks on methodology, with particular reference to the handling of the Excellence Initiative, can be found in the appendix.

[1)] At the time of the report, there was as yet no information available for the projects funded in the Excellence Initiative regarding the distribution of DFG awards between the three subject areas distinguished by the DFG, "mechanical and industrial engineering", "thermal and process engineering" and "material science and engineering". For statistical purposes they are grouped together here and considered as a single subject area "mechanical engineering".

Data basis and source:
Deutsche Forschungsgemeinschaft (DFG): DFG awards 2005 to 2007.
Calculations by the DFG.

Table 2-6:
DFG awards 2005 to 2007 by type of funding recipient

Type of funding recipient	DFG awards in total not incl. 3rd funding line of the ExIn		of which			
			2005 to 2007 not incl. ExIn		1st & 2nd funding lines of the ExIn for 3 years	
	Mio. €	%	Mio. €	%	Mio. €	%
Higher education institutions	**4,737.4**	**86.8**	**4,035.6**	**87.5**	**701.8**	**83.3**
Non-university research institutions	**694.8**	**12.7**	**554.4**	**12.0**	**140.3**	**16.7**
Max Planck Society	231.7	4.2	155.5	3.4	76.2	9.0
Fraunhofer Society	22.8	0.4	18.5	0.4	4.3	0.5
Helmholtz Association	123.0	2.3	107.2	2.3	15.8	1.9
Leibniz Association	158.5	2.9	137.8	3.0	20.7	2.5
Federal institutions	44.0	0.8	34.9	0.8	9.1	1.1
Other institutions	114.8	2.1	100.5	2.2	14.3	1.7
Non-institutional recipients[1)]	**24.7**	**0.5**	**24.7**	**0.5**	**0.0**	**0.0**
Private persons from Germany	2.6	0.0	2.6	0.1	0.0	0.0
Private persons from abroad	22.1	0.4	22.1	0.5	0.0	0.0
Total	**5,456.9**	**100.0**	**4,614.7**	**100.0**	**842.1**	**100.0**

Notes:
For methodical reasons, the Excellence Initiative funding decisions made at the end of 2006 and the end of 2007 are included in the calculation in the form of three-year awards rather than five-year awards. Awards in the third funding line (Institutional Strategies), which are always assigned to the entire university, are not included in this analysis. Further remarks on methodology, with particular reference to the handling of the Excellence Initiative, can be found in the appendix.

[1)] Especially fellowships and awards to Emeriti.

Data basis and source:
Deutsche Forschungsgemeinschaft (DFG): DFG awards 2005 to 2007.
Calculations by the DFG.

With reference to the reporting period, Table 2-5 gives the total amounts that were approved per scientific discipline and subject area. In the years 2005 to 2007, the greatest share of the DFG's funding budget went to the life sciences (37 percent), followed by the natural and engineering sciences (26 and 22 percent), and by the humanities and social sciences with a share of 16 percent.

The additional differentiation between grants awarded within and beyond the scope of the Excellence Initiative reveal that distributions were very consistent. The greatest difference was in the humanities: Though they are awarded 9 percent of awards not related to the Excellence Initiative, the 14 percent share of grants received within the scope of Excellence programmes is significantly higher - evidence that criticism of the Excellence Initiative for not being tailored to the needs of the humanities, has little foundation in fact.

DFG Awards by Type of Funding Recipient and Research Institution

Table 2-6 shows the distribution of DFG awards by type of funding recipient. In the reporting period from 2005 to 2007, the DFG approved funding for exactly 159 HEIs (92 universities, 44 universities of applied sciences and 23 colleges of education, theology or art) and over 400 non-university research institutions. The share of the total funding that went to HEIs was 87 percent, while universities managed to secure almost all of these HEI funds.

The institution-specific and subject-specific treatments of DFG funding are continued in further detail in chapters 3 and 4, where they form the main focus of this report.

2.3 The Direct R&D Project Funding by the Federal Government

In 2006, the federal government spent almost €4 billion on goal-oriented, short to medium-term research funding. This corresponds to a share of 42 percent of the federal government's total expenditure on institutional and project-oriented funding measures, which amounted to a total of €9.3 billion[21]. With regard to project funding, HEIs, non-university research institutions and commercial companies can submit applications for fixed-term research projects in the con-

[21] Cf. BMBF (2008).

text of government funding programmes. The *indirect project funding programme* is open to all research and development projects regardless of their respective research and technology field. This funding is determined by the demand of companies and aims to strengthen innovation in small and medium-sized enterprises. The *direct project funding programme* finances research and development projects in fields of research and technology defined by the relevant federal ministries in the context of topic-oriented announcements. In this way, the research activities of potential funding recipients are directed to specific thematic priorities. The goal of this programme is to ensure that German research and development in selected fields achieves a high level of performance by international standards.

The Federal Government's High-Tech Strategy

With a view to achieving this goal, the federal government launched an interdepartmental strategy for research and innovation policy in August 2006, which is referred to as High-Tech Strategy. The High-Tech Strategy aims at securing jobs and increasing economic growth and private investment in education and research. It also intends to strengthen networks between business and research. Within the scope of the High-Tech Strategy, the federal government is making about €14.6 billion available for R&D funding and for general improvement of the framework conditions during the legislative period 2006 to 2009. A large part of the funds – roughly €12 billion – will be going to R&D funding in the areas of health, climate protection, resources conservation and energy, mobility and security, and to the development of key technologies such as biotechnology and nanotechnology. Within these areas, the federal government has identified 17 fields of innovation (also known as high-tech sectors), for which specific innovation strategies have been developed[22]. Along with the strategic fields that have been prioritised by the High-Tech Strategy, the federal government's direct project funding will also be available to areas such as education research and research in the humanities.

[22] Cf. BMBF (2006).

Data Basis of the Funding Ranking

The present analyses of the federal government's research funding activities are based on data from the PROFI database of the Federal Ministry of Education and Research (Bundesministerium für Bildung und Forschung, BMBF), which covers most of the federal government's project funding in the civilian sector[23]. Besides the funding measures of the BMBF, the database also documents the funding programmes of other ministries (in particular the Federal Ministry of Economics and Technology (Bundesministerium für Wirtschaft und Technologie, BMWi) and the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (Bundesministerium für Umwelt, BMU)). Moreover, several important federal funding programmes, which are administered by the German Federation of Industrial Cooperative Research Associations (Arbeitsgemeinschaft industrieller Forschungsvereinigungen, AiF) and not documented in PROFI, are presented in the next chapter and examined separately in the Funding Ranking. As the focus of this report is on R&D funding, the evaluations presented here are based on measures classified by PROFI as R&D projects[24]. The total amount allocated to German funding recipients from 2005 to 2007 and taken into account by this report came to €4.4 billion.

Distribution of Funds by Funding Area and Scientific Discipline

For the purposes of the funding area-specific analyses presented below, the funding fields and funding priorities identified in the federal government's budgetary system have been grouped into various funding areas and assigned to the four scientific disciplines distinguished by the

[23] Cf. excerpts from www.foerderkatalog.de. The online database "Funding Catalogue (FÖKAT)" contains current information on more than 110,000 funding projects, completed and still running, in the area of project funding by the federal government.

[24] Further information on the data basis and the methodical approach, with reference to the R&D funding measures of the federal government documented in PROFI, can be found in Section A.1 in the appendix.

Table 2-7:
Direct R&D project funding by the federal government 2005 to 2007 by scientific discipline per funding area

Scientific discipline / funding area	Individual measures	Funds	
	No.	Mio. €	%
Humanities and social sciences	**275**	**39.9**	**0.9**
Life sciences	**3,102**	**856.1**	**19.4**
Biotechnology	2,021	552.3	12.5
R & D in the health sector	1,081	303.8	6.9
Natural sciences	**1,794**	**459.3**	**10.4**
Large-scale equipment for basic research	677	173.1	3.9
Astronomy and astrophysics	142	82.1	1.9
Geosciences	975	204.0	4.6
Engineering sciences	**11,670**	**2,575.6**	**58.5**
Energy research and technology	1,525	437.2	9.9
Information technology	4,324	980.0	22.2
Aeronautical and space research	798	259.3	5.9
Materials research, physical and chemical technologies	2,096	444.9	10.1
Regional sustainability, structural engineering and mobility	1,850	301.3	6.8
Cleaner environmental technology and sustainable production	1,077	152.9	3.5
Other funding areas	**3,598**	**474.5**	**10.8**
Total	**20,439**	**4,405.4**	**100.0**

Notes:
The table incorporates federal funding measures for German recipients. The reporting logic derived from the federal government's planning system for the funding priorities in the scope of direct R&D project funding can be found in Section A.3 in the appendix.

Data basis and source:
Federal Ministry of Education and Research (BMBF):
Direct R&D project funding by the federal government 2005 to 2007 (project database PROFI).
Calculations by the DFG.

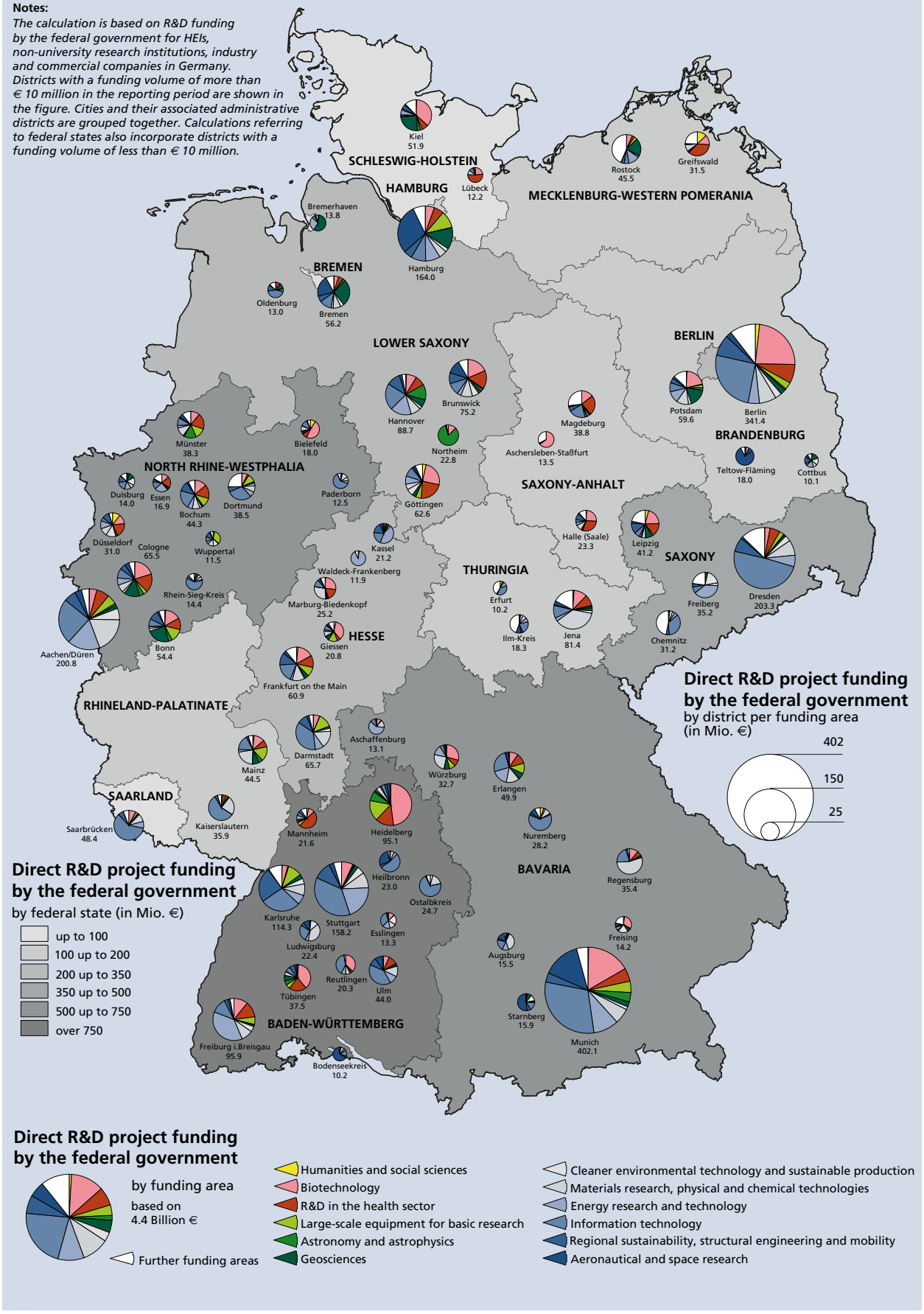
DFG[25]. As shown in Table 2-7, the main focus of the federal government funding measures dealt with here is on life sciences, natural sciences and most especially engineering sciences. The largest thematic funding area is information technology, with a 22.2 percent share of the total funding volume provided by the federal government and taken into account here. With 12.5 percent, the second highest funding volume was made available for biotechnology, which is allocated to the scientific discipline of life sciences. Several funding areas in the engineering sciences, including materials research, physical and chemical technologies, and energy research and technology followed it. Taking into account the number of funded measures, it becomes apparent that the funding areas of aeronautical and space research and of astronomy and astrophysics have the highest average funding volumes per measure.

Overview of Regional Funding Structures

Figure 2-7 illustrates the regions that proved to be particularly active in acquiring funds from the federal government's direct project funding programme and the thematic priorities that were set by these regions in the process. Particularly high funding amounts are evident in the federal states of Baden-Württemberg, Bavaria and North Rhine-Westphalia. While in Bavaria the lion's share of the funds is concentrated in Munich, in other states, and especially in Baden-Württemberg, several regions may be identified with high levels of funding. To mention another example, relatively high funding amounts were also allocated to industrial enterprises, HEIs and non-university research institutions in Saxony. In the region around Dresden alone, these organisations managed to attract a total of €203 million from the federal government's direct project funding

[25] The assignment of the individual funding fields and priorities identified in the federal government's budgetary system to the four scientific disciplines is clarified in Table A-19 in the appendix. Furthermore, with regard to the subject classification system employed by the Funding Ranking 2009, a more detailed explanation of the methodical approach can be found in Section A.3 in the appendix.

Figure 2-7:
Regional distribution of direct R&D project funding by the federal government 2005 to 2007 by funding area



programme. This makes Dresden, along with Munich and Berlin, one of the three regions with the highest funding volume in this programme. Funding recipients in the city and district of Munich received a total of €402 million, while institutions in the greater Berlin area received about €341 million. The funding profile of these regions is heavily influenced by the engineering and life sciences. As in the region of Dresden, a major portion of the funding for engineering sciences was acquired in the area of information technology. In the natural sciences, to give one last example, it were primarily North German regions like Hamburg, Bremen, Kiel, and Rostock which distinguished themselves, with particular emphasis on the geosciences.

In Section 3.3, the regional funding structures of the DFG, the federal government and the EU are brought into comparison with each other and the thematic priorities set by the regions in the context of these funding measures are subjected to a more detailed examination.

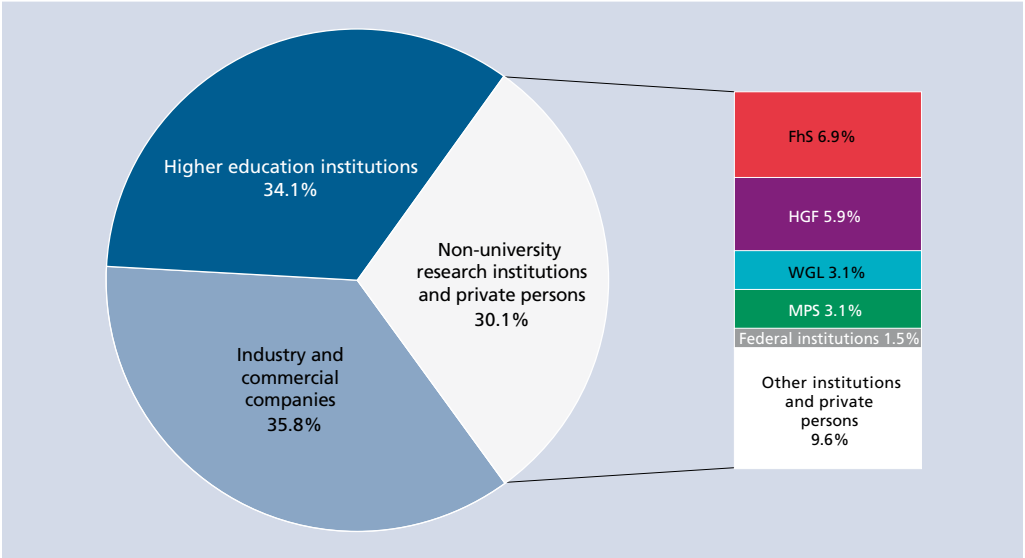
Distribution of Funds by Type of Funding Recipient

As shown in Figure 2-8, roughly one third of the funds provided by the federal government's direct R&D project funding programme were allocated to *industrial and commercial enterprises* (36 percent), to *higher education institutions* (34 percent), and to *non-university research institutions* (30 percent). The four large research organisations, the Fraunhofer Society, the Helmholtz Association, the Max Planck Society and the Leibniz Association together account for approximately 19 percent of the funds.

HEIs Involved to Varying Degrees in Different Funding Areas

As already shown in Figure 2-1 with reference to the reporting year 2006, more than 19 percent of the total funding acquired by HEIs came from the federal government's project funding programmes. At the same time, HEIs are involved to varying degrees in different funding areas of the federal government. For example, HEIs participate heavily in the funding provided for basic research with large-scale equipment and in the funding area of "R&D in the health sector", while they benefit only to a medium degree from funding provided for the areas of biotechnology, geosciences and materials research. Compared to other funding recipients, HEIs participate to

Figure 2-8:
Direct R&D project funding by the federal government 2005 to 2007 by type of funding recipient



Notes:
The graph is based on data for a total of € 4.4 billion provided by the federal government's direct R&D project funding programmes (not including funding for recipients outside Germany).

Data basis and source:
Federal Ministry of Education and Research (BMBF): Direct R&D project funding by the federal government 2005 to 2007 (project database PROFI).
Calculations by the DFG.

a lesser extent in funding areas belonging to the engineering sciences. While the budget for R&D projects in the field of information technology makes up 20 percent of all federal government funding taken into consideration here, it only accounts for ten percent of the funding acquired by HEIs from the federal government.

The rankings of HEIs and the specific emphases placed on particular funding areas and research fields will be further elaborated in chapters 3 and 4 – also in comparison to the DFG's funding structures – where they will form the central focus of this report. Over and above the thematic funding areas of the federal government presented here, the funds provided by the Federal Ministry of Economics and Technology for *collaborative industrial research (Industrielle Gemeinschaftsforschung, IGF)* and for the *promotion of innovation competence in medium-sized enterprises (Förderung der Innovationskompetenz mittelständischer Unternehmen, PRO INNO)* are also taken into consideration by the Funding Ranking 2009. An examination of funding activities in the context of these programmes, which are run by the BMWi and supervised by the German Federation of Industrial Cooperative Research Associations (AiF), reveals which HEIs are especially active in terms of cooperation with small and medium-sized enterprises (SME).

2.4 The German Federation of Industrial Cooperative Research Associations "Otto von Guericke"

Over 100 industrial research associations, around 50,000 mainly small and medium-sized enterprises, and about 700 research institutions associated with HEIs and non-university research institutions comprise the industry-based innovation network of the AiF. Under this umbrella, the AiF promotes applied research and development for the benefit of small and medium-sized enterprises. The portfolio of funding programmes supervised by the AiF ranges from pre-competitive research which promises to benefit entire sectors to the realisation of research results in industrial practice. The total amount of public funds allocated by the AiF in 2007 was €313.6 million. With almost €286.7 million going to the BMWi-funded programmes IGF, PRO INNO and Network Management East (NEMO), these are the principal AiF funding instruments.

Collaborative Industrial Research

Pre-competitive collaborative industrial research unites the companies of a particular sector or a field of technology in the research associations of the AiF. The funding is primarily intended for scientific technical R&D projects that are not oriented to individual companies, which can be expected to produce new insights, with particular regard to development and use of new technologies, and which could lead to economic benefits for small and medium-sized enterprises. Proposals for R&D projects must include appropriate suggestions for knowledge transfer and information regarding the practical feasibility and commercial significance of the research.

AiF/DFG Joint Projects

AiF/DFG joint projects correspond to the type of funding referred to as a CLUSTER in the new BMWi directive for the funding of collaborative industrial research and development[26]. They consist of several thematically related research projects, which can encompass the entire innovation process – from basic research to implementing the results in new products, procedures and services. In this case, the basic research element is financed by the DFG, the collaborative industrial research programme (IGF) funds the application-oriented element, and the practical implementation is financed by industry itself.

PRO INNO: Promoting the Innovation Competence in Medium-Sized Enterprises

The AiF supervised the "promotion of innovation competence in medium-sized enterprises" programme as the BMWi's project management agency[27]. Unlike

[26] The new directive came into force at the beginning of 2009.

[27] Proposals for the PRO INNO II funding programme could be filed with the AiF between August 2004 and June 2008, so that it tied in with the precursor programme PRO INNO, which ran from June 1999 to October 2003. Following on from PRO INNO, an analogous instrument for promoting research cooperation among SMEs has been integrated since mid-2008 as one of three modules in the BMWi's "Central Innovation Programme" (ZIM). The AiF acted or is acting as the BMWi's project management agency for both the precursor programme and the successor module ZIM-KOOP.

the IGF, this funding initiative is company-specific rather than sector-wide, although numerous scientific institutions will also be eligible for funding as partners of SMEs. The primary objective of PRO INNO was to provide sustainable support – primarily in the context of large research associations – for the competitiveness of SMEs by promoting innovation and technologies of the future, and thus make a contribution to the creation and preservation of jobs.

Data Basis of the Funding Ranking

The analyses in the 2009 Funding Ranking are based on approximately 7,700 projects running or completed during the reporting period from 2005 to 2007 (2,300 IGF and 5,400 PRO INNO II projects) and on a total funding volume of €662 million (€320 million for IGF and €342 million for PRO INNO II projects). In the process, over 1,000 research institutions received funding for their participation in IGF and PRO INNO projects during at least one of the years under review.

Distribution of Funds by Type of Funding Recipient

The analyses in the Funding Ranking focus predominantly on the participation of HEIs in these programmes. The HEIs and their departments, which attracted almost 25 percent of the funding allocations, represent a central pillar of the German Federation of Industrial Cooperative Research Associations (see Table 2-12). As regards collaborative industrial research, for instance, more than €126 million in public funds was allocated to 82 HEIs for their participation in IGF projects during the reporting period (see Table A-22 in the appendix). As far as PRO INNO II is concerned, around 11 percent (about €38 million) of the funds were allocated to HEIs, while around 80 percent (about €270 million) went to companies.

Section 4.4 gives further consideration to the funding structures of IGF and PRO INNO II, which are compared to DFG funding. Moreover, it identifies the largest recipients of funding among HEIs.

2.5 The EU's Framework Programmes for Research and Technological Development

The Framework Programmes for Research and Technological Development, which are organised by the European Commission, integrate the R&D funding measures of the EU in a a clearly defined time frame. They are of growing significance for the German research landscape. The Framework Programme is one of the world's largest research funding programmes and makes a major contribution to the networking of science and research in Europe. In keeping with the Lisbon Strategy, the main goals of the Framework Programme for Research and Technological Development are to strengthen the competitiveness of the European Union and to support research measures necessitated by Community policies (e.g. health policy or environmental policy).

The growing importance of EU research funding is confirmed by the fact that the funds provided for the Framework Programme by the EU have steadily increased with each new stage of the programme. The budget increase from the fifth to the sixth framework programme was about 17 percent.

The Sixth EU Framework Programme

This report will focus on research funding in the now concluded Sixth Framework Programme (FP6), for which the 2006 Funding Ranking already provided a kind of intermediate report. The FP6 ran from 2002 to 2006. This means that the EU funding data is based on a time period different from the one used for the rest of the funding data in this report. The main emphasis of the programme was on the funding of cross-border cooperation and on the networking and integration of research infrastructures in the member states. Another explicit funding goal was the strengthening of cooperation between HEIs, research institutions and businesses – especially small and medium-sized enterprises (SME). The Sixth Framework Programme was geared toward interdisciplinary research and focused primarily on applied research.

Altogether, the FP6 had a total budget of approximately €17 billion and was divided into three sections: Integrating and Strengthening the European Research Area (ERA), Structuring the

ERA, and Strengthening the Foundations of the ERA. Table 2-8 specifies the funding volumes that were allocated to the individual sections and areas.

Thematic Priorities of FP6

A basic principle of the Sixth Framework Programme was the concentration of funding on a limited number of preferential research areas, which are also referred to as thematic priorities. More than 70 percent of the available financial resources were provided for the funding of cross-border cooperation in the seven priority areas. These thematic priorities were mainly in research areas of the engineering sciences and life sciences. There were significant disparities in the funding volumes given to the individual priorities. While almost €4 billion was allocated to the research priority "information society technologies" and more than €2 billion went to "life sciences, genomics and biotechnology for health" and "sustainable development, global change and ecosystems", the funding provided for the thematic priority "citizens and governance in a knowledge-based society" amounted to almost €250 million. For the purposes of the DFG Funding Ranking 2009, the thematic priority "sustainable development, global change and ecosystems" is further divided into a natural science funding area "global change and ecosys-

Table 2-8:
Structure and budget of the Sixth EU Framework Programme

Measures	Contracts		Participations		Funds	
	No.	%	No.	%	Mio. €	%
Block 1: Integrating and strengthening the European Research Area						
Thematic priorities						
1. Health	599	6.0	6,827	9.2	2,339.2	14.0
2. Infotech	1,090	10.8	14,311	19.2	3,791.2	22.7
3. NanoMatPro	445	4.4	5,875	7.9	1,537.1	9.2
4. Aeronautics and space	241	2.4	3,496	4.7	1,068.6	6.4
5. Food quality and safety	185	1.8	3,209	4.3	751.6	4.5
6. Development	664	6.6	10,469	14.1	2,294.4	13.8
7. Citizens	146	1.5	1,949	2.6	244.2	1.5
Cross-cutting research activities						
NEST	522	5.2	4,606	6.2	601.7	3.6
Horizontal research activities involving SMEs	490	4.9	5,440	7.3	483.5	2.9
International cooperation activities	342	3.4	2,513	3.4	351.5	2.1
Block 2: Structuring the European Research Area						
1. Research and innovation	237	2.4	1,841	2.5	225.4	1.4
2. Human resources and mobility	4,583	45.6	8,440	11.3	1,686.5	10.1
3. Research infrastructures	154	1.5	1,841	2.5	725.2	4.4
4. Science and society	161	1.6	1,025	1.4	77.8	0.5
Block 3: Strengthening the foundations of the European Research Area						
1. Coordination of research activities	102	1.0	1,204	1.6	288.0	1.7
2. Development of R&I policies	19	0.2	169	0.2	13.8	0.1
Euratom	78	0.8	1,185	1.6	185.7	1.1
Total	**10,058**	**100.0**	**74,400**	**100.0**	**16,665.3**	**100.0**

Notes:
Citizens: Citizens and governance in a knowledge-based society
Development: Sustainable development, global change and ecosystems
Health: Life sciences, genomics and biotechnology for health
Infotech: Information society technologies
NanoMatPro: Nanotechnologies and nanosciences, knowledge-based multifunctional materials and new production processes and devices
NEST: Research for policy support, new and emerging science and technology

Data basis and source:
EU Office of the BMBF: Participations in the Sixth EU Framework Programme from 2002 (project data as of 02.06.2008).
Calculations by the DFG.

tems" and an engineering sciences funding area "sustainable energy systems and sustainable land and sea transport".

Germany is the Largest Funding Recipient in FP6

For this publication, the EU funding activities were evaluated in cooperation with the EU Office of the BMBF (project management agency DLR) on the basis of the project database for the Sixth Framework Programme. The project database documents a total of 10,058 contracts with 74,400 participants. There are 10,430 participants with a funding volume of €3,024 million recorded for German institutions. That means that 18 percent of the total funding volume of the Sixth Framework Programme was allocated to Germany, which is thereby the largest funding recipient, followed by the United Kingdom (€2,370 million), France (€2,172 million), Italy (€1,458 million) and the Netherlands (€1,107 million).

Figure 2-9 depicts the distribution of funding to the various groups of funding recipients in the EU countries. In all of the countries shown here, the share of funds allocated to commercial companies is less than one third. A comparatively high share of approximately 30 percent went to industry and commercial companies in Germany. As regards the relative shares allocated to HEIs and non-university research institutions, there are significant differences between the European states. While in the United Kingdom, Ireland and Sweden, more than half of the funds went to the HEI sector, in France and Spain, for example, the largest shares went to non-university research institutions. In Germany, the three groups of recipients (industry and commercial companies, HEIs, and non-university research institutions) were allocated roughly equal funding amounts. Among the non-university research institutions, the member institutions of the Helmholtz Association (€317 million) and the Fraunhofer Society (€216 million) were particularly successful at attracting funds from the Sixth Framework Programme.

Figure 2-9:
R&D funding in the Sixth EU Framework Programme by country per type of funding recipient

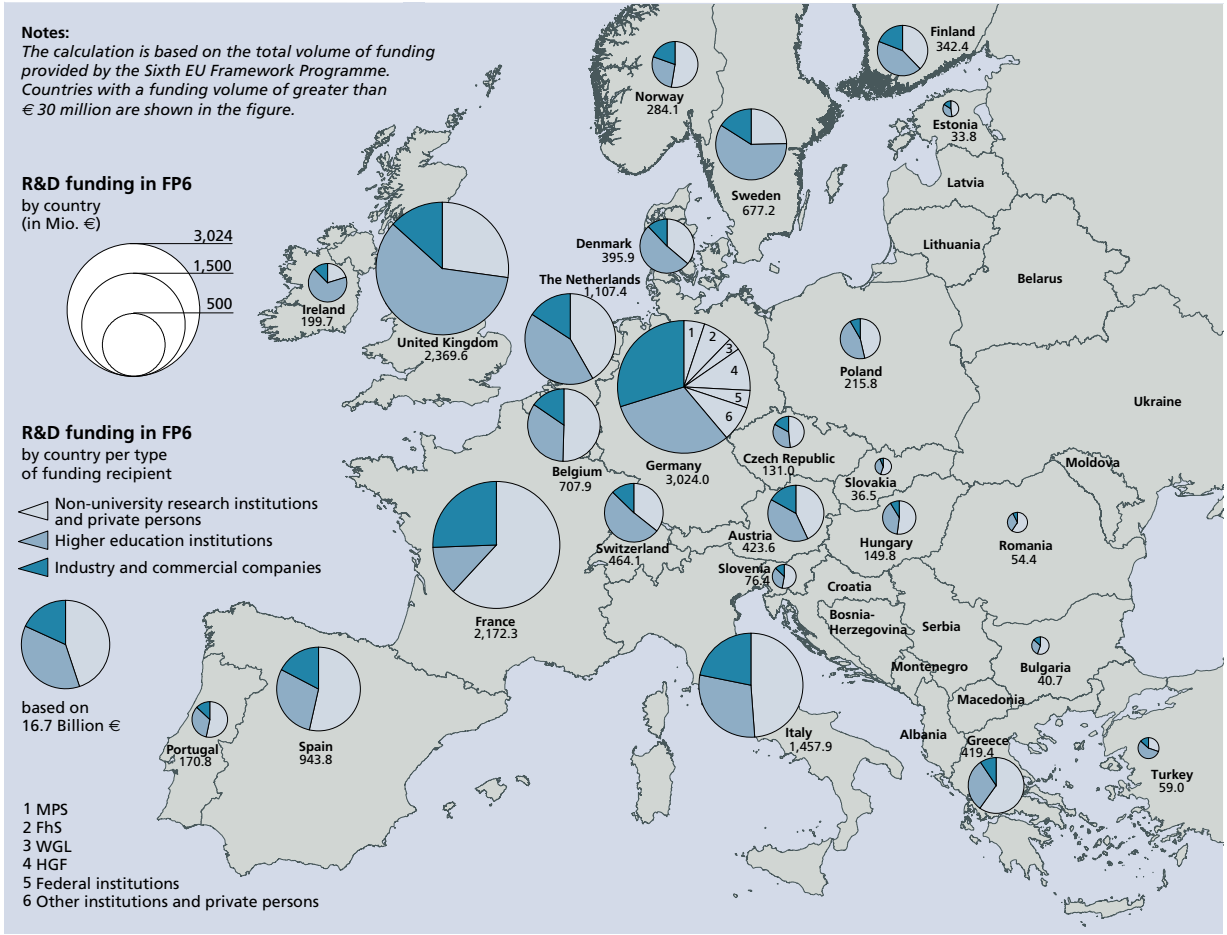
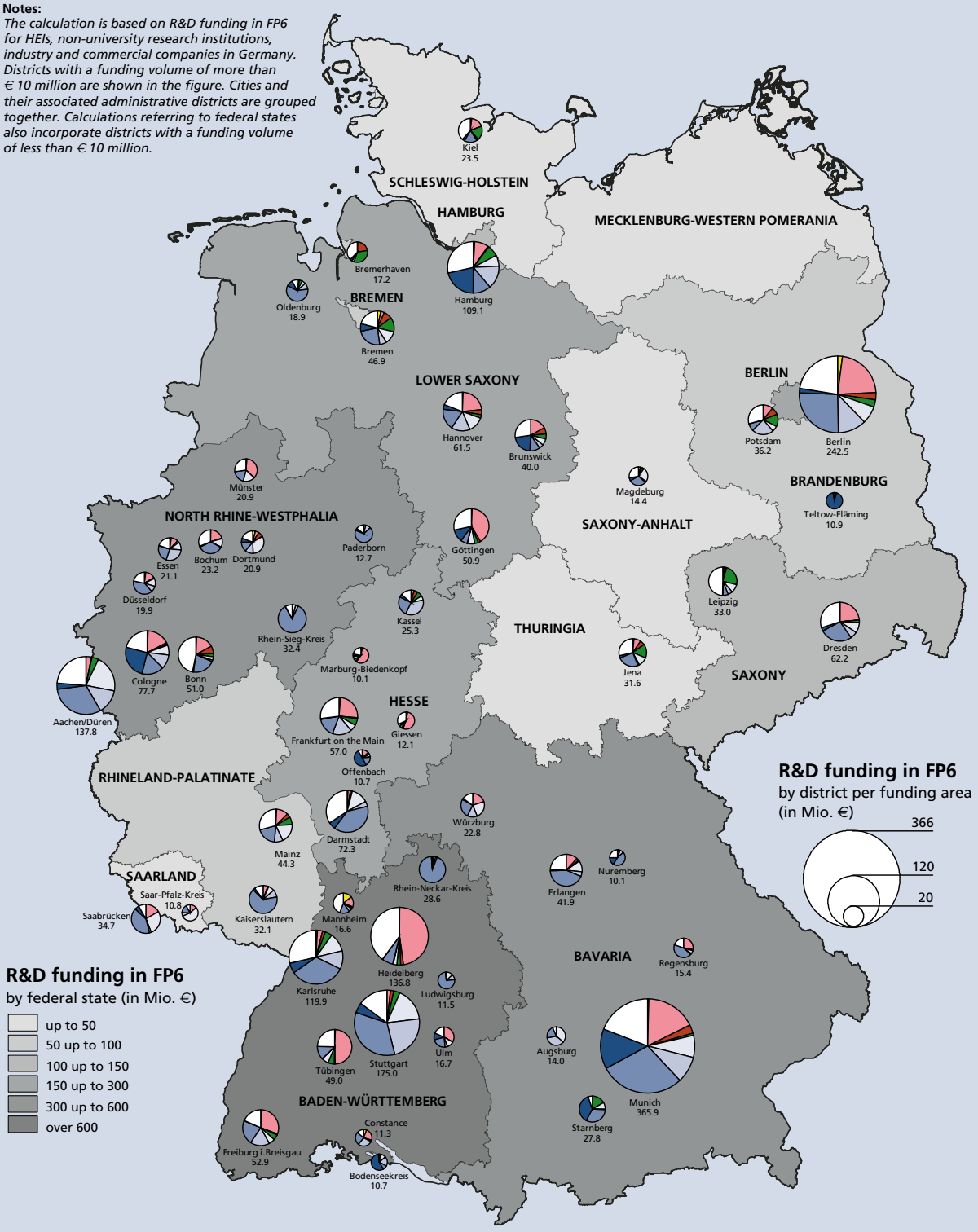


Figure 2-10:
Regional distribution of R&D funding in the Sixth EU Framework Programme by funding area

Notes:
The calculation is based on R&D funding in FP6 for HEIs, non-university research institutions, industry and commercial companies in Germany. Districts with a funding volume of more than € 10 million are shown in the figure. Cities and their associated administrative districts are grouped together. Calculations referring to federal states also incorporate districts with a funding volume of less than € 10 million.



Regional Distribution of Funds from FP6 to German Funding Recipients

Figure 2-10 illustrates the regions that proved to be especially active in acquiring funds from the Sixth Framework Programme. Moreover, it presents the thematic priorities that were set by these regions in the process. Within Germany, institutions from Baden-Württemberg were particularly successful at acquiring EU funds. Institutions in the federal states of Bavaria, North Rhine-Westphalia, Berlin, Lower Saxony and Hesse received comparatively high amounts of funding from the Sixth Framework Programme[28].

In Section 3.3, the regional funding structures of the DFG, the federal government and the EU are brought into comparison with each other and the thematic priorities set by the regions in the context of these funding measures are subjected to a more detailed examination. Chapters 3 and 4 contain the ranking analyses which list the most successful HEIs in FP6. Most importantly, the specific emphases that these institutions place on particular funding areas will be presented in detail.

The Seventh EU Framework Programme

The Seventh EU Framework Programme was launched in 2007. It was accompanied by a significant budget increase as against FP6. The total budget available to FP7 amounts to €53.2 billion for the period from 2007 to 2013. At the same time, the seventh programme has a different structure from the sixth. It is divided into the following four programme categories: Cooperation, Ideas, People and Capacities. The centre piece of the Seventh Framework Programme is the Cooperation programme, which promotes cross-border collaborative research projects in ten thematic priorities. In comparison to the thematic priorities of the Sixth Framework Programme, not only have new subject areas such as security been adopted, some of the familiar programmes from FP6 have also been restructured. With reference to the new programme structure, the establishment of the "Ideas" component, which will be organised by the newly founded European Research Council (ERC), is of particular interest.

2.6 The European Research Council

By establishing the European Research Council in 2007, the EU has for the first time undertaken a systematic and substantial commitment to the funding of basic research. The ERC is part of the Seventh EU Framework Programme (2007–2013) and will be financed through the specific FP7 programme "Ideas", with a budget of approximately €7.5 billion[29]. The ERC budget is not distributed evenly over the seven year running period, but will rise considerably in the coming years. As a result, there will be €1.7 billion available for new proposals in the year 2013.

The Autonomy of Science

The ERC's two funding lines (Starting Grant and Advanced Grant) are open to researchers in all disciplines and of every nationality. The only decisive factor for the review and approval of project proposals is the scientific excellence of both the applicant and of the research project. Programme development (including selection of the reviewers on the panels) is the responsibility of the ERC Scientific Council. The members of this council (22 renowned researchers) act independently of the European Commission and the EU member states. 25 panels composed of international experts carry out the review and approval of proposals.

ERC Funding Programmes: Top-Level Individual Funding

Researchers of all nationalities are entitled to apply in both programme lines. The maximum five-year funding can be used to establish or expand research groups in European locations (EU member states and states associated with the Framework Programmes such as Switzerland and Israel). The ERC Starting Grant programme is aimed at young researchers and provides funding of up to €2 million.

[28] A comparison of the participation of the federal states in FP6 is also a focal point in a study by the EU Office Hannover/Hildesheim (2008). Based on data from a nationwide survey of German HEIs regarding their participation in FP6, this study also identified HEIs in the federal states mentioned here as particularly successful at attracting funding from the FP6. In a comparison of the funding amounts acquired, qualified by the number of professors working in each federal state, the state of Saarland, together with Baden-Württemberg and Berlin, also attracted a disproportionate amount of EU funds.

[29] Cf. BMBF (2007).

The target group of the ERC Advanced Grants includes established researchers, who are eligible for up to €2.5 million (and in exceptional cases €3.5 million) in funding.

Results of the Calls for Proposals in 2007 and 2008

The basis for the documentation of ERC grants in the DFG Funding Ranking 2009 is provided by the results of the first calls for proposals in both programme lines. A total of 299 Starting Grants (announcement 2007) and 275 Advanced Grants (announcement 2008) were approved in this first round. Due to the comparatively low number of cases, the number of ERC grants will not be used for a ranking of universities. In view of the increase in funding amounts planned for the future, however, such a ranking will make sense at a later stage.

The presentation of the results of the first calls for proposals in the two funding lines is split into two parts:

> An examination of the nationality of the funding recipients allows inferences to be made regarding the potential of the relevant national research systems.

> An examination of the destination countries of the funding recipients allows inferences to be made regarding the attractiveness of the relevant host research institutions in a European comparison.

Germany is the Number One Country of Origin of Funding Recipients

In regard to the nationality of the funded scientists and academics, Germany is at the top of the list with 72 funding recipients, followed by the United Kingdom (68 grants) and France (64 grants) (cf. Table 2-9). In this respect, certain small countries, such as Israel and the Netherlands, which are nevertheless strong research locations, also deserve special mention for their above-average positions. In an analysis differentiated by funding line, it is shown that, numerically speaking, researchers from the United Kingdom, France and Germany are having the greatest success in the Advanced Grant programme. On the other hand Germany, Italy and France lead the ranking of countries of origin of funding recipients in the Starting Grant programme.

The UK is the Number One Destination Country for Funding Recipients

As regards the main destination countries (country of the institution where the ERC project is conducted) chosen by the funding recipients, research locations in the United Kingdom are at the top of the list with a total of 116 grants (20.2 percent) (cf. Table 2-9). France (74 grants), Germany (58 grants), Italy and the Netherlands (45 grants each), and Switzerland (42 grants) follow at a considerable distance. Although locations in the UK secured an almost equal share of ERC grants in both funding lines, the Starting Grants were numerically stronger in France, Germany, Italy and the Netherlands. Switzerland, on the other hand, received twice as many Advanced Grants as Starting Grants[30].

Distribution of Funding Recipients by Scientific Discipline

Figures 2-11 and 2-12 show the geographic distribution of ERC funding recipients in both funding lines, differentiated by scientific discipline. For example, the United Kingdom, with 15 grants, takes the first position in the ERC Starting Grant programme in the field of life sciences, followed closely by Spain and France with 14 grants each. In the same category, Germany comes in fifth position with eight grants, just behind Switzerland with ten grants. In the ERC Advanced Grant programme, the UK was also notably successful in the engineering sciences and the humanities and social sciences with a respective share of 33 percent

[30] A look at the most successful institutions shows that, out of the total 299 approved ERC Starting Grants in the first call for proposals in 2007, 17 grants went to the institutes of the Centre National de la Recherche Scientifique, which thus takes the top position. The institutes of the Max Planck Society follow at some distance with nine grants. Also well represented were the University of Cambridge (eight grants), the Israel Institute of Technology (seven grants), the Hebrew University and the institutes of the Consiglio Nazionale delle Ricerche with six grants each. The most successful German higher education institution is the University of Heidelberg with four grants. In the ERC Advanced Grant programme, a total of 275 projects were approved in the first call for proposals in 2008. The list of the most successful locations for ERC projects in this category is led by ETH Lausanne, which secured a total of eleven grants. Other top ranking locations include the CNRS and its institutes with ten grants as well as the Weizman Institute of Science and the University of Oxford with eight grants each. Two German institutions follow at a considerable distance: the institutes of the Max Planck Society and the University of Heidelberg with three grants each.

and 29 percent of all Advanced Grants awarded in those scientific disciplines. Germany is trailing behind with a share of 9 percent in both disciplines. In the natural sciences, on the one hand, there is evidence of a different emphasis and, on the other hand, the distribution is less concentrated. In the Advanced Grant programme, France was the leading nation in natural sciences, followed by Switzerland and the United Kingdom. Germany was in the centre of the field, just behind Israel and the Netherlands, along with Sweden and Austria.

Low Mobility of Funding Recipients

ERC projects can be carried out at any research institute in Europe – the mobility of the applicants is not relevant. In this respect, there is nothing surprising about the relatively low level of migratory movement observable in the two first calls for proposals. At the time of the proposal, the funded scientists were mostly already working at the institution at which the ERC project was to be carried out. This particularly applies to the ERC Advanced Grants, which are targeted at established researchers. In the case of German researchers, 60 percent of the funding recipients decided on an ERC-funded research stay in their own country. The remaining German funding recipients are predominantly working at locations in Switzerland, the United Kingdom and France.

Funding Recipients in Germany are Mainly Working at HEIs

The majority (almost 70 percent) of the 58 successful applicants who conduct their ERC funded projects in Germany are affiliated with higher education institutions. The remaining ERC grants went predominantly to researchers working at the institutes of the Max Planck Society.

Table 2-9:
The most common countries of origin and destination of ERC-funded researchers

No. of recipients according to their countries of origin								No. of recipients according to their destination countries						
Country of origin	Total		of which					Country of destination	Total		of which			
			Starting Grants		Advanced Grants[1)]		Destination Germany				Starting Grants		Advanced Grants	
	No.	cum. %	No.	cum. %	No.	cum. %	No.		No.	cum. %	No.	cum. %	No.	cum. %
Germany	72	12.5	40	13.4	32	11.6	43	**Germany as country of origin**						
United Kingdom	68	24.4	29	23.1	39	25.8	1	Germany	43	59.7	23	57.5	20	62.5
France	64	35.5	32	33.8	32	37.5	2	Switzerland	8	70.8	4	67.5	4	75.0
Italy	58	45.6	34	45.2	24	46.2		United Kingdom	6	79.2	3	75.0	3	84.4
The Netherlands	42	53.0	22	52.5	20	53.5		France	5	86.1	3	82.5	2	90.6
Israel	37	59.4	23	60.2	14	58.5		**Report subtotal**	**62**	**86.1**	**33**	**82.5**	**29**	**90.6**
Spain	29	64.5	21	67.2	8	61.5								
Sweden	25	68.8	12	71.2	13	66.2		**Others**	**10**	**13.9**	**7**	**17.5**	**3**	**9.4**
Belgium	22	72.6	15	76.3	7	68.7								
Finland	14	75.1	8	78.9	6	70.9		**Total**	**72**	**100.0**	**40**	**100.0**	**32**	**100.0**
USA	14	77.5	5	80.6	9	74.2	1							
Switzerland	13	79.8	6	82.6	7	76.7	1	**No. of countries**	**12**		**10**		**7**	
Austria	11	81.7	5	84.3	6	78.9	1	**All funding recipients**						
Greece	11	83.6	6	86.3	5	80.7	1	United Kingdom	116	20.2	58	19.4	58	21.1
Hungary	10	85.4	8	89.0	2	81.5	1	France	74	33.1	39	32.4	35	33.8
Denmark	6	86.4	2	89.6	4	82.9		Germany	58	43.2	32	43.1	26	43.3
Poland	5	87.3	3	90.6	2	83.6	1	Italy	45	51.0	25	51.5	20	50.5
Portugal	5	88.2	3	91.6	2	84.4		The Netherlands	45	58.9	26	60.2	19	57.5
Report subtotal	**506**	**88.2**	**274**	**91.6**	**232**	**84.4**	**52**	Switzerland	42	66.2	14	64.9	28	67.6
								Report subtotal	**380**	**66.2**	**194**	**64.9**	**186**	**67.6**
Others	**68**	**11.8**	**25**	**8.4**	**43**	**15.6**	**6**							
								Others	**194**	**33.8**	**105**	**35.1**	**89**	**32.4**
Total	**574**	**100.0**	**299**	**100.0**	**275**	**100.0**	**58**							
								Total	**574**	**100.0**	**299**	**100.0**	**275**	**100.0**
No. of countries	**34**		**31**		**26**		**14**	**No. of countries**	**24**		**21**		**23**	

[1)] At the time of the report the recipients' countries of origin were not known for 29 Advanced Grants. They were amalgamated in the category "Others" and are not taken into account by the figures for countries of origin and destination.

Data basis and source:
European Research Council (ERC): Researchers funded in the two first calls for proposals.
(Project database CORDIS; as of 15.04.2009).
Calculations by the DFG.

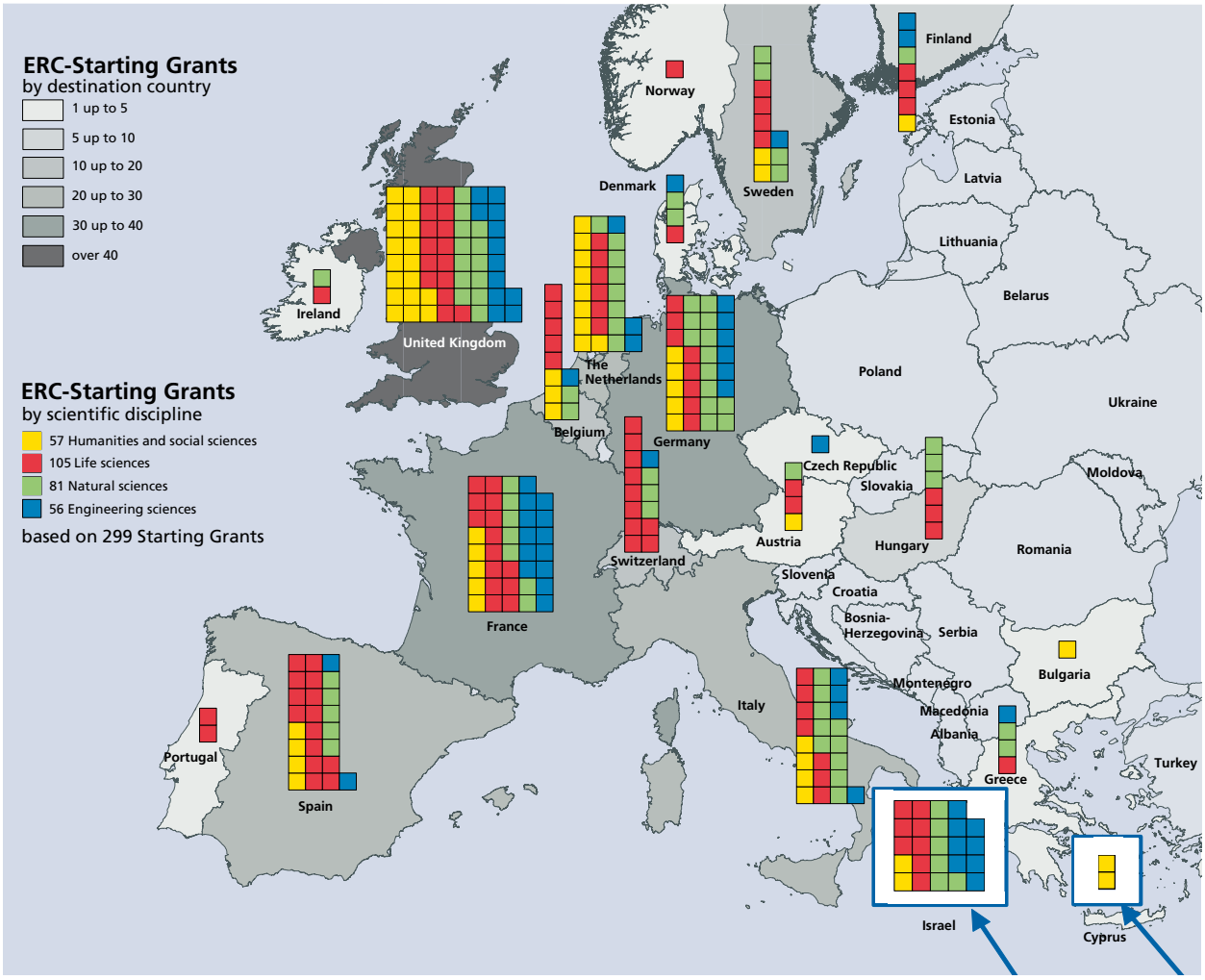
The other non-university research institutions are represented only to a very minor extent. However, a separate analysis of the two funding lines reveals a more differentiated distribution between HEIs and the Max Planck Society (MPS). Whereas in the ERC Starting Grant programme, almost 30 percent of the funding recipients are working at MPS institutes, in the Advanced Grant programme the share is only 11 percent.

ERC Grants Help to Raise the International Profile of Research Locations

The funding programmes of the ERC have intensified competition in the science system. Researchers around the world vie for the prestigious and financially attractive ERC grants, and for their part, research locations in Europe make an effort to attract top researchers with ERC grants. The acquisition of ERC grants is therefore an indicator of both the performance potential and the international appeal of research locations and science systems in an international comparison. Scientists and academics from Germany are by all means successful in securing ERC grants – but not necessarily in Germany. A number of these funding recipients are working abroad (especially in the UK, France or Switzerland). Up to now, by contrast, research locations in Germany have not been sufficiently successful at attracting outstanding researchers with ERC grants to their own institutions.

Besides the undisputed leading HEIs in the United Kingdom, it is mostly locations in small countries with strong science systems, such as Switzerland, Israel and the Netherlands, which tend to stand out from the field. Researchers in these countries have above-average suc-

Figure 2-11:
ERC-funded researchers in the Starting Grant funding line by destination country per scientific discipline



cess in acquiring ERC grants. In view of the signalling effect of such location or system comparisons, German locations should step up their efforts to entice scientists and academics that are qualified to apply for ERC grants. At the same time, third-party funding from the ERC will not replace national funding in the future, it will rather constitute a prominent addition. The DFG therefore sees the ERC funding programmes as an important supplement to its own programme portfolio. Researchers will have a broader range of funding measures available to them, and HEIs will have the opportunity to boost their international profile by succeeding in this European competition. For this reason, the DFG and the BMBF have established a joint National Contact Point, which informs and advises researchers and institutions about the funding programmes of the ERC.

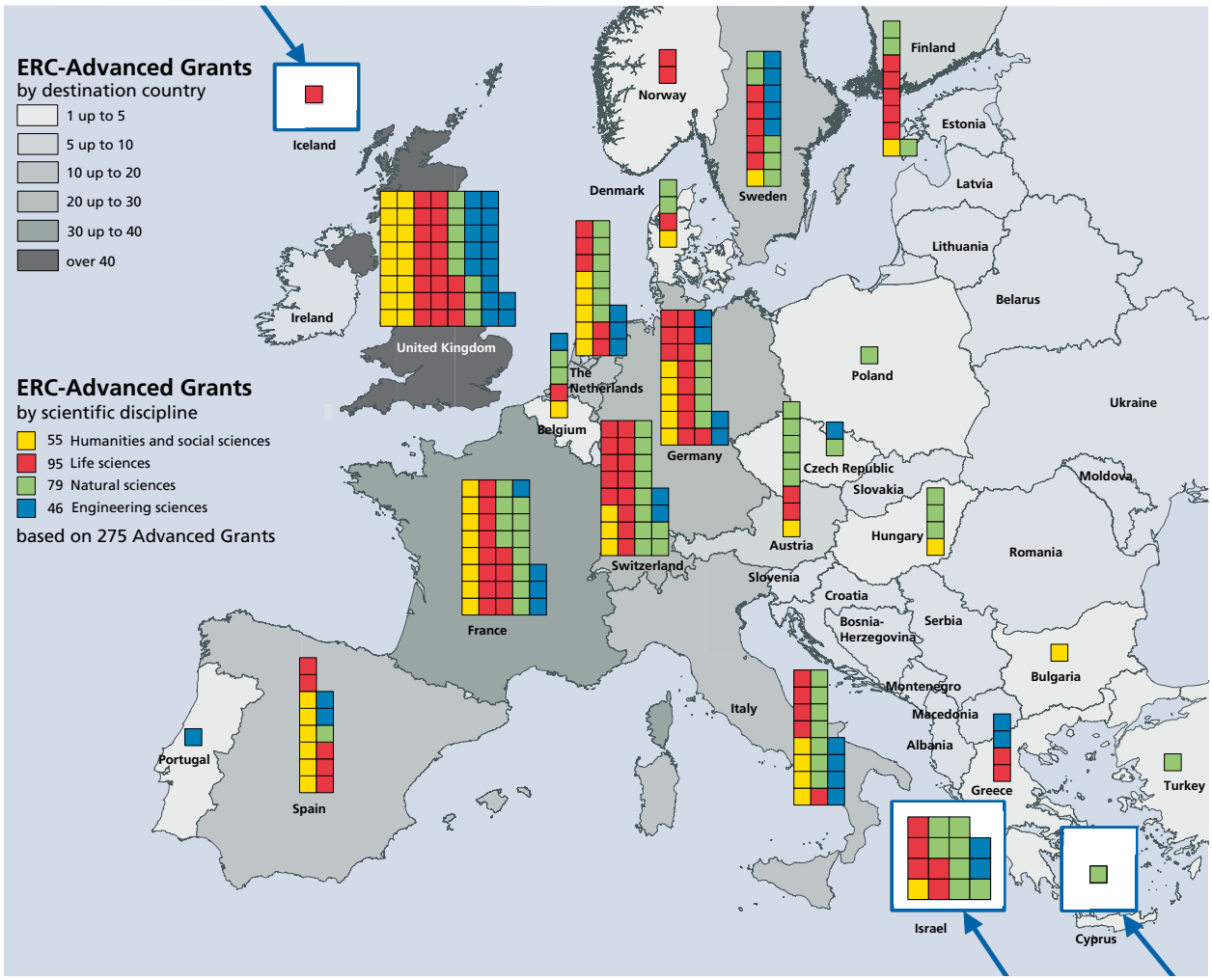
2.7 The Alexander von Humboldt Foundation

The Alexander von Humboldt Foundation promotes scientific collaborations between excellent scientists from Germany and abroad. It awards research fellowships and prizes, which enable researchers from abroad to come to Germany and conduct a project of their choice with a host and cooperation partner. Moreover, researchers from Germany can obtain a fellowship to realise a project as the guest of one of the 23,000 "Humboldtians" – alumni of the foundation – worldwide. The AvH network counts among it members scientists from 130 countries – including 41 Nobel Prize winners.

Research Fellowships for Post-Docs and Experienced Scientists

In order to make Germany even more attractive to foreign researchers, some

Figure 2-12:
ERC-funded researchers in the Advanced Grant funding line by destination country per scientific discipline



time ago the AvH augmented its fellowship payments and reformed all of its funding programmes. The centre piece today is a career stage model that replaces the former age limits. The new system offers more flexibility and sponsorship options, which are tailored to the target group and correspond to the career situation of every individual applicant or nominee. AvH research fellowships are generally awarded in an open international competition without quotas relating to scientific disciplines or countries of origin. The fellows are free to choose their research topic and the host with whom they want to work at a German research institution. In other words, the AvH does not "place" its research fellows. Even before they apply, the candidates have to make their own working arrangements with a German research institution, independently and on their own initiative.

Prizes for Top International Scientists and Scholars

In addition to research fellowships, the AvH also awards research prizes to internationally renowned researchers. There is no application procedure for research awards; established experts in Germany confer them on the basis of a nomination. The acceptance of the award and the choice of a particular German institute as the destination of a research visit are indicators of the high esteem afforded to the research facilities at that institute by a group of leading international researchers. The following awards are highlighted by way of example[31].

Sofja Kovalevskaja Prize for Independent Junior Research Group Leaders

With the Sofja Kovalevskaja Prize, which is sponsored by the Federal Ministry of Education and Research, the Alexander von Humboldt Foundation rewards outstanding scientific performances by promising young researchers from abroad. This prize, which is endowed with €1.65 million, enables the winners to set up independent junior research groups, and to conduct the research project of their choice for five years at a research institution in Germany.

[31] Details about AvH funding opportunities can be found at www.humboldt-foundation.de.

Humboldt Research Awards

This prize is awarded for their entire achievement to date to scientists and scholars whose fundamental discoveries, insights or new theories have had a lasting impact on their scientific discipline and who are expected to continue their outstanding performance in the future. The scientists are invited to conduct the research project of their choice in cooperation with colleagues in Germany for a period of up to one year. The prize is endowed with €60,000.

Alexander von Humboldt Professorship

The Alexander von Humboldt Professorship is Germany's highest endowed international research prize. Introduced in 2008 it accepts nominations of foreign scientists and academics from any subject area, as long as they are global leaders in their respective fields. These top scientists and scholars are given the task of establishing or enhancing long-term, internationally visible research priorities in Germany. Ten professorships, which are funded with up to €5 million each, are to be allocated every year. Only German higher education institutions are entitled to apply.

The "Humboldt Ranking" and the Data Basis of the Funding Ranking

In the period from 2003 to 2007, the Alexander von Humboldt Foundation enabled research visits for a total of 4,017 research fellows and 1,146 prize winners. In terms of research indicators, the visits of AvH funding-recipients offer valuable clues to the international visibility and attractiveness of German institutions among top international researchers, on the one hand, and the intensity of their cooperation with guest researchers from abroad, on the other. For several years now, the AvH has recorded the distribution of research visits by Humboldt research fellows and prize winners to German host institutions. The analyses presented in the 2009 Funding Ranking are based on data used by the Alexander von Humboldt Foundation for its own Humboldt Ranking and provided for use in this ranking. In the statistics used as a basis here, Humboldt research fellows and prize winners are grouped together as AvH funding-recipients. Moreover, a five-year reporting period is employed, to

Table 2-10:
The most common countries of origin for AvH-funded researchers

Research visits by prize winners			Research visits by fellows		
Country of origin	**No.**	**cum. %**	**Country of origin**	**No.**	**cum. %**
USA	511	44.6	China	493	12.3
Russian Federation	107	53.9	USA	376	21.6
Israel	64	59.5	India	372	30.9
Canada	58	64.6	Russian Federation	238	36.8
France	52	69.1	Japan	186	41.4
United Kingdom	46	73.1	France	146	45.1
Japan	43	76.9	Poland	138	48.5
Italy	42	80.5	Italy	133	51.8
Australia	39	83.9	Spain	119	54.8
India	21	85.8	United Kingdom	110	57.5
China	12	86.8	Canada	87	59.7
The Netherlands	12	87.9	Australia	79	61.7
Switzerland	12	88.9	Nigeria	78	63.6
Denmark	11	89.9	Hungary	76	65.5
Poland	11	90.8	Bulgaria	69	67.2
Spain	10	91.7	Brazil	68	68.9
South Korea	8	92.4	Turkey	64	70.5
Sweden	7	93.0	Romania	63	72.1
Finland	6	93.5	Argentina	51	73.3
Hungary	6	94.1	Ukraine	50	74.6
Ukraine	6	94.6	Egypt	48	75.8
Report subtotal	**1,084**	**94.6**	**Report subtotal**	**3,044**	**75.8**
Others	**62**	**5.4**	**Others**	**973**	**24.2**
Total	**1,146**	**100.0**	**Total**	**4,017**	**100.0**
No. of countries	**51**		**No. of countries**	**109**	

Data basis and source:
Alexander von Humboldt Foundation (AvH): Research visits by AvH guest researchers from 2003 to 2007.
Calculations by the DFG.

keep the validity of the data independent of annual contingencies or fluctuations[32].

Countries of Origin of Humboldt Funding Recipients

The destination institutions chosen by the AvH funding recipients are investigated more closely in the subject-specific chapters, but at this point we can turn our attention to the question of their countries of origin. In the AvH's competitive selection process, which is decided purely on the basis of scientific quality without any quotas relating to countries or subject-areas, apart from the USA, it is predominantly researchers from China and India who are most successful in numerical terms (see Table 2-10). However, as far as the research awards for internationally renowned researchers are concerned, laureates from the USA are leading by a large margin, with an almost 45 percent share of the awards. They are followed by prize winners from the Russian Federation and Israel as well as 48 other countries. The ranking analyses of the HEIs and most importantly the specific emphases that these institutions place on particular scientific disciplines will be further elaborated in Chapter 4, where they form the central focus of this report.

2.8 The German Academic Exchange Service

The German Academic Exchange Service (Deutscher Akademischer Austauschdienst, DAAD) is a joint organisation of German higher education institutions. Similar to the DFG, the DAAD is organised as a registered association under private law. Its members are admitted upon application and include the HEIs represented in the German Rectors' Conference (Hochschulrektorenkonferenz, HRK)

[32] Accordingly, the Alexander von Humboldt Professorship, which was introduced in 2008, is not yet accounted for in this funding ranking.

and their student bodies. The main task of the DAAD is the promotion of international academic relations between German HEIs and foreign institutions, primarily by means of the exchange of students and researchers.

Goals of the DAAD

The strategic goals of the DAAD include the promotion of study and research visits to Germany by elite young researchers from abroad. It is hoped that this will allow these researchers to take home a positive impression of Germany and to establish contacts with Germany. Against this backdrop, the DAAD awards fellowships to foreign students, trainees, postdocs, and researchers. These fellowships are primarily financed by funds from the Federal Foreign Office and the Federal Ministry for Economic Cooperation and Development.

DAAD fellowships are open to students and researchers from all countries and all subject areas. An independent Academic Selection Committee decides the awards. The overriding criteria that they take into account are the scientific qualifications and the character of the applicant. Altogether, the DAAD expects a high level of self-initiative from the applicants in the preparation and realisation of their visit to Germany. With this in mind, this report uses the number of DAAD-funded researchers as another indicator of the international visibility and attractiveness of German research institutions.

Group of Funding Recipients

In the years 2005 to 2007, the DAAD invested a total of €504 million in individual grants programmes, the majority of which was allocated to students and graduates. A total of 163,240 individuals were funded, including 63,077 fellows from Germany and 100,163 from abroad. The analyses of DAAD data presented

Table 2-11:
Summary of funding-based research indicators: Shares per type of institution

Type of institution	Funding for research projects[1)]							
	DFG awards		Direct R&D project funding by the federal government		Federal R&D funding for IGF and PRO INNO II		R&D funding in FP6	
	Mio. €	%	Mio. €	%	Mio. €	%	Mio. €	%
Higher education institutions	**5,076.7**	**87.6**	**1,501.2**	**34.1**	**164.2**	**24.8**	**710.9**	**31.3**
Non-university research institutions	**694.8**	**12.0**	**1,325.2**	**30.1**	**226.7**	**34.3**	**880.1**	**38.8**
Max Planck Society	231.7	4.0	136.6	3.1	0.2	0.0	115.7	5.1
Fraunhofer Society	22.8	0.4	304.8	6.9	27.9	4.2	162.3	7.2
Helmholtz Association	123.0	2.1	258.4	5.9	2.2	0.3	237.7	10.5
Leibniz Association	158.5	2.7	136.8	3.1	6.3	0.9	70.9	3.1
Federal institutions	44.0	0.8	67.9	1.5	5.9	0.9	96.1	4.2
Other institutions	114.8	2.0	420.6	9.5	184.3	27.9	197.4	8.7
Industry and commercial companies	**0.0**	**0.0**	**1,577.8**	**35.8**	**270.9**	**40.9**	**675.7**	**29.8**
Non-institutional recipients	**24.7**	**0.4**	**1.4**	**0.0**	**0.0**	**0.0**	**1.3**	**0.1**
Total	**5,796.2**	**100.0**	**4,405.4**	**100.0**	**661.8**	**100.0**	**2,268.0**	**100.0**

Notes:
In the case of DFG awards, the Excellence Initiative funding decisions made at the end of 2006 and the end of 2007 are included in the calculation in the form of three-year awards rather than five-year awards for methodical reasons. Awards in the third funding line (Institutional Strategies) are assigned in full to the university submitting the proposal. The calls for proposals in FP6 refer to a period of four years (2002 to 2005). The funding totals shown here have been converted to a three-year period corresponding to the reporting years taken into account for funding by the DFG and the federal government. The funding recipients considered here received a total of € 3,024.0 million in the EU's FP6. Further remarks on methodology can be found in the appendix.

[1)] Only including funds for German recipients.

Data basis and sources:
Deutsche Forschungsgemeinschaft (DFG): DFG awards 2005 to 2007.
Federal Ministry of Education and Research (BMBF): Direct R&D project funding by the federal government 2005 to 2007 (project database PROFI).
Federation of Industrial Cooperative Research Associations (AiF): Funding for the promotion of innovation competence in small and medium-sized enterprises (PRO INNO II) and for collaborative industrial research (IGF) 2005 to 2007.
EU Office of the BMBF: German participations in the Sixth EU Framework Programme from 2002 (project data as of 02.06.2008).
Calculations by the DFG.

in this report are restricted to the group of scientists and academics from outside Germany. From 2005 to 2007, the DAAD awarded fellowships to a total of 21,145 persons in this group. The majority of the DAAD-funded scientists and academics came from the Russian Federation, Poland and China, while the rest came from 160 other countries.

Data Basis of the Funding Ranking

This report shows how many foreign scientists and academics made a research visit to the different higher education institutions. In the subject-specific analyses carried out in the Funding Ranking, only those HEIs are taken into account which, according to the funding statement of the DAAD, received at least €1 million per year. This applies to 51 HEIs, where a total of 2,641 DAAD-funded guest researchers completed a research visit (cf. Table A-26 in the appendix). The ranking of HEIs by scientific discipline is presented in Chapter 4 where it forms the central focus of this report.

2.9 Comparison of Funding Structures: Basis of Research Indicators

To recapitulate, five groups of indicators, which allow us to index important aspects of research and research funding, can be derived from the study undertaken up to this point:

1. Basic Data
> Personnel at HEIs
> Basic funds of HEIs
> Third-party funds of HEIs

2. Funding for Research Projects
> DFG grants
> Direct R&D project funding by the federal government
> R&D funding by the BMWi as part of IGF and PRO INNO
> R&D funding in the Sixth EU Framework Programme

3. Scientific Expertise
> Elected DFG Review Board members
> DFG reviewers

Table 2-11 (continued):
Summary of funding-based research indicators: Shares per type of institution

Type of institution	Scientific expertise				International appeal				Collaborations in research networks	
	Members of DFG Review Boards[1]		DFG reviewers[2]		Research visits by AvH funding recipients		ERC funding recipients[3]		Participations in Coordinated Programmes of the DFG[4]	
	No.	%	No.	%	No.	%	No.	%	No.	%
Higher education institutions	**516**	**87.3**	**9,877**	**85.9**	**3,955**	**76.6**	**39**	**67.2**	**1,170**	**66.0**
Non-university research institutions	**75**	**12.7**	**1,617**	**14.1**	**1,208**	**23.4**	**19**	**32.8**	**602**	**34.0**
Max Planck Society	19	3.2	389	3.4	647	12.5	13	22.4	234	13.2
Fraunhofer Society	3	0.5	53	0.5	24	0.5	0	0.0	26	1.5
Helmholtz Association	16	2.7	328	2.9	219	4.2	4	6.9	118	6.7
Leibniz Association	25	4.2	370	3.2	137	2.7	1	1.7	102	5.8
Federal institutions	9	1.5	147	1.3	53	1.0	0	0.0	32	1.8
Other institutions	3	0.5	330	2.9	128	2.5	1	1.7	90	5.1
Total	**591**	**100.0**	**11,494**	**100.0**	**5,163**	**100.0**	**58**	**100.0**	**1,772**	**100.0**

[1] Beyond the reporting group considered here, another three Review Board members are working at HEIs outside Germany.
[2] Apart from the reviewers included here, another 81 persons from industry and business, 372 private persons from Germany and 3,616 persons working abroad were consulted by the DFG as reviewers.
[3] The table incorporates ERC funding recipients who chose Germany as their destination country.
[4] Information on the data basis used and the methodical approach can be derived from section A.4 in the appendix.

Data basis and sources:
Deutsche Forschungsgemeinschaft (DFG): Participations in Coordinated Programmes (Collaborative Research Centres, Research Units, DFG Research Centres, Graduate Schools and Clusters of Excellence) 2005 to 2007, reviewers of proposals within the framework of the Individual Grants Programme and Coordinated Programmes 2005 to 2007, and elected members of DFG Review Boards for the term of office 2008 to 2011.
Alexander von Humboldt Foundation (AvH): Research visits by AvH guest researchers from 2003 to 2007.
European Research Council (ERC): Researchers funded in the two first calls for proposals.
(Project database CORDIS; as of 15.04.2009).
Calculations by the DFG.

4. International Appeal
> AvH-funded visiting researchers
> DAAD-funded scientists and academics from abroad
> ERC-funded scientists and academics

5. Collaboration in Research Networks
> Participation in the DFG's Coordinated Programmes
> Number of institutions cooperated with in these programmes

From this point of view, the particular strength of the DFG Funding Ranking is that it is not only based on statistics for third-party funding, but also on other research funding related activities, which go way beyond the monetary aspect.

Characteristics of the Figures Incorporated Here

If the various figures are juxtaposed in an overall view, specific characteristics emerge, which must be borne in mind when interpreting the institution-specific analyses presented in the following chapter. This is revealed most especially by the *institutional* and *thematic* orientation that characterises the funding activity which underlies a particular figure. Tables 2-11 and 2-12 show the extent to which the various types of institutions and scientific disciplines participate in the different funding programmes or how they are represented in terms of the indicators employed here.

Institutional Emphases

Table 2-11 specifies the percentage shares of the indicators accounted for by the different types of institution. The DFG Funding Ranking differentiates between three general groups of institutions: higher education institutions, industrial and commercial companies, and non-university research institutions. The latter group includes federal institutions, the four large research organisations and other non-university institutions such as academies and libraries (cf. Section 3.2).

Looking at the indicators based on research and funding information from the DFG, such as figures for scientific expertise or collaboration in research networks, a distinct concentration on the *HEI sector* is apparent[33]. Almost 90 percent of the DFG's total funding volume is allocated to HEIs and this predominantly to universities.

[33] The same applies to the funding structures of the ERC, the AvH and the DAAD. A glance at their institutional profiles reveals that the distributions are very similar.

Table 2-12:
Summary of funding-based research indicators: Shares per scientific discipline

Scientific discipline	Funding for research projects[1)]					
	DFG awards		Direct R&D project funding by the federal government		R&D funding in FP6	
	Mio. €	%	Mio. €	%	Mio. €	%
Humanities and social sciences	856.7	14.8	39.9	0.9	22.5	1.0
Life sciences	1,989.4	34.3	856.1	19.4	396.3	17.5
Natural sciences	1,415.3	24.4	459.3	10.4	90.8	4.0
Engineering sciences	1,195.5	20.6	2,575.6	58.5	1,233.3	54.4
Other funding areas	339.4	5.9	474.5	10.8	525.0	23.1
Total	**5,796.2**	**100.0**	**4,405.4**	**100.0**	**2,268.0**	**100.0**

Notes:
In the case of DFG awards, the Excellence Initiative funding decisions made at the end of 2006 and the end of 2007 are included in the calculation in the form of three-year awards rather than five-year awards for methodical reasons. Awards in the third funding line (Institutional Strategies) are trans-disciplinary and are therefore shown separately. The calls for proposals in the EU's FP6 refer to a period of four years (2002 to 2005). The funding totals shown here have been converted to a three-year period corresponding to the reporting years taken into account for funding by the DFG and the federal government. The funding recipients considered here received a total of € 3,024.0 million in the EU's FP6. Further remarks on methodology can be found in the appendix.

[1)] Only including funds for German recipients.

Data basis and sources:
Deutsche Forschungsgemeinschaft (DFG): DFG awards 2005 to 2007.
Federal Ministry of Education and Research (BMBF): Direct R&D project funding by the federal government 2005 to 2007 (project database PROFI).
EU Office of the BMBF: German participations in the Sixth EU Framework Programme from 2002 (project data as of 02.06.2008).
Calculations by the DFG.

The HEIs have a share of 30 to 40 percent of the total funding awarded by the EU and the federal government for research projects. As far as *industrial and commercial companies* are concerned, they account for a comparable share, between 30 and 40 percent, of the funding paid out by the EU and the federal government. Due to the DFG's statutory responsibilities, however, its funding programmes are only applicable to researchers working at public and non-profit institutions (including museums or hospitals).

Varying emphases are also evident in relation to *non-university research institutions*. The institutes of the Helmholtz Association, for example, participate heavily in the Sixth EU Framework Programme, accounting for 11 percent of all funds that went to German institutions, and they are also recipients of funding from the federal government (6 percent), but there is hardly any trace of them in the DFG programmes or in the IGF and PRO INNO programmes. Fraunhofer Institutes also participate to a very limited extent in DFG programmes, although they have a relatively consistent 6 or 7 percent share of the total funding volumes awarded by all other funding bodies. It is also worth mentioning that non-university research institutions account for 34 percent of 1,772 institutional participations in the DFG's Coordinated Programmes which are examined in more detail in Chapter 4. They thus have a disproportionate level of participation in these programmes, in relation to their share of the total DFG funding volume. This situation is no doubt encouraged by certain of the DFG's procedural regulations, which explicitly promote the participation of researchers working at non-university research institutions in Coordinated Programmes.

The differences that emerge regarding the shares of HEIs and non-university research institutions and especially with regard to the shares of business and industry are thus a clear indication of the respective *orientations of the funding sources and their programmes*. At the DFG, a strong emphasis on basic research goes hand-in-hand with a focus on research in HEIs. On the other hand, the main clients of the funding programmes sponsored by the federal government, the EU and above all the AiF[34], which are much more oriented toward questions of application and commercial exploitation, are scientific institu-

[34] In regard to the BMWi funding programmes supervised by the AiF and to the institutions grouped together in Table 2-11 as "Other institutions", it is primarily the research associations of the AiF conducting IGF projects themselves, and other non-profit research institutions that have been allocated funds.

Table 2-12 (continued):
Summary of funding-based research indicators: Shares per scientific discipline

Scientific discipline	Scientific expertise				International appeal						Collaborations in research networks	
	Members of DFG Review Boards		DFG reviewers		Research visits by AvH funding recipients		DAAD-funding recipients[1]		ERC funding recipients[2]		Participations in Coordinated Programmes of the DFG[3]	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Humanities and social sciences	135	22.7	3,849	24.7	1,309	25.4	1,044	39.5	10	17.2	213	12.0
Life sciences	229	38.6	5,510	35.4	772	15.0	576	21.8	20	34.5	781	44.1
Natural sciences	115	19.4	3,760	24.2	2,517	48.8	657	24.9	18	31.0	520	29.3
Engineering sciences	115	19.4	2,443	15.7	565	10.9	364	13.8	10	17.2	258	14.6
Total	**594**	**100.0**	**15,563**	**100.0**	**5,163**	**100.0**	**2,641**	**100.0**	**58**	**100.0**	**1,772**	**100.0**

[1] For DAAD-funded researchers, subject-specific data was available for 51 HEIs, which had a total expenditure of at least one million euros per year according to DAAD funding statements.
[2] The table incorporates ERC funding recipients who chose Germany as their destination country.
[3] Information on the data basis used and the methodical approach can be derived from section A.4 in the appendix.

Data basis and sources:
Deutsche Forschungsgemeinschaft (DFG): Participations in Coordinated Programmes (Collaborative Research Centres, Research Units, Research Centres, Graduate Schools and Clusters of Excellence) 2005 to 2007, reviewers of proposals within the framework of the Individual Grants Programme and Coordinated Programmes 2005 to 2007, and elected members of DFG Review Boards for the term of office 2008 to 2011.
Alexander von Humboldt Foundation (AvH): Research visits by AvH guest researchers from 2003 to 2007.
German Academic Exchange Service (DAAD): Researchers from abroad funded between 2005 and 2007.
European Research Council (ERC): Researchers funded in the two first calls for proposals.
(Project database CORDIS; as of 15.04.2009).
Calculations by the DFG.

tions with close ties to business, technical universities for instance (cf. also Section 4.4), but also business and industry. In this respect, the source of funding itself becomes an indicator: From a strong orientation toward the DFG, it is possible to deduce an emphasis on basic research, and from a strong orientation toward the federal government, the EU, and the AiF, it is possible to deduce a focus on the immediate commercial exploitation of the funded research project.

Thematic Emphases

In Table 2-12 the indicators are broken down by scientific discipline. In the DFG's subject classification system, the 48 research fields that are analysed in this report are grouped into the four scientific disciplines of humanities and social sciences, life sciences, natural sciences and engineering sciences. The data regarding funding by the federal government and the data regarding the Sixth Framework Programme permit a differentiation by twelve and eight funding areas respectively, which have been assigned to the four scientific disciplines[35].

Compared to funding by the other funding bodies, DFG awards are distributed more evenly across the four scientific disciplines – quite in keeping with the DFG's statutory goal of promoting science "in all its branches". By contrast, the EU and the federal government clearly prioritise the engineering sciences and life sciences, as confirmed by a correspondingly high share of the funding volume awarded to these two scientific disciplines. The IGF and PRO INNO programmes supervised by the AiF also focus on research in the engineering sciences.

In particular the share of funding allocated to the humanities and social sciences is significantly higher for the DFG than for the other funding bodies. This scientific discipline also has relatively high shares in terms of the personnel-related data included in this report, such as the number of reviewers.

As shown by the two tables, each of the indicators exhibits its own institutional and thematic emphases. All of the indicators provide adequate information on German HEIs, which constitute the main institutional focus of the DFG Funding Ranking. As for the shares allocated to the individual scientific disciplines, the DFG performance indicators in particular provide a solid basis for transdisciplinary observations. Other performance indicators, however, can only be applied to selected scientific disciplines and funding areas. Chapters 3 and 4 will address the main focus of this report, which is to present the subject-specific analyses based on the research indicators introduced in this chapter, and to describe the thematic priorities of the HEIs.

[35] With regard to the subject classification system used in the Funding Ranking 2009, an explanation of the methodical approach can be found in Section A.3 in the appendix.

3 Research Priorities and Funding Profiles of Research Institutions

The research indicators introduced in the previous chapter, which are based on information concerning the research funding activities of public institutions, are utilised below in a *description of the research profiles* of selected research institutions. The visual representations in the DFG Funding Ranking focus on HEIs and non-university research institutions. The analyses presented here are based on a directory of German research institutions compiled by the DFG, extracts of which are also available online (cf. Figure 3-1). The DFG's Institution Database also serves as a reference model for the classification of institutional data from the various external sources employed here.

Altogether, along with information on DFG reviewers and elected members of DFG Review Boards, funding data from the DFG, the federal government, the EU and the AiF as well as data on the individual funding of visiting researchers by the ERC, the AvH and the DAAD form the basis of the analyses presented in this report. Collectively, this funding data represents almost 90 percent of all third-party funding provided by public funding bodies for the promotion of German research[36].

First of all, this chapter will present the *cross-disciplinary funding profiles* of research institutions and regions, as deduced from the main funding indicators, including DFG awards, direct R&D project funding by the federal government and R&D funding in the Sixth EU Framework Programme. These analyses are further expanded in the following subject-specific chapter, in which the *thematic priorities* of HEIs and non-university research institutions are elaborated. In keeping with the DFG subject classification system, the subject-specific analyses are *differentiated into 48 research fields,* which are arranged in the *four scientific disciplines* distinguished by the DFG (humanities and social sciences, life sciences, natural sciences and engineering sciences)[37].

The question of how institutions, with a special focus on *HEIs*, are positioned in the various markets for third-party funding is a central concern of the following discussion. After a distinction has been made between technical and non-technical universities and between institutions with and without an emphasis on medical research, is it possible to discern groups of HEIs which serve specific research sectors? Which *non-university research institutions* are especially active in terms of third-party funding and on which funding areas do the various institutions concentrate? In which *regions* of Germany are the HEIs and non-university research institutions particularly active and what thematic priorities are set in the different regions?

As the profile analyses presented in this chapter allow us to answer such questions, the DFG Funding Ranking not only highlights existing differences between research regions and research institutions, it also identifies specific potential, for example, for collaborations and

[36] See also Section 2.1.

[37] A description of the DFG's Review Board system and the subject classification system derived from it can be found in Section 2.2 and in Section A.3 in the appendix.

Funding Ranking 2009. DFG, Deutsche Forschungsgemeinschaft

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networks between HEIs, non-university research institutions, industry and business. Last but not least, the study offers insights into the *process of differentiation in the research system*, which is primarily brought forward by the Excellence Initiative of the states and the federal government and which is steadily growing in importance due to increasingly diverse demands placed on research institutions. All in all, the Funding Ranking contributes to the discussion about how research institutions can shape their profile and set thematic priorities.

3.1 Higher Education Institutions

The scope of the analyses presented in this chapter is limited to the 40 HEIs with the highest volume of DFG awards[38]. First of all, the ranking of the HEIs will be stated in regard to the

- overall chronological development,
- differentiation by specific funding programmes and
- thematic aspects.

Building on this, the cross-disciplinary analyses of the funding profiles and thematic priorities of HEIs in DFG funding programmes will form the core of the chapter, though the specific funding structures of the EU and federal government will be introduced for purposes of comparison.

The coloured markings in the tables group together ten institutions with consecutive ranking positions into ranking groups. The underlying award totals are also specified. They remind us why it is important that an institution's ranking group rather than its ranking position be evaluated in any interpretation of the ranking. In some cases the difference between one ranking position and the next is less than €100,000 in three years. If one considers that this amount corresponds roughly to the total funding for a single DFG project in the Indi-

[38] The 40 HEIs with most grants in each scientific discipline will also be examined in Chapter 4, while the appendix also gives DFG figures for all HEIs that received DFG awards of at least €0.5 million in the reporting period from 2005 to 2007.

Figure 3-1:
The Research Explorer and GEPRIS – Information services by the DFG

Research Explorer
The German research directory

www.dfg.de/rex

GEPRIS
Geförderte Projekte der DFG

www.dfg.de/gepris

Research Explorer is a unique directory of German research institutions, which has been available online since 2008, opening up the German research landscape to users from around the world.
By providing consistent and structured information on German HEIs and non-university research institutions in both German and English, it supports researchers in Germany and abroad in the search for co-operation partners or suitable institutions for research visits to Germany.

It is possible to search through the 18,000 institutes at German HEIs and non-university research institutions documented by Research Explorer using regional or thematic criteria, and to access current contact data and Internet addresses. The search can also be restricted using an interactive cartographic representation.

By means of a direct link to the GEPRIS database, which lists more than 65,000 DFG-funded projects involving over 40,000 persons, Research Explorer also provides access to all currently-running or recently-completed DFG-funded projects at the respective institutes. GEPRIS lists projects in the Individual Grants Programme as well as in Collaborative Research Centres, Priority Programmes, Research Units and research activities funded by other DFG instruments. The main goals of a project are described in an abstract composed by one of the project participants.

Since GEPRIS makes it possible to look up the goals and participants involved in DFG research at a particular location, this information system represents an important supplement to the Funding Ranking: While in the Funding Ranking the thematic profile of an institution is reflected by the amount of funding acquired by the researchers working at that institution in the context of DFG-funded projects, GEPRIS provides access to information on the concrete research ideas underlying this funding.

vidual Grants Programme, it becomes quite clear that comparisons based on individual ranking positions are hardly tenable. Moreover, the phasing-out of a single Collaborative Research Centre, which is generally funded over a 12-year period, may cause significant changes in the ranking positions. In this context, the most meaningful indication of chronological development is given by trends that reveal long-term tendencies.

In the following, a detailed examination of the position of individual HEIs as complete institutions in the competition for DFG research funding and of the research fields they concentrate on is carried out against the backdrop of two aspects that were already referred to in the DFG Funding Ranking 2006:

Stable Ranking Group Membership of HEIs

On the one hand, it can be ascertained that the membership of HEIs in the different ranking groups is very stable over time. This can be confirmed with a glance at the period from 1996 to 2007, although there are changes for individual HEIs (cf. Table 3-1). The FU Berlin and the University of Freiburg, for instance, have advanced from the second ranking group into the group with the ten top-ranking institutions in terms of funding awards. The universities of Dresden and Constance have undergone similar developments. The University of Constance's rise over a period of about ten years from the end of the third to the middle of the second ranking group is primarily due to its success in the Excellence Initiative and to the amount of funding allocated to the Institutional Strategy submitted by this relatively small HEI (cf. Table 3-2).

Competitive Funding is Concentrated on a Limited Number of HEIs

On the other hand, externally funded research is mostly concentrated on a limited number of HEIs. All told, the DFG funded research projects at 159 HEIs, 92 of which were universities, during the reporting period from 2005 to 2007. As shown by Table 3-2, the funding allocated to the 40 HEIs with the most grants amounted to €4.5 billion. This corresponds to a share of over three-quarters of the DFG awards in all of the programmes considered here (€5.8 billion). The HEIs of the top ranking group already account for more than one-third of the total funding allocated to HEIs, and the universities in the top-twenty group have already reached the 60 percent margin. While the 30 HEIs with the highest funding received 77 percent of all DFG grants, the top 40 institutions collected 88 percent. This clearly shows that the great majority of the research funded by the DFG, but also, as will become apparent later, by the EU and the federal government, is carried out at the HEIs listed here.

The HEIs with the Highest Funding

Tables 3-1 and 3-2 and Figure 3-2 provide an initial overview of the 40 HEIs with the most grants. The universities of Aachen (TH) and Munich (LMU) lead the DFG Funding Ranking 2009. Their funding totals (€257 and €249 million) are significantly higher than those of the other leaders, Heidelberg (U), Munich (TU) and Berlin (FU), with amounts between €215 and €194 million. They are also well clear of the universities of Freiburg (U), Karlsruhe (TH), Erlangen-Nuremberg (U), Göttingen (U) und Berlin (HU), which follow in the top group with amounts between €166 and €153 million. The second ranking group, which is headed by the universities of Cologne, Frankfurt on the Main and Bonn (U), received awards between almost €106 and €126 million. The third ranking group, led by Hamburg and Mainz (U), includes institutions with funding volumes from €67 to €99 million. Finally, the institutions of the fourth group – headed by the Hannover Medical School – received funding volumes of between €52 and €66 million.

HEI Research Profiles are Strongly Influenced by DFG-Funded Projects in the Individual Grants Programme

Table 3-2 also offers an insight into the break down of HEI funding volumes among various groups of funding programmes. A distinction is drawn between projects funded as part of the Individual Grants Programme, the Excellence Initiative and other Coordinated Programmes of the DFG[39]. From this presentation, it

[39] Figure 2-5 in Chapter 2 displays the funding programmes included in the group of Coordinated Programmes. Furthermore, Table A-11 in the appendix lists the DFG funding volumes of HEIs which received more than €0.5 million in the reporting period 2005 to 2007, differentiated by programme groups and individual funding programmes.

Table 3-1:
Ranking analysis of the 40 HEIs with the highest volume of DFG awards 2005 to 2007 by reporting period

Higher education institution	Reporting period			
	1996–1998	1999–2001	2002–2004	2005–2007
	Position	Position	Position	Position
Aachen TH	2	1	2	1
Munich LMU	1	2	1	2
Heidelberg U	4	6	3	3
Munich TU	3	3	9	4
Berlin FU	13	13	10	5
Freiburg U	15	11	11	6
Karlsruhe TH	14	10	6	7
Erlangen-Nuremberg U	8	5	7	8
Göttingen U	11	15	12	9
Berlin HU	9	9	5	10
Cologne U	19	16	18	11
Frankfurt/Main U[1)]	25	18	20	12
Bonn U	12	12	13	13
Tübingen U	6	4	8	14
Münster U	23	19	15	15
Constance U	30	29	34	16
Würzburg U	10	8	4	17
Dresden TU[1)]	24	24	20	18
Stuttgart U	5	7	14	19
Darmstadt TU	22	25	25	20
Hamburg U[2)]	7	14	17	21
Mainz U	17	22	19	22
Bochum U	20	17	16	23
Hannover U	21	21	24	24
Bremen U	31	28	23	25
Kiel U	27	36	36	26
Berlin TU	16	20	22	27
Bielefeld U	29	31	38	28
Giessen U	32	26	26	29
Jena U	35	32	30	30
Hannover MedH	44	43	41	31
Düsseldorf U	26	27	29	32
Saarbrücken U	33	35	39	33
Ulm U	34	37	33	34
Marburg U	18	23	27	35
Dortmund TU	37	30	32	36
Brunswick TU	28	33	31	37
Regensburg U	40	39	37	38
Duisburg-Essen U[3)]	–	–	28	39
Leipzig U	38	34	40	40

Key to ranking groups:

1st to 10th position	11th to 20th position	21st to 30th position	31st to 40th position	41st to 60th position	61st and subsequent

[1)] The universities of Frankfurt/Main and TU Dresden shared the same position from 2002 to 2004. The second ranking group accordingly contains 11 and the third ranking group 9 HEIs.

[2)] The reporting period 1996 to 1998 also includes research facilities. The research ship METEOR, whose coordinating office is at the University of Hamburg, is therefore included too.

[3)] The HEIs in Essen and Duisburg were merged at the start of 2003, and thus appear separately in earlier reporting periods.

Data basis and source:
Deutsche Forschungsgemeinschaft (DFG): DFG awards 1996 to 2007.
Calculations by the DFG.

may be deduced, for example, that the University of Leipzig obtains more than 50 percent of its grants through projects in the Individual Grants Programme, whereas the University of Düsseldorf obtains over two thirds of its funding volume from the DFG's Coordinated Programmes and can thus be seen to rely more on funding programmes such as Research Training Groups, Collaborative Research Centres, Research Units and Priority Programmes.

In reference to the Excellence Initiative, there is evidence of a concentration of grants on universities which have the highest funding levels, also outside the Excellence Initiative. The 20 HEIs with the highest grants overall, received 80 percent of all funding allocated in the Excellence Initiative, and the remaining funds were distributed to a further 27 universities[40].

Apart from the Excellence Initiative and especially the high funding volumes associated with Institutional Strategies, it seems that a good position in the ranking depends to a large extent on the participation of HEIs in the "classic" Individual Grants Programme. On average, the 40 HEIs with the highest funding volumes obtained 42 percent of their third-party funds through projects in the Individual Grants Programme and 58 percent from the DFG's Coordinated Programmes. The Individual Grants Programme, ennobled in May 2009 to the status of "King of the DFG Funding Instruments" at a conference of DFG Review Board spokespersons, is still the largest item in the DFG programme portfolio and thus makes a decisive contribution to the profiles of the HEIs that use this instrument.

Thematic Composition of Revenue from Funding

Figure 3-2 gives a first impression of the thematic composition of the revenue from funding acquired by the universities considered here, differentiated according to 12 subject areas, with a separate category for Institutional Strategies which have not been classified by subject[41]. Moreover, Table 3-3 reveals the extent to which ranking group membership is influenced by the absolute income from funding in the four scientific disciplines distinguished by the DFG. It is thus clear that the LMU Munich, the University of Heidelberg and the FU Berlin, for instance, owe their top ranking positions to DFG-funded research in all three of the scientific disciplines represented at these institutions. The three universities are in the top ranking group in the humanities and social sciences as well as in the life sciences and natural sciences – regardless of their success in the third line of the Excellence Initiative (Institutional Strategies), which is stated in the table for information purposes only.

In most cases, the 10 HEIs with the most DFG awards owe their exceptional performance to a research profile geared toward the life sciences (cf. Table 3-3). Six of the ten highest placed HEIs are also found among the ten universities with the highest DFG funding in this scientific discipline. The University of Munich attracts about 50 percent of its subject-specific awards with projects in this area. As shown by Figure 3-2 in particular, the funds in this area are divided approximately in equal parts between biology and medicine. In Freiburg, these two subject areas account for two-thirds of the funding, with a special emphasis on medicine.

The ten leading universities also include four universities with a technical orientation. This is especially the case with TH Aachen, which received 70 percent of its awards for research projects in the engineering sciences, making it the clear leader in this scientific discipline. The University of Karlsruhe supplements its emphasis on the engineering sciences with a large volume of DFG funding for research in the natural sciences.

Four of the ten highest placed universities – Munich (LMU), Berlin (HU), Heidelberg (U), and Berlin (FU) – also owe their positions to the DFG-funded research activities of their scientists and academics in the humanities and social sciences. Thanks to its success in the Excellence Initiative, the Free University of Berlin leads the ranking in the humanities and social sciences and the volume of DFG awards it received in this scientific discipline actually exceeds the amount it received in either the life sciences or the natural sciences.

If we broaden our perspective to look at the 20 HEIs with the highest volume of grants, it is apparent that they include not only nine of the ten HEIs in the top ranking group for the life sciences and for the humanities and social sciences, but also seven of the ten leading HEIs in

[40] Table 3-1 shows in addition that seven of the altogether nine HEIs funded in the third funding line (Institutional Strategies) of the Excellence Initiative were already represented in the first ranking group in Funding Ranking 2006 (reporting period 2002 to 2004). The remaining awards went to the universities of Freiburg and Constance, which were placed 11 and 34 in the ranking.

[41] See also the remarks on the data basis and on the methodical approach in Section A.1 in the appendix.

Table 3-2:
Ranking analysis of the 40 HEIs with the highest volume of DFG awards 2005 to 2007 by funding programme

Higher education institution	DFG awards in total			of which			
				Individual Grant Programme	Coordinated Programmes (not incl. ExIn)	ExIn	
						1st & 2nd funding lines for 3 years	3rd funding line for 3 years
	Position	Mio. €	cum. %	Mio. €	Mio. €	Mio. €	Mio. €
Aachen TH	1	257.0	5.1	67.1	88.7	59.7	41.5
Munich LMU	2	249.0	10.0	74.3	92.3	42.5	39.8
Heidelberg U	3	215.4	14.2	57.8	72.5	43.8	41.3
Munich TU	4	200.4	18.2	63.5	57.9	47.6	31.4
Berlin FU	5	194.4	22.0	48.8	77.7	46.2	21.7
Freiburg U	6	165.5	25.2	53.1	51.2	20.3	41.0
Karlsruhe TH	7	159.4	28.4	33.5	73.7	7.1	45.1
Erlangen-Nuremberg U	8	157.6	31.5	56.9	73.0	27.8	
Göttingen U	9	153.5	34.5	49.6	62.7	4.6	36.7
Berlin HU	10	153.4	37.5	47.5	78.5	27.3	
Cologne U	11	126.4	40.0	47.7	55.5	23.1	
Frankfurt/Main U	12	124.8	42.5	41.0	44.9	38.9	
Bonn U	13	122.6	44.9	47.0	55.0	20.6	
Tübingen U	14	120.4	47.3	48.7	56.9	14.8	
Münster U	15	119.9	49.6	47.9	50.2	21.8	
Constance U	16	119.7	52.0	20.8	37.4	20.7	40.9
Würzburg U	17	110.4	54.2	34.5	72.6	3.4	
Dresden TU	18	107.3	56.3	39.6	62.6	5.1	
Stuttgart U	19	106.7	58.4	32.6	50.8	23.4	
Darmstadt TU	20	106.1	60.5	35.3	47.2	23.6	
Hamburg U	21	98.7	62.4	36.5	47.7	14.6	
Mainz U	22	97.5	64.3	37.0	57.8	2.7	
Bochum U	23	93.0	66.2	31.7	57.4	3.9	
Hannover U	24	90.2	67.9	30.8	44.1	15.4	
Bremen U	25	86.7	69.7	18.3	59.3	9.2	
Kiel U	26	81.6	71.3	29.8	23.4	28.4	
Berlin TU	27	77.0	72.8	24.1	41.6	11.2	
Bielefeld U	28	74.9	74.3	23.3	28.2	23.4	
Giessen U	29	72.8	75.7	19.5	40.2	13.1	
Jena U	30	66.8	77.0	32.6	31.8	2.4	
Hannover MedH	31	65.9	78.3	17.9	30.1	18.0	
Düsseldorf U	32	63.6	79.6	18.6	45.0	0.0	
Saarbrücken U	33	61.9	80.8	21.5	25.6	14.8	
Ulm U	34	59.5	81.9	25.3	30.9	3.4	
Marburg U	35	59.3	83.1	24.8	34.6	0.0	
Dortmund TU	36	58.8	84.3	25.5	33.3	0.0	
Brunswick TU	37	54.8	85.4	23.1	31.5	0.2	
Regensburg U	38	52.5	86.4	27.4	25.1	0.0	
Duisburg-Essen U	39	52.3	87.4	21.1	31.2	0.0	
Leipzig U	40	52.2	88.4	27.0	22.6	2.6	
Position 1 to 40 overall	**01-40**	**4,490.0**	**88.4**	**1,462.8**	**2,002.6**	**685.2**	**339.4**
Other HEIs	**41-159**	**586.7**	**11.6**	**290.9**	**279.3**	**16.6**	**0.0**
HEIs overall	**01-159**	**5,076.7**	**100.0**	**1,753.7**	**2,281.9**	**701.8**	**339.4**
Based on: No. of HEIs		**159**		**150**	**97**	**47**	**9**

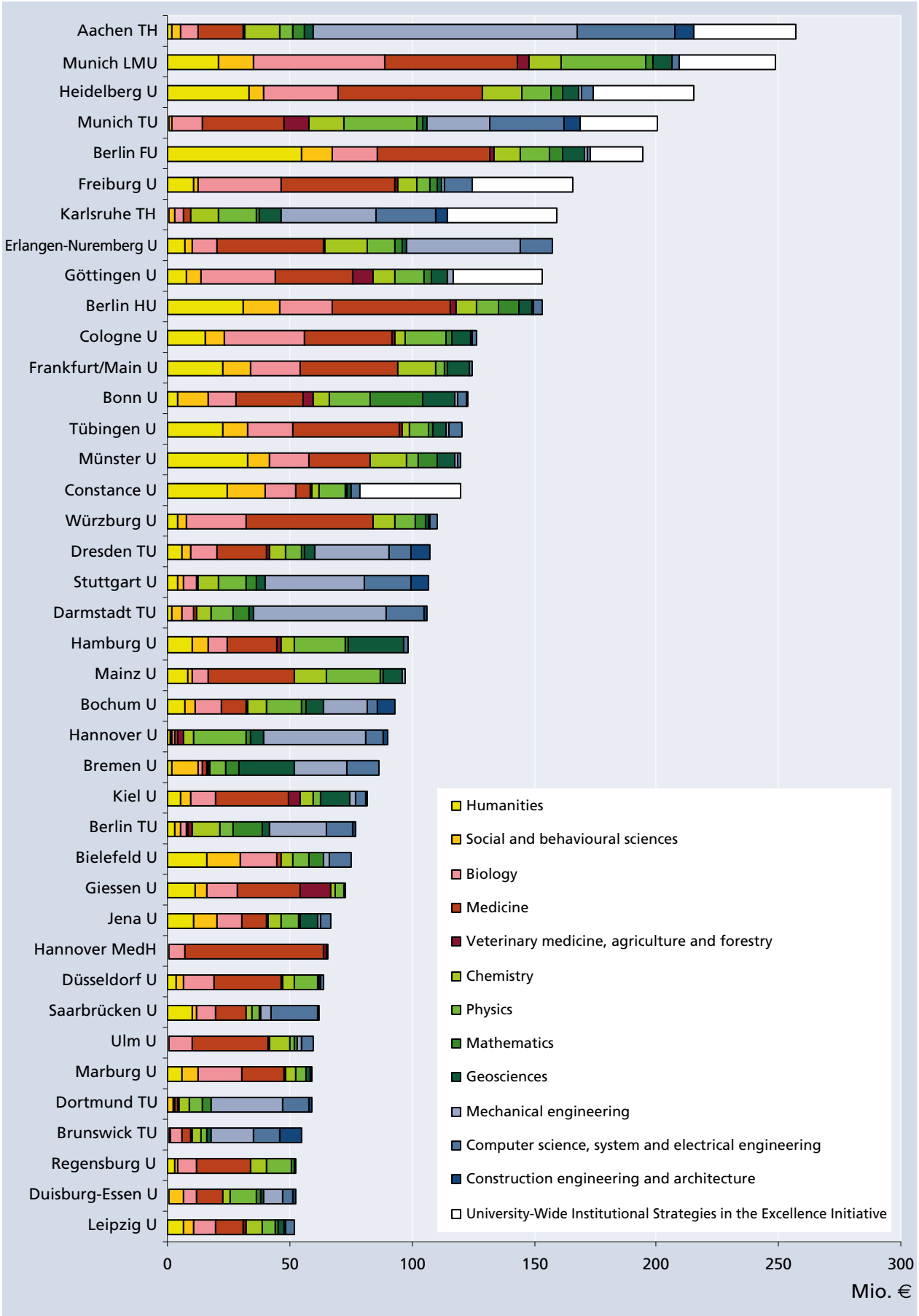
Key to ranking groups:

1st to 10th position	11th to 20th position	21st to 30th position	31st to 40th position	41st to 60th position	61st and subsequent

Notes:
For methodical reasons, the Excellence Initiative funding decisions made at the end of 2006 and the end of 2007 are included in the calculation in the form of three-year awards rather than five-year awards. Awards in the third funding line (Institutional Strategies) are assigned in full to the HEI submitting the proposal. Further remarks on methodology, with particular reference to the handling of the Excellence Initiative, can be found in the appendix.

Data basis and source:
Deutsche Forschungsgemeinschaft (DFG): DFG awards 2005 to 2007.
Calculations by the DFG.

Figure 3-2:
DFG awards 2005 to 2007 by HEI per subject area



the natural and engineering sciences. In the humanities and social sciences, the relatively small University of Bielefeld stands out with its distinct emphasis on this scientific discipline, and in the life sciences, the Hannover Medical School is conspicuous for its clear focus on medical research. The universities of Hamburg, Mainz and Bremen, whose overall positions in 21st, 22nd and 25th place put them at the head of the third ranking group, are among the leading ten HEIs in the natural sciences. Outside the "Big 20" group, the technical universities of Hannover, Brunswick and Dortmund also make their mark as leading institutions in the engineering sciences.

The HEIs listed in the table therefore include not only the institutions with the most overall grants, but also those which are especially active in terms of DFG awards in the four scientific disciplines. Sections 4.1 to 4.4 below elaborate on the current analysis by giving detailed overviews of the 40 HEIs with the most awards in each of the four scientific disciplines, differentiated by twelve subject areas and 48 research fields. These sections also provide a ranking of HEIs in each scientific discipline when normalised for size; that is, taking into account the number of professors working at a university in each scientific discipline[42].

Comparison of HEI Priorities

The analyses presented above have already given a first impression of the thematic profiles of the 40 HEIs with the highest funding volume. The visual representations that follow enable a closer inspection of these HEIs, in which the funding structures of the DFG, the federal government and the EU are subjected to closer scrutiny. In anticipation of the study of individual scientific disciplines that follows in sections 4.1 to 4.4, these analyses not only give an overview of the priorities, but also of the relative weightings implemented by these HEIs. They thereby help us to work out the similarities and differences between the funding profiles of these research institutions in a diagrammed form. Along with the various emphases placed on specific research fields funded by the DFG, the federal government and the EU, the cross-references between the different funding areas and funding sources will also be treated here.

A method of visualisation specially developed by the Max Planck Institute for the Study of Societies in Cologne has been employed here, according to which algorithmic calculations are used to generate graphs that allow the thematic or funding area specific profiles of the HEIs to be described and compared with one another. The graphs below illustrate the research fields funded by the DFG, the EU and the federal government. The assignment of these research fields to the four scientific disciplines of the DFG (humanities and social sciences, life sciences, natural sciences and engineering sciences) is indicated by the use of different colours. The size of the individual symbol for a research field indicates the funding volume associated with that field; the size of the institution symbol corresponds to the total (cross-disciplinary) funding volume received by the respective institution.

The particular specialisations of individual HEIs are visualised in the graph by their proximity to the symbols of those funding areas which account for a high share of the funding they have received from a funding body. The symbols for funding areas are placed further apart if they have fewer funding recipients in common; HEIs are arranged close together if they have similar profiles. The subjects that determine these profiles can be read from the pie charts representing the HEIs. Thanks to this two-dimensional arrangement of the funding areas and the corresponding funding profiles of the HEIs, it is possible to gauge both the funding volumes associated with the research fields and the relative specialisations of the HEIs.

On the basis of the method described above, Figure 3-3 shows the research profiles of the 40 largest DFG funding recipients when their awards are divided into twelve different subject areas[43]. Projects approved in the three funding lines of

[42] The tables A-6 to A-10 in the appendix also specify the figures for all HEIs that received more than €0.5 million in the respective scientific disciplines in the reporting period 2005 to 2007.

[43] In addition to the profile analysis of the 40 universities with the highest DFG funding, profile visualisations are available for other HEIs which received more than €0.5 million in DFG awards between 2005 and 2007 on the Internet site that accompanies the DFG Funding Ranking 2009 (www.dfg.de/en/ranking).

the Excellence Initiative are not only represented by means of their funding amounts, they are also given visual form in the graph. Initially, the funding structure that appears in the visual representation is very similar to that already found in the DFG Funding Ranking 2006. The spectrum ranges from the *humanities and social sciences* (top left) to *life sciences* (top right) and *technical subjects* at the bottom of the picture. As the *classic basic subjects*, the *natural sciences are positioned in the middle* (left of centre); they characterise the research carried out at universities with widely different overall orientations. The natural sciences constitute an important element for technically oriented HEIs as well as for those geared toward the life sciences or the humanities and social sciences.

The diameters of the funding area symbols indicate the relative significance of DFG-funded research to the 40 HEIs with the most awards shown here. The largest DFG funding area is therefore medicine, immediately followed by biology, in many ways a closely related subject. The largest funding recipients are also identifiable; consonant with the summaries shown above (cf. Tables 3-2 and 3-3 and Figure 3-2), they are the HEIs in Aachen (TH) and Munich (LMU). An examination of the individual HEIs with the help of this differentiation of DFG funding by subject area sheds some light on the question of specific profiles. It is evident that many HEIs with similar priorities and subject portfolios converge in certain areas of the visual representation.

To pick an example, the universities of Darmstadt and Dortmund resemble each other not only because they are both technical universities with a correspondingly strong emphasis on mechanical engineering related subjects. In both cases, natural sciences and to a lesser extent life sciences and the humanities and social sciences are also represented. The profile of the TU Munich is clearly demarcated from these technical universities. Research fields in the engineering sciences also have an important role to play here, but unlike the technical universities depicted in the lower segment of the diagram, the TU Munich also covers biological and medical research, and its profile is shaped by research in the natural sciences too. Wandering on through this *"map of subjects"* one notices the HEIs in Freiburg and Marburg at the top right of the diagram. Like many other universities they are characterised by a high proportion of research in the life sciences, but also place special emphasis on the humanities and social sciences. By contrast, the HEIs in Berlin (FU), Bielefeld, Constance and Münster, shown here at the top left of the diagram, place significantly more weight on the humanities and social sciences.

Every HEI has its Own Priorities

As illustrated by these few examples, the HEIs dealt with here present on the whole a highly differentiated picture. Even if many of the institutions found in the centre of the diagram have all-round subject portfolios and follow the ideal of the "complete university", each HEI still has its own priorities. The range of these profiles is great, but the common ground between the HEIs located in the various regions of this subject map is equally extensive. The diagram does an excellent job of identifying HEIs with clearly recognisable priorities and the corresponding thematic focus of their DFG funding.

At the University of Bremen, the focus of DFG funding is above all on the geosciences – combined with an orientation toward a range of subjects in the engineering sciences and an emphasis on research in social and behavioural sciences. The overall profile of Bremen is thereby quite distinct from the other two universities that specialise in the geosciences, Hamburg and Kiel, which are displayed further up in the picture, to reflect the weightier role of the life sciences in their profiles. In the life sciences, the Hannover Medical School, with its self-evident leaning toward medical research, is especially conspicuous. The MedH receives almost 90 percent of its DFG funding in the subject area of medicine.

HEIs which Succeeded in the Excellence Initiative can Reinforce their Priorities

In the above-mentioned examples, the HEI profiles are influenced to a large extent by funding in the context of the Excellence Initiative. The funding of Graduate Schools and Clusters of Excellence, along with DFG Research Centres outside the Excellence Initiative, gives

Table 3-3:
Ranking analysis of the 40 HEIs with the highest volume of DFG awards 2005 to 2007 by scientific discipline

Higher education institution	DFG awards in total			of which				
				Humanities and social sciences	Life sciences	Natural sciences	Engineering sciences	3rd funding line of the ExIn
	Position	Mio. €	cum. %	Mio. €	Mio. €	Mio. €	Mio. €	Mio. €
Aachen TH	1	257.0	5.1	5.4	26.4	28.0	155.7	41.5
Munich LMU	2	249.0	10.0	35.1	112.8	58.3	2.9	39.8
Heidelberg U	3	215.4	14.2	39.5	89.5	39.0	6.2	41.3
Munich TU	4	200.4	18.2	1.8	55.8	48.7	62.6	31.4
Berlin FU	5	194.4	22.0	67.6	66.0	37.1	2.1	21.7
Freiburg U	6	165.5	25.2	12.7	81.3	18.3	12.3	41.0
Karlsruhe TH	7	159.4	28.4	2.9	6.9	36.9	67.6	45.1
Erlangen-Nuremberg U	8	157.6	31.5	10.0	54.6	33.2	59.8	
Göttingen U	9	153.5	34.5	13.8	70.3	30.4	2.4	36.7
Berlin HU	10	153.4	37.5	45.9	71.9	31.0	4.5	
Cologne U	11	126.4	40.0	23.2	69.6	31.3	2.3	
Frankfurt/Main U	12	124.8	42.5	34.3	60.2	28.8	1.6	
Bonn U	13	122.6	44.9	16.4	43.3	57.9	5.0	
Tübingen U	14	120.4	47.3	33.0	63.1	17.5	6.8	
Münster U	15	119.9	49.6	41.7	41.0	34.8	2.4	
Constance U	16	119.7	52.0	40.0	18.9	15.9	3.9	40.9
Würzburg U	17	110.4	54.2	7.6	76.8	22.6	3.5	
Dresden TU	18	107.3	56.3	9.7	31.9	18.8	46.9	
Stuttgart U	19	106.7	58.4	6.6	6.0	27.2	67.0	
Darmstadt TU	20	106.1	60.5	6.1	6.1	23.2	70.7	
Hamburg U	21	98.7	62.4	16.9	29.9	49.6	2.3	
Mainz U	22	97.5	64.3	10.2	41.6	44.5	1.2	
Bochum U	23	93.0	66.2	11.2	21.7	30.7	29.4	
Hannover U	24	90.2	67.9	2.1	4.6	32.9	50.6	
Bremen U	25	86.7	69.7	12.6	3.8	35.6	34.7	
Kiel U	26	81.6	71.3	9.4	45.0	20.1	7.1	
Berlin TU	27	77.0	72.8	5.2	5.2	31.3	35.3	
Bielefeld U	28	74.9	74.3	30.0	16.8	17.3	10.8	
Giessen U	29	72.8	75.7	16.2	50.3	5.8	0.4	
Jena U	30	66.8	77.0	20.1	21.0	20.1	5.6	
Hannover MedH	31	65.9	78.3	0.4	64.3	0.3	0.8	
Düsseldorf U	32	63.6	79.6	6.8	40.1	15.4	1.4	
Saarbrücken U	33	61.9	80.8	12.2	20.1	6.0	23.7	
Ulm U	34	59.5	81.9	0.6	41.0	11.4	6.5	
Marburg U	35	59.3	83.1	12.3	35.7	10.4	0.9	
Dortmund TU	36	58.8	84.3	2.3	2.6	13.3	40.6	
Brunswick TU	37	54.8	85.4	1.2	9.0	7.3	37.2	
Regensburg U	38	52.5	86.4	4.1	29.7	18.5	0.1	
Duisburg-Essen U	39	52.3	87.4	6.7	15.9	17.0	12.7	
Leipzig U	40	52.2	88.4	10.8	21.3	15.5	4.5	
Position 1 to 40 overall	**01-40**	**4,490.0**	**88.4**	**644.5**	**1,572.2**	**1,041.8**	**892.2**	**339.4**
Other HEIs	**41-159**	**586.7**	**11.6**	**124.9**	**150.5**	**128.8**	**182.5**	**0.0**
HEIs overall	**01-159**	**5,076.7**	**100.0**	**769.4**	**1,722.7**	**1,170.6**	**1,074.7**	**339.4**
Based on: No. of HEIs		**159**		**124**	**78**	**86**	**97**	**9**

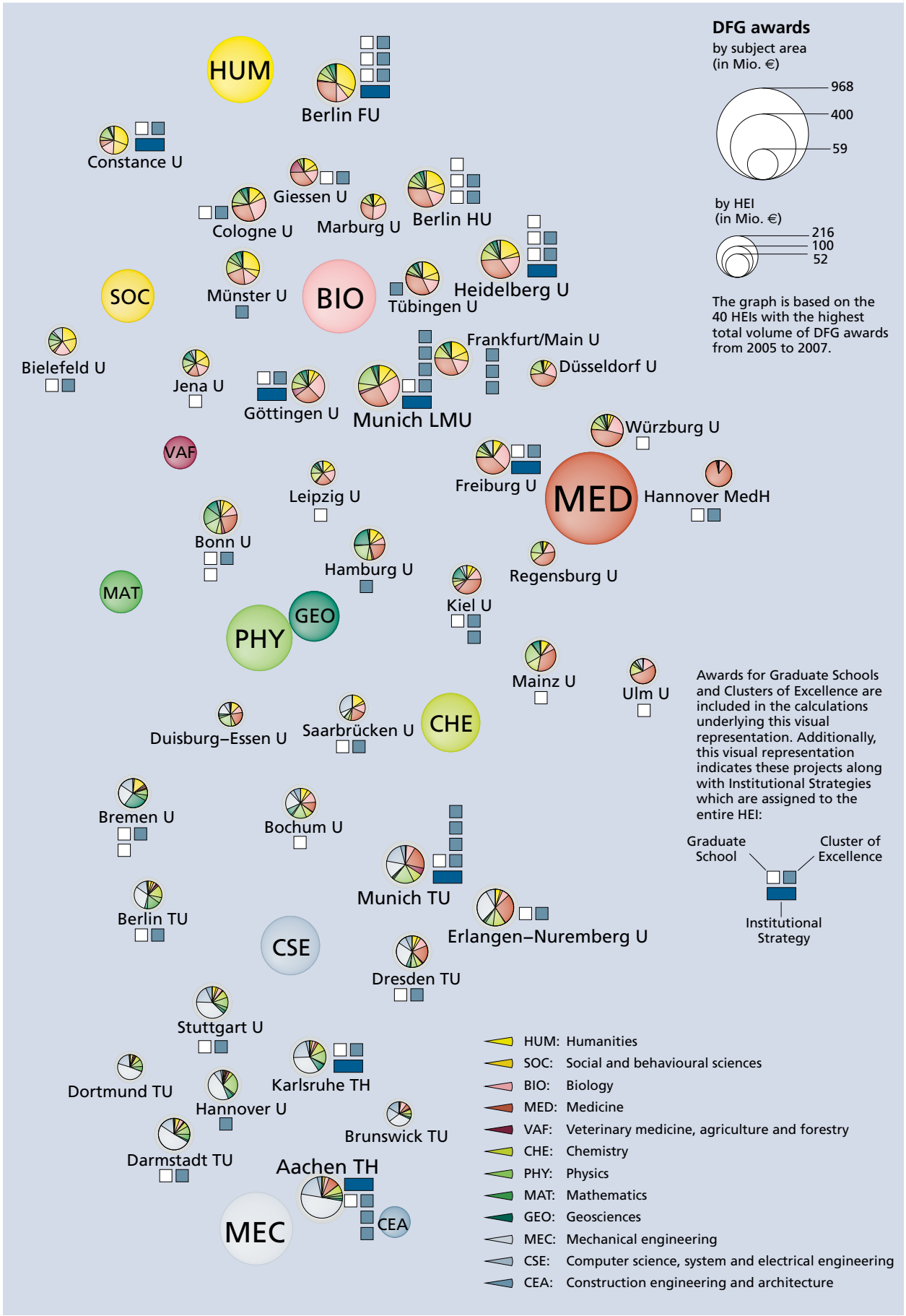
Key to ranking groups:

1st to 10th position	11th to 20th position	21st to 30th position	31st to 40th position	41st to 60th position	61st and subsequent

Notes:
For methodical reasons, the Excellence Initiative funding decisions made at the end of 2006 and the end of 2007 are included in the calculation in the form of three-year awards rather than five-year awards. Awards in the third funding line (Institutional Strategies) are trans-disciplinary and therefore assigned in full to the HEI submitting the proposal. Further remarks on methodology, with particular reference to the handling of the Excellence Initiative, can be found in the appendix.

Data basis and source:
Deutsche Forschungsgemeinschaft (DFG): DFG awards 2005 to 2007.
Calculations by the DFG.

Figure 3-3:
Funding profiles of HEIs: Subject map based on DFG awards



rise to a substantial increase in the overall research budgets of universities and most especially for the relevant subject areas. In the majority of cases, as shown by Table 3-2 with reference to the total funding volume, this builds on a broad foundation of existing funding measures in other Coordinated Programmes and the Individual Grants Programme.

Thanks to the Excellence Initiative, the University of Bonn, to give just one example, was able to considerably expand its funding income in the area of mathematics, giving a further boost to one of its thematic priorities. In this case, the University of Bonn, with a funding volume of € 10.1 million, was already, along with the TU Berlin, the institution with the highest DFG funding in the subject area of mathematics outside the Excellence Initiative. Acquisition of the Cluster of Excellence "Mathematics: Foundations, Models, Applications" enabled the university to more than double its funding volume in this subject area to € 21.7 million, and thus take a clear lead over the other universities[44].

There are also examples where the thematic priorities exhibited by a HEI's funding profile have been altered in some measure as a result of the Excellence Initiative: the TU Dresden and the University of Saarbrücken are cases in point. As shown by Table 3-1, in terms of chronological development, the TU Dresden has been a steady climber in the DFG Funding Ranking since 1996. But in recent years, with the Cluster of Excellence "From Cells to Tissues to Therapies" and the "International Graduate School for Biomedicine and Bioengineering", the TU Dresden has managed to extend its funding profile to include areas of the life sciences which were previously less prominent in this HEI's DFG funding.

The University of Saarbrücken was able to enhance its funding profile by means of the Cluster of Excellence "Multimodal Computing and Interaction" and the "Saarbrücken Graduate School of Computer Science". This gave a significant financial boost to the departments of computer science, computer linguistics and phonetics, primarily through the Cluster of Excellence acquired by the university. The University of Saarbrücken now receives approximately 30 percent of its total DFG funding in the areas of computer science, system and electrical engineering and thereby has a much clearer funding focus on these research fields[45]. The cross-references to the humanities and social sciences must also be highlighted here.

Comparison of Funding Profiles of the DFG, EU and Federal Government

As already elucidated in Chapter 2, there are broad differences between the various sources of third-party funding with regard to their subject-specific meaning – both in terms of absolute amounts and of the relative weight they take in each scientific discipline[46]. Research orientation plays a crucial role in determining these differences. The DFG is a funding institution strongly committed to basic research. By comparison, the other research funding bodies are more interested in questions of immediate commercial exploitation. The DFG is the largest single funder of externally financed research at HEIs (see Figure 2-1 in Chapter 2) and, in accordance with its statutes, it promotes science "in all its branches". At the same, this study of DFG funding only justifies generalised statements in regard to a HEI's "DFG profile", but not its overall funding profile. However, in view of the diverse range of DFG funding measures, the profile analyses presented above have conveyed a very accurate and versatile picture of profile formation and specific thematic priorities.

The following comparison with the funding structures of the EU (Sixth Framework Programme) and the federal government reinforces this picture. If one juxtaposes the 40 largest DFG funding recipients in the reporting period 2005 to 2007 (cf. Table 3-2) against the 40 HEIs with the highest funding volumes from the EU and federal government, then a high level of consistency is appar-

[44] The University of Bonn thereby has a share of almost 15 percent of the total funding allocated to 68 universities in the subject area of mathematics. The five universities with the highest funding already account for 39 percent, and the universities of the top ranking group (positions 1 to 10) account for about 57 percent of all DFG awards.

[45] Not including funding in the Excellence Initiative the share would be less than 18 percent of the total funding.

[46] Cf. Table 2-2 and summary in Section 2.9.

ent[47]. Altogether, 35 of the 40 HEIs with the most DFG awards are also counted among the 40 HEIs with the highest income from funding programmes of the federal government. As regards EU funding, the figure is 36 out of 40 HEIs. In general, it may be stated that the universities with the highest DFG funding are also among the institutions which are most active in terms of EU and federal government funding.

In anticipation of the subject-specific comparative analyses presented in Chapter 4, Figures 3-4 and 3-5 below serve primarily to elucidate the question of whether the different HEIs have generally comparable thematic profiles in connection with funding from the DFG, the EU and the federal government, or whether different priorities are apparent for each funding body. Moreover, the visual representations offer an initial overview of the institutions funded by the EU and the federal government in the individual funding areas.

Figure 3-4 shows the funding profiles of the 40 HEIs with the highest DFG funding volume based on their participation in the programmes of the federal government's direct R&D project funding. The federal government distinguishes between numerous funding priorities, which have been grouped into twelve funding areas for the purposes of this report[48]. In the HEI comparison, the TU Dresden received the highest overall funding[49]. More than half of the funds went to funding areas in the engineering sciences, but the TU Dresden also obtained a large share of its funds in the area of R&D in the health sector and in the group referred to as "other funding areas"[50]. Like the TU Dresden, the HEIs with the second and third largest total funding in the federal government's direct R&D project funding, the TH Aachen and the TU Munich, also put significant emphasis on the engineering sciences. The HEIs in Hamburg (U), Heidelberg (U) and Munich (LMU) are rather geared toward natural sciences and life sciences.

Similar to the visual representation of funding profiles derived from DFG funding, the spectrum of profiles visible in Figure 3-4, which is based on funding by the federal government, ranges from more technically inclined funding priorities at the bottom of the picture – such as energy or materials research – to areas with a strong focus on natural sciences and life sciences. The humanities and social sciences are of relatively low importance in the funding programmes of the federal government[51].

Information technology is the largest of the funding areas supported by the federal government. Almost €1 billion were provided for relevant research between 2005 and 2007 in the context of direct R&D project funding. With a total funding volume of about €180 million, almost 20 percent was allocated to HEIs. As shown in the diagram, the technical universities in Karlsruhe, Dresden and Aachen, stand out with relatively high shares of the federal funding.

By way of contrast, at the top left of the diagram there is a group of HEIs whose federally funded activities are characterised by biotechnological research, and there is a cluster of HEIs at the top right with high incomes from funding in the area of "R&D in the health sector". These are predominantly HEIs which have already been identified as life sciences oriented HEIs in the DFG analysis. The universities of Würzburg and Kiel as well as the FU and HU Berlin are prominent among the HEIs concentrat-

[47] Tables A-20 and A-23 in the appendix show the total amounts from the federal government and the EU received by those HEIs which acquired more than two million euros in the relevant funding programmes by funding area.

[48] The allocation of the individual funding fields and priorities identified in the federal government's budgetary system to the twelve funding areas and the four scientific disciplines recognised by the DFG is clarified in Table A-19 in the appendix.

[49] Cf. Table A-20 in the appendix.

[50] Out of the almost €14 million specified here as other funding areas, about €11 million is accounted for by the funding priority known as cross-disciplinary structural and innovative measures. More than half of this money (€6.3 million) was acquired, for instance, as part of the programme "Centres for Innovative Competence", the objective of which is to develop and expand outstanding research projects at East German HEIs and research institutions from their early stages into internationally renowned centres.

[51] See also Table 2-7 in Chapter 2.

Figure 3-4:
Funding profiles of HEIs: Subject map based on direct R&D project funding by the federal government

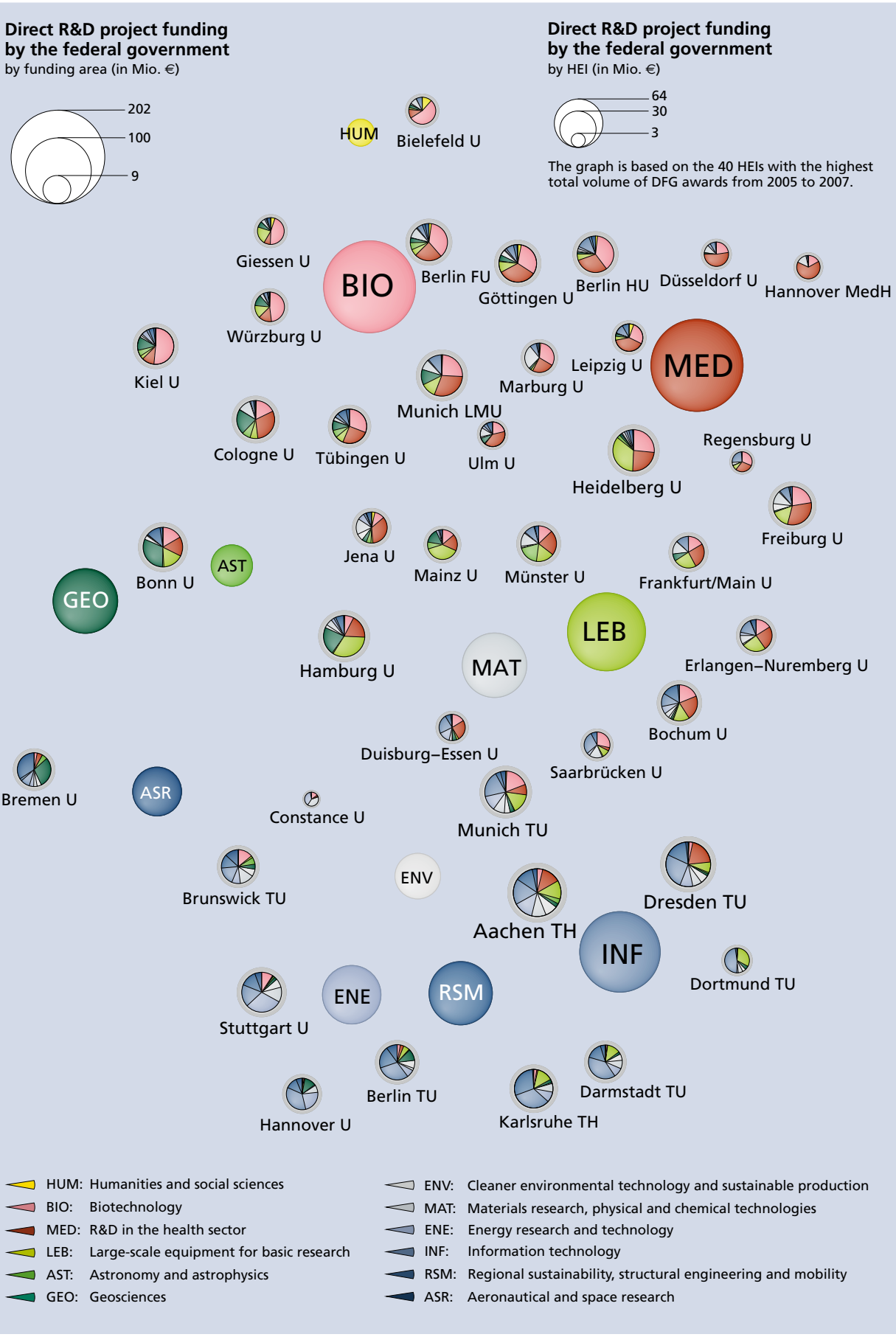
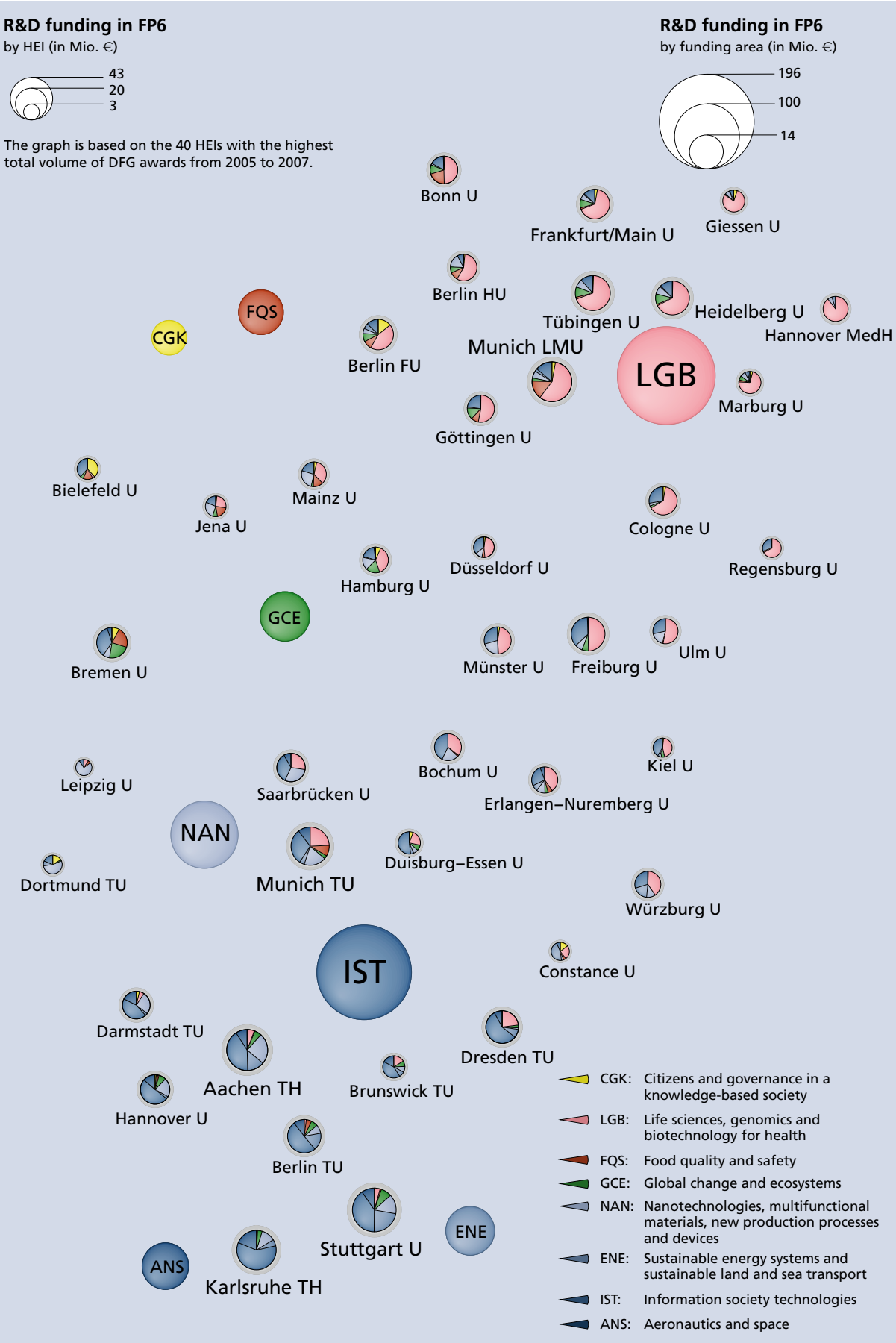


Figure 3-5:
Funding profiles of HEIs: Subject map based on R&D funding in the Sixth EU Framework Programme



ing on research in the field of biotechnology. There is a greater focus on medical research at the HEIs in Ulm and Freiburg and, of course, the Hannover Medical School which obtained about two-thirds of their federal funding for research in the funding area "R&D in the health sector".

Figure 3-5 examines the funding profiles of HEIs in the context of the Sixth EU Framework Programme. In FP6, the EU differentiates between three main blocks of activities and several thematic priorities, which have been arranged into eight funding areas for the purposes of the DFG Funding Ranking 2009 (cf. Section 2.5). The visual representation of HEI profiles is restricted to activities within these research fields, with the result that the familiar pattern from DFG and federal government funding appears again.

Funding areas belonging to the broad category of engineering sciences, such as information technology, nanotechnologies and materials research, are located at the bottom left of the picture. In the centre are fields associated with the natural sciences. A funding area with a social scientific focus "citizens and governance in a knowledge-based society" is located at the top left, though admittedly it has relatively less importance in terms of EU funding. The thematic priority with the largest funding volume, "life sciences, genomics and biotechnology for health", is located at the top right of the diagram and forms the core of another cluster with its focus on the life sciences.

The University of Stuttgart, with €54 million, received the highest funding volume of all German HEIs in FP6[52]. A large part of the funding was obtained in funding areas related to the engineering sciences. Besides the University of Stuttgart, other institutions represented with a large diameter in Figure 3-5 include the likewise technically oriented HEIs in Aachen and Karlsruhe and the life sciences oriented universities of Munich (LMU), Heidelberg, Freiburg and Tübingen, all of which were particularly active in terms of EU funding. In keeping with its funding profile based on DFG and federal government funding, the TU Munich has a broad profile geared toward the entire range of EU funding areas. The TH Karlsruhe, on the other hand, is focused to a notable degree on the funding area "information society technologies".

The Overall Picture is of Highly Differentiated Research Profiles

In conclusion, it is possible to make the general statement that the cross-disciplinary analyses which have been applied to a selection of HEIs – the 40 largest DFG funding recipients – illustrate admirably the diverse manner in which their externally funded research activities can be used for the representation of compact and nonetheless differentiated research profiles. The information thus offers clear and quick access to the thematic priorities of HEIs derived from their externally funded research projects.

The comparisons between the funding structures of the DFG, the federal government and the EU, which are further elaborated in the subject-specific sections below, reveal that the HEIs considered here have very similar funding profiles in all third-party funding markets. Whether in terms of the thematic content of project- and personnel-based DFG funding programmes, or the programme portfolios that result from funding provided by the EU or the federal government – in almost every case the same institutions are "closely related", because they have comparable thematic priorities and participate in the funding areas which are thematically relevant for them.

The thematic analyses described above have been restricted primarily to a highly aggregate representation of research activities on the level of subject and funding areas. Detailed analyses of the emphases placed by HEIs on the individual scientific disciplines funded by the DFG or on the different funding priorities of the EU and the federal government, along with comparative analyses of the funding structures of those funding bodies, are presented in sections 4.1 to 4.4 which focus on scientific disciplines.

3.2 Non-University Research Institutions

In the following is presented a short sketch of the research priorities of the four large research organisations – the Max Planck Society (MPS), the Leibniz

[52] Table A-23 in the appendix shows the total amounts from the EU received by those HEIs which acquired more than two million euros in the relevant funding areas of the Sixth Framework Programme, differentiated by funding area.

Association (WGL), the Fraunhofer Society (FhS) and the Helmholtz Association (HGF) – as derived from their participation in the programmes of the DFG, the federal government and the EU. Further details on the individual centres or institutes of the organisations cannot be given at this point. We refer to the federal government's detailed reports on science, research and innovation in Germany, and above all the Report of the Federal Government on Research and Innovation (Bundesbericht Forschung und Innovation), in which the activities of non-university research institutions are compiled and presented[53].

The funding figures presented below provide initial information about the third-party funding activities of the institutions considered here, although the analyses take place against the background that the intensity of third-party funding varies significantly between the scientific disciplines and that it is of variable importance particularly for non-university research institutions. In the overall view, the figures allow approximate conclusions regarding the specific research priorities of the institutions and in certain areas they may also be used as subject-specific indicators.

With this in mind, Table 3-4 shows the funding statements of the four main research organisations and of the other non-university research institutions within the scope of the DFG, EU and federal government funding programmes taken into account here. Tables A-14, A-21 and A-24 in the appendix also show the figures for the individual centres and institutes. Moreover, the following sections report on the non-university research institutions which are especially active in terms of third-party funding and on their research priorities.

Fraunhofer Society

As in Table 2-11, which underpinned our examination of the distribution of third-party funding by recipient type, Table 3-4 shows, to mention a first example, that compared with other non-university research institutions the Fraunhofer Society has particularly high funding volumes from the EU and the federal government, though its DFG awards are relatively low. The different orientations of the funding programmes of the DFG, the EU and federal government become apparent here once again: While DFG funding is focused on basic research, the EU and the federal government are much more interested in questions of application and commercial exploitation. These characteristics are evident in the funding profiles of the Fraunhofer Society.

The FhS works towards the goal of implementing research results in new and innovative products, methods and services by conducting contract research for industry, for service companies and for the public sector. Its organisational structure is thematically oriented. Thematically related institutes are arranged in the following seven research groups: information and communication technology, microelectronics, light and surfaces, production, materials and components, life sciences, and defence and security[54]. A glance at the funding figures reveals especially high funding volumes from the federal government in the funding area of information technology. In this category, the institutes of the FhS received a total of €134 million in the period from 2005 to 2007 as part of direct R&D project funding. This corresponds to a share of almost 15 percent of the total funding in this funding area. The FhS's remarkable success in attracting funds is also apparent in other funding programmes aimed at the natural and engineering sciences by the funding bodies considered here. On the other hand, the Fraunhofer Society acquired considerably less funding in the life sciences and, because of its special orientation, almost no income from humanities or social sciences related funding areas.

Max Planck Society

The Max Planck Society is the most prominent organisation in the two last-mentioned areas. In its almost 80 institutes the MPS conducts basic research in the life sciences, the humanities and social sciences as well as chemical-physical-technical sciences, which is reflected in its above-average funding volumes from the DFG. To highlight a single area,

[53] See BMBF (2008).

[54] For further information see Fraunhofer Society (2007).

the MPS received a total of €108 million in the life sciences over a period of three years, thereby capturing 40 percent of the total volume of awards allocated by the DFG to non-university research institutions in this area. The MPS acquired almost half of its total DFG funding volume in the life sciences.

In comparison to other non-university research institutions the MPS is also especially active in terms of EU and federal government funding for biotechnology and medical research. The DFG funding profile of the Max Planck Society is characterised as much as ever by the natural sciences, which account for 40 percent of the MPS's awards.

Helmholtz Association

Along with the MPS, the Helmholtz Association of German Research Centres is also especially active in the life sciences and the natural sciences. The HGF places a clear emphasis on funding areas in the life sciences, which account for 47 percent of its total DFG funding (€123 million in the reporting period), while the percentage shares of the natural and engineering sciences are 34 and 20 respectively. There are 15 national research centres for scientific-technical and biological-medical research affiliated with the Helmholtz Association. The HGF is divided into six cross-centre research fields: energy, earth and environment, health, key technologies, structure of matter, aeronautics, space and transport.

Leibniz Association

Compared to the other research organisations, the Leibniz Association has a somewhat broader range of subjects, as shown by the funding profiles presented in Table 3-4 for the project-based funding of the DFG, the EU, and the federal government. The Leibniz institutes

Table 3-4:
Funding statements for non-university research institutions:
Research funding by the DFG, the EU and the federal government by type of institution

Type of institution	DFG awards		Direct R&D project funding by the federal government			R&D funding in FP6		
	Scientific discipline profile	Mio. €	Mio. €	of which		Mio. €	of which	
				Thematic funding areas	Other funding areas		Thematic funding areas	Other funding areas
Max Planck Society		231.7	136.6	134.4	2.2	115.7	73.4	42.3
Fraunhofer Society		22.8	304.8	278.9	25.9	162.3	141.5	20.7
Helmholtz Association		123.0	258.4	248.1	10.3	237.7	137.6	100.2
Leibniz Association		158.5	136.8	115.7	21.2	70.9	42.9	28.0
Federal institutions		44.0	67.9	58.7	9.2	96.1	54.7	41.4
Other institutions		114.8	420.6	311.6	108.9	197.4	138.5	58.9
Total		**694.8**	**1,325.2**	**1,147.5**	**177.7**	**880.1**	**588.5**	**291.5**

Key to scientific disciplines:

Humanities and social sciences | Life sciences | Natural sciences | Engineering sciences

Notes:
The calls for proposals in the EU's FP6 refer to a period of four years (2002 to 2005). The funding totals shown here have been converted to a three-year period corresponding to the reporting years taken into account for funding by the DFG and the federal government.
The institutions considered here received a total of € 1,173.4 million in the EU's FP6.

Data basis and sources:
Deutsche Forschungsgemeinschaft (DFG): DFG awards 2005 to 2007.
Federal Ministry of Education and Research (BMBF): Direct R&D project funding by the federal government 2005 to 2007 (project database PROFI).
EU Office of the BMBF: German participations in the Sixth EU Framework Programme from 2002 (project data as of 02.06.2008).
Calculations by the DFG.

are thus active in thematically diverse research fields, though they are amalgamated in the following five thematically oriented sections: humanities and educational research; economics and social sciences; life sciences; mathematics, natural sciences and engineering; and environmental sciences. From this point of view, all four scientific disciplines are reflected in the association's DFG funding profile. The Leibniz institutes acquire almost half of their DFG funding volume in the natural sciences. Furthermore, a distinct relation to the humanities and social sciences can be detected in the DFG funding profile[55].

Federal Institutions and Other Institutions in the Public Sector

The funding profiles of the federal institutions and the other institutions in the non-university sector also have large shares of research funding in the humanities and social sciences. Non-university research institutions belonging neither to the four main research organisations nor to the federal institutions acquired more than one third of their €115 million in DFG awards in that scientific discipline. This is explained by the special composition of the institutions listed in this category. On the one hand, the numerous museums, collections, academies, libraries and archives are major recipients of third-party funding in the humanities and social sciences. On the other hand, it is primarily state institutions that benefit from funding in the engineering sciences and non-university hospitals in the life sciences.

The respective priorities of the institutions are further analysed in the subject-specific sections below and the different funding structures of the DFG, the EU and the federal government are subjected to a closer examination. As a tentative conclusion, it may be asserted that, based on the indicators and funding profiles shown in Table 3-4, it is possible to identify the specific orientations of non-university research institutions, and especially the four research organisations, toward practical or basic research and toward particular scientific disciplines. Altogether, the four main organisations considered here, along with the federal institutes, constitute the great majority of the non-university research institutions which received funding from the DFG, the EU and the federal government.

In the following section, the thematic priorities of regions and locations are examined with the help of cartographic representations. Special reference is given to research funding by the DFG, but the EU and federal government programmes relevant to this report will also be taken into account. This will give us an idea of how the respective funding measures are distributed across different regions when HEIs and non-university research institutions are considered together, and also industry and business in the case of the EU and the federal government.

3.3 Regional Analyses

The visual representations in this section will help us to pursue the question of which regions are especially successful in acquiring third-party funds from the DFG, the EU and the federal government. The additional differentiation by subject area or funding area illustrates the thematic priorities set in these regions.

Regional Distribution of DFG Awards

The regional distribution of DFG awards emerges from Figure 3-6, which shows those regions with a funding volume of €10 million or greater. The pictured locations incorporate almost the entire volume of DFG awards allocated to research institutions in Germany. The visual representation is based on funding to the amount of €5.8 billion (period 2005 to 2007). First of all, Berlin and Munich stand out as the regions with the most DFG awards. The HEIs and non-university research institutions in Berlin received a funding volume of over €520 million, while the city and region of Munich together acquired an equivalent amount.

The "ABC region" of Aachen-Bonn-Cologne, is also a large funding recipient.

[55] In regard to DFG funding, it must be emphasized that, compared to other non-university research institutions, the institutions of the Leibniz Association may also participate in the programmes of the DFG within the main scope of the institute's work for which institution-based funding is provided, as they partake in the required budgetary increase for the DFG. The states and federal government each transfer 2.5 percent of their institutional support for the participating Leibniz institutions to the budget of the DFG. For further details, see the Agreement on Establishment of the AV-WGL published by the Joint Science Conference (2009).

The DFG awarded a total of €557 million for research institutions in this region, including the region of Düren, which is home to the Jülich Research Centre (FZJ). Special mention should be made of the close cooperation between the FZJ and the RWTH Aachen, which will be consolidated in future by the establishment of the Jülich Aachen Research Alliance (JARA) partnership model. The Alliance is supposed to begin working on projects in the areas of neuroscience, information technology and simulation science. Developments of this type are increasingly common. Collaborations are being formed above all by institutions with similar profiles, which are located in the same or nearby regions. In this way, they are promoting an even greater spatial concentration of common expertise. In some cases they are also gaining access to research areas which are necessary to their work, but not fully developed in their own institution.

Aside from the ABC region, several important metropolitan areas also deserve to be mentioned, including Rhine-Neckar, Frankfurt-Rhine-Main, Rhine-Ruhr and Hannover-Brunswick-Göttingen. The South German regions of Mannheim-Heidelberg-Karlsruhe and Stuttgart-Tübingen-Ulm each managed to acquire more than €330 million in funding. The research institutions in Hannover, Brunswick and Göttingen collectively received over €420 million, and those in Bochum, Dortmund, Duisburg and Essen had a funding income of €213 million.

Regional Research Networks are Gaining in Importance

To give a further example of regional cooperative structures, reference should be made to the planned cooperation between HEIs, in particular in those locations just mentioned. On the one hand, the University Alliance Metropolis Ruhr (UAMR) has been formed by the universities of Bochum, Dortmund and Duisburg-Essen, and on the other hand, there is the partnership of the TU Brunswick, the TU Clausthal and the Leibniz University of Hannover in the Technical University of Lower Saxony (NTH). With the establishment of the Kulturwissenschaftliches Institut Essen, an institute for advanced study in the humanities, the UAMR has turned its attention to the humanities and cultural sciences. Other projects set priorities primarily in the engineering sciences, information technology and electrical engineering. The NTH intends to incorporate subject areas such as architecture, computer science and the natural sciences, and the first major joint project is in the area of computer science.

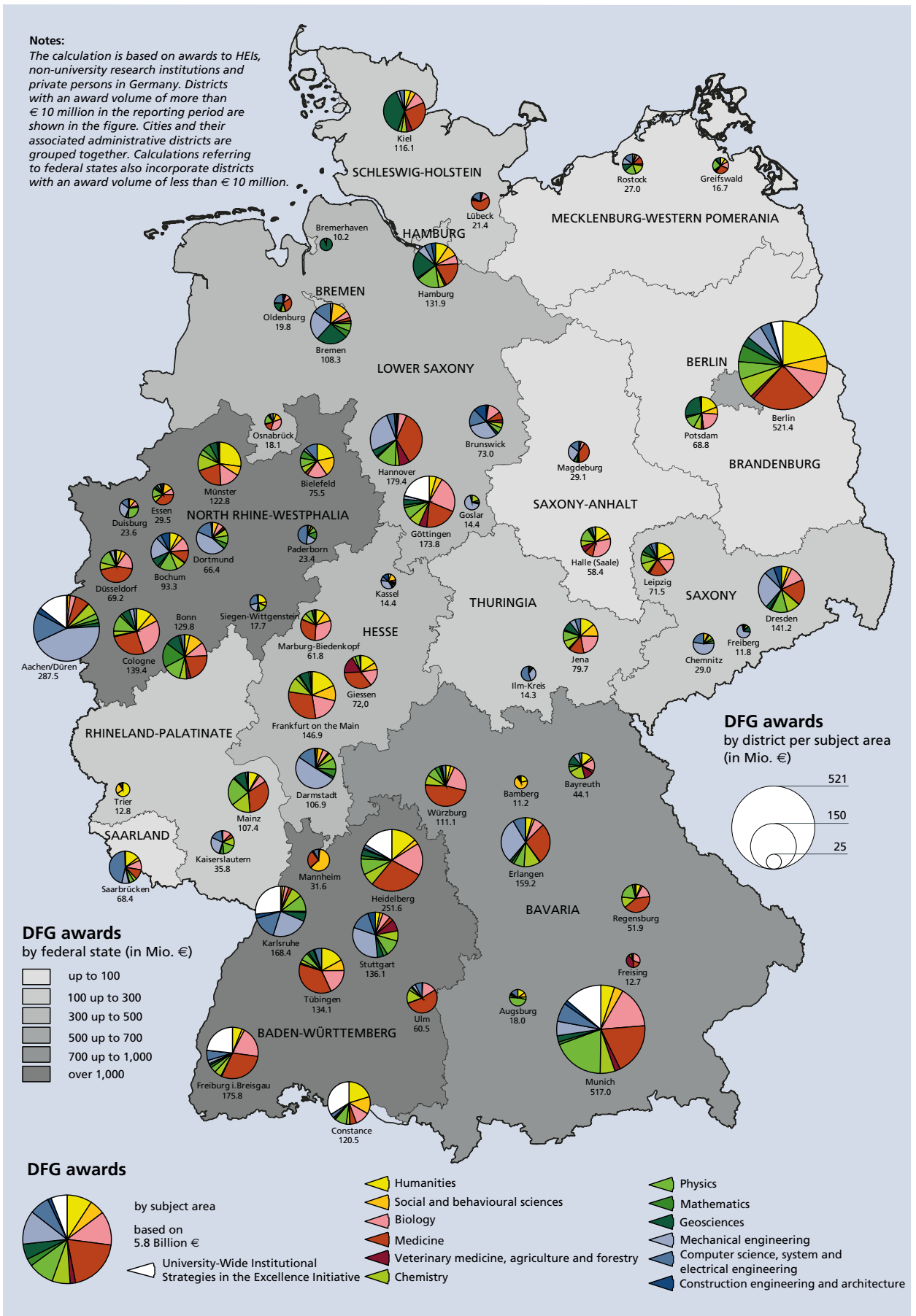
The representation of the research networks between HEIs and non-university research institutions is a central focus of the sections below which deal specifically with scientific disciplines. By visualising the networking of individual institutions, Chapter 4 presents a detailed view of the formation of networks within and between various research locations as a result of the DFG's Coordinated Programmes.

Thematic Priorities in the Regions

An important addition to the total volumes per region, which can be read from Figure 3-6, is offered by the presentation of the same awards differentiated by subject area. Similar to the profile analyses of selected HEIs presented above, it is possible to draw conclusions regarding DFG-funded thematic priorities in the corresponding regions. Comparison with the figures for DFG awards stated in Table 3-2 shows that in certain regions, it is almost exclusively the universities located in those regions that are recipients of DFG funding. Examples of regions in which the total amount awarded by the DFG is only slightly higher than the amount allocated to local universities include Würzburg and Erlangen-Nuremberg. There are comparatively few non-university research institutions in these regions and the local universities are virtually the only DFG funding recipients. The region's profile corresponds to that of the universities shown above in Figure 3-3.

Berlin-Potsdam may be highlighted here as an interesting example of a regional research profile, in this case heavily influenced by the life sciences and natural sciences, but also giving a notably high level of coverage to the humanities. This profile was significantly enhanced as a consequence of funding decisions in the Excellence Initiative for the humanities-oriented Clusters of Excellence and Graduate Schools at the

Figure 3-6:
Regional distribution of DFG awards 2005 to 2007 by subject area



universities FU and HU Berlin. The North German city states of Bremen and Hamburg and their surrounding regions, by contrast, are clearly focused on the geosciences. The three technical universities in the "Saxony Triangle", Dresden, Freiberg, and Chemnitz, together with their neighbouring non-university research institutions, shape the region's research profile primarily through the areas of mechanical engineering, computer science, system and electrical engineering.

Regional Distribution of Funding from the EU and the Federal Government

Visual representations based on DFG grants show clearly how universities and, to a lesser extent, non-university research institutions shape a region's profile. However, business- and industry-based research institutions are an important factor in the regional distribution of funding in the EU and federal government programmes incorporated in the Funding Ranking 2009. As shown by Table 2-11, almost one third of the R&D project funding provided by the EU and the federal government and incorporated here went to institutions other than HEIs and the non-university research institutions belonging to the large associations. A comparison with the DFG analysis presented above therefore gives us an opportunity to illuminate the specific potential that could be realised by these regions through cooperation and networking between science and business. As with the HEI profile analyses described above, the funding area classification systems implemented by the EU and the federal government also form the basis here.

High Level of Consistency in Regional Distribution of Funding from Different Funding Sources

An initial agreement with the DFG analysis is indicated by the fact that the research locations of Berlin and Munich play a leading role. As revealed by Figure 2-7 in Chapter 2, the federal government provided a total of €400 million between 2005 and 2007 for research projects in the city and region of Munich within the scope of the R&D project funding taken into consideration here. The capital Berlin received about €340 million. Other regions that received large volumes of funding were Stuttgart, Freiburg, Heidelberg, Hamburg, Dresden and the city and district of Karlsruhe. In a broader sense of the term "region", as seen above with DFG funding, the "ABC region" of Aachen-Bonn-Cologne has also proved highly research intensive in terms of federal and EU funding. The same applies to the Swabian network in Southeast Germany based around Stuttgart, Reutlingen, Esslingen, Ulm and the Ostalb region.

R&D funding in the Sixth EU Framework Programme produces a very similar picture with regard to federal funding, both in terms of regional distribution and of differentiation by funding areas. As shown already by Figure 2-10 in Chapter 2, the funding measures of the EU are chiefly of relevance to thematic areas which are a part of the engineering sciences. As a result, an even stronger concentration on these thematic priorities is evident in the regional distribution.

A glance at the thematic profiles shows that the two leading research locations, Berlin and Munich, benefit strongly from the largest of the federal government's research programmes, which focuses on information technology. The funding area of information technology as a whole is characterised by institutional recipients which are not HEIs. The above-mentioned "Swabian network", in other words the metropolitan region of Stuttgart, is also strongly focused on this field. In Bavaria, information technology accounts for a large proportion of the federally funded research in Erlangen and Nuremberg. In Rhineland-Palatinate, Saarland and Hesse, research institutions in the districts of Saarbrücken, Kaiserslautern and Darmstadt also specialise in this field. In Dresden, apart from the university, there are also Fraunhofer institutes and industrial enterprises involved with research in this funding area. Moreover, a large number of smaller locations have profiles with a clear orientation towards information technology.

Other locations that may be highlighted include, for example, Kiel, Göttingen, Würzburg, Bielefeld and above all Heidelberg, for all of which a strong emphasis on the funding area of biotechnology has been documented. These few examples already point out the specific opportunities available to individual regions and locations for cooperation between science and business. Altogether, the

tables and graphs relating to the regional funding structures of the DFG, the EU and the federal government, provide multifaceted information on the resources available to the regions, on their research institutions and industrial enterprises active in research, and on the thematic priorities set by the different locations.

On the basis of the analyses and individual examples presented above, it is possible to assert that not only the study of individual institutions, but also of the regions in which they are embedded is of central importance. This aspect will be treated once more in the sections below which deal specifically with scientific disciplines. Above all, the cooperative relationships between HEIs and non-university research institutions within and between different regions will be examined in detail.

4 Funding Structures by Scientific Disciplines and Research Fields

Building upon the general overview of research regions and institutions in the previous chapter, there now follows a detailed subject-specific analysis, differentiated by four scientific disciplines. The focus of attention will be on data relating to third-party funding by the DFG (differentiated by 48 research fields), the federal government (twelve fields) and the EU (eight fields). Moreover, consideration will be given to figures on personnel funding by the ERC, the AvH and the DAAD, and data concerning the number of DFG reviewers and DFG Review Board members per institution will also be taken into account. Finally, in the section entitled "Engineering Sciences", there is a separate report on participation in the federal funding measures administered by the AiF.

Allowing for Interdisciplinary Research and Shifting Subject Boundaries

As stressed before in the note on methodology, it must be borne in mind that the *borders between scientific disciplines are often difficult to define*. Many subjects can only be conditionally assigned to a specific scientific discipline. An example of this can be seen in the life sciences in the field of biomedical basic research, but also in subjects like physics and chemistry which, being classic basic subjects, influence the research conducted in many different fields. Accordingly, the analyses presented here reflect only a core of the research carried out in particular thematic funding areas or in specific scientific disciplines. Neighbouring research fields are grouped around this core and have different types of influence – with varying emphases from institution to institution – on the research carried out in each scientific discipline.

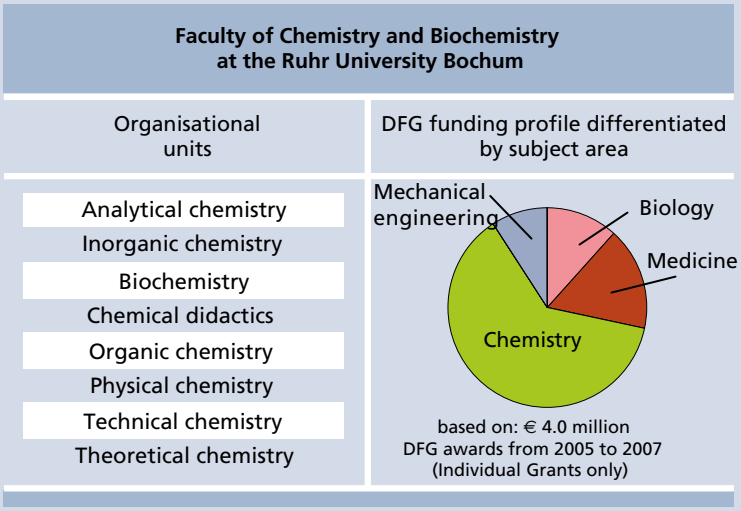
These issues can be clarified with the aid of the case study shown in Figure 4-1. This graph sketches the departmental units of the *Faculty of Chemistry and Biochemistry at the Ruhr University Bochum*, which are juxtaposed with its DFG funding profile in the context of the Individual Grants Programme. The faculty's fields of activity range from theoretical chemistry, to biochemistry and physical chemistry, to technical chemistry. In the reporting period 2005 to 2007, the total amount of DFG awards allocated to these departmental units was €4 million. As shown in the image, the DFG-funded projects conducted by this faculty cover a broad thematic spectrum. When differentiated by the four scientific disciplines recognised by the DFG, almost two-thirds of the awards are accounted for by the natural sciences and, as might be expected, these were almost exclusively in the subject area of chemistry (62 percent). But significant shares also went to the subject areas of medicine (17 percent) and biology (12 percent), which belong to the life sciences, and to materials science or thermal and process engineering (9 percent), which are assigned to the engineering sciences.

The image accordingly demonstrates that from the subject-specific statistics presented in this report, one cannot necessarily draw conclusions regarding the performance of specific departments and institutions. Just as the faculty considered here covers several DFG subject areas, the projects approved in a particular sub-

Funding Ranking 2009. DFG, Deutsche Forschungsgemeinschaft

ISBN: 978–3-527-32746-1

Figure 4-1:
Case study for interdisciplinary research: Funding profile of the Faculty of Chemistry and Biochemistry at the Ruhr University Bochum based on DFG awards



ject area are often based upon DFG proposals from various institutes, sometimes with widely divergent thematic orientations.

This case study reveals that, in view of the indicators considered here, the credit for an institution's "third-party funding success" is often due to several scientists and academics working in different research fields. The corresponding research activities are conducted without regard for the boundaries between institutions or subject areas. Particularly in interdisciplinary research fields with several points of contact to neighbouring disciplines, it is difficult *to assign the performances that can be read from these indicators to a well-defined group of thematically relevant faculties, institutes or organisational units*. In the interpretation of the findings presented below, the "relationships" within and between the scientific disciplines as described in the profile analyses in the previous chapter play an important role. The analyses are supposed to show the thematic emphases that characterise higher education institutions irrespective of organisational boundaries. There is no intention to offer a one-to-one assignment of the awards in a subject area of the Deutsche Forschungsgemeinschaft to the researchers working in a department or institute with a corresponding thematic orientation.

Funding Statements of Research Institutions

With a view to the indicators of third-party funding mentioned in the introduction, we will turn our attention first of all to the funding statements for the various types of funding recipient – HEIs and non-university research institutions which are active in terms of third-party funding. The figures are based on the programmes of the DFG, the EU and the federal government presented in the foregoing chapters.

Network Structures between HEIs and Non-University Research Institutions

As regards cooperation between HEIs and non-university research institutions, there follows an examination of network formation at the various research locations. This will enable a visualisation of regional priorities and will show which institutions within a particular region participated in DFG Coordinated Programmes related to specific scientific disciplines. The primary focus of the network analysis is on showing to what extent and in what manner DFG-funded programmes were used for purposes of inter-institutional cooperation. This question is of particular interest in the context of the funding ranking, because apart from the internal research activities that can be read from various indicators, it is also possible to discern with what success

scientists at HEIs manage to involve partners from neighbouring institutions in joint research projects[56].

Thematic Priorities of Higher Education Institutions

The principal component of the analyses is provided by findings derived from the main indicator, DFG awards, concerning the 40 HEIs with the highest volume of grants in the different scientific disciplines. The ranking order of the HEIs is summarised here in an absolute and relative form, which is to say, relative to the number of professors working at a HEI in the respective scientific discipline. The tables also provide a comparison of various subject areas. There is then a visual representation of the thematic funding profiles derived from this data in the form of a map of subjects. In addition to the schedular overviews, which present the activities of individual institutions in a quantified form, these compact visualisations permit highly differentiated statements regarding the extent to which individual scientific disciplines influence a university's profile.

Comparison of Funding Structures by Funding Source

This is followed by a glance at the figures for the third-party funding received by HEIs and non-university research institutions from the EU and the federal government, which is facilitated by individual representations for selected funding areas. Most importantly, the profiles of the HEIs with the highest funding incomes in neighbouring DFG funding areas will be placed side by side for purposes of comparison.

The visualisations and analyses within the scientific disciplines concentrate on the principal findings of the report and on selected case studies. The presentation of the results also takes into account specific cross-references between the various scientific disciplines.

4.1 Humanities and Social Sciences

The humanities and social sciences account for more than one third of the professors working in all German research institutions. The number of HEIs and non-university research institutions conducting research in this area is also particularly large when compared to other scientific disciplines[57]. Although externally funded research in the humanities and social sciences plays a rather subordinate role when compared to other scientific disciplines[58], the market for funds for basic and practical research is also highly differentiated in this area. In the social sciences, to mention a single example, studies and reviews are often commissioned by state ministries and local authorities, unions, churches and foundations as well as business and industry, in areas such as labour market and occupational research, school research, market research or accompanying research in the social and health sectors.

Funding Statements of Research Institutions

A glance at Section 2.1 and Table 4-1, which contain the funding statements of research institutions for funding sources such as the DFG, the EU and federal government, reveals that the DFG is the largest individual funding body in the humanities and social sciences. In the period from 2005 to 2007, the DFG allocated over € 850 million in awards to German institutions for subjects in this scientific discipline. DFG funding is thereby one of the principal sources of income for externally funded research in the humanities and social sciences. While the DFG, in accordance with its statutes, promotes science "in all its branches", the EU and

[56] As the question of regionally concentrated clusters is of primary interest here, the focus of the network analysis is on DFG funding programmes which apply the "location principle". In other words, aside from internal university cooperation, the integration of other HEIs and non-university research institutions located in the same place or the surrounding region is of particular interest. The network analyses cover all institutions which acquired funding from 2005 to 2007 in the following programmes: Clusters of Excellence, DFG Research Centres, Collaborative Research Centres (incl. programme variants), Research Units and Graduate Schools. The analysis excludes the Priority Programme, which is geared towards Germany-wide collaborations, and Research Training Groups, because in this case the university submitting the proposal is generally the sole funding recipient.

[57] This is shown not least by the total number of HEIs that received DFG funding for projects in the humanities and social sciences, as specified in Table 4-2. A total of 124 HEIs, including numerous universities of applied sciences and colleges of theology, education and art managed to obtain DFG funds during this reporting period. This figure is much higher than the other scientific disciplines.

[58] Cf. especially the remarks in Section 2.9 and the note on the personnel and financial structures of the scientific disciplines in the Table 2-1 and 2-2 in Chapter 2.

Table 4-1:
Funding statements for research institutions: Research funding by the DFG, the EU and the federal government by type of institution in the humanities and social sciences

Type of institution	DFG awards		Direct R&D project funding by the federal government		R&D funding in FP6	
	Mio. €	%	Mio. €	%	Mio. €	%
Higher education institutions	**769.4**	**90.4**	**13.1**	**34.8**	**14.6**	**65.0**
Non-university research institutions	**81.5**	**9.6**	**24.7**	**65.2**	**7.8**	**35.0**
Max Planck Society	7.5	0.9	0.2	0.5	0.8	3.7
Fraunhofer Society	0.2	0.0	0.5	1.4	0.5	2.3
Helmholtz Association	0.0	0.0	0.4	1.0	0.3	1.2
Leibniz Association	21.0	2.5	3.2	8.6	3.0	13.2
Federal institutions	10.1	1.2	9.5	25.2	0.2	0.9
Other institutions	42.7	5.0	10.8	28.5	3.1	13.8
Institutions overall	**850.9**	**100.0**	**37.8**	**100.0**	**22.5**	**100.0**

Notes:
The calls for proposals in the EU's FP6 refer to a period of four years (2002 to 2005). The funding totals shown here have been converted to a three-year period corresponding to the reporting years taken into account for funding by the DFG and the federal government. The funding recipients considered here received a total of € 29.9 million in the EU's FP6.

Data basis and sources:
Deutsche Forschungsgemeinschaft (DFG): DFG awards 2005 to 2007.
Federal Ministry of Education and Research (BMBF): Direct R&D project funding by the federal government 2005 to 2007 (project database PROFI).
EU Office of the BMBF: German participations in the Sixth EU Framework Programme from 2002 (project data as of 02.06.2008).
Calculations by the DFG.

the federal government by contrast are more focused on the "hard sciences" or on application-oriented research[59]. This is also evidenced by the comparatively low funding volumes received by HEIs and non-university research institutions in Germany for the humanities and social sciences in the federal government's direct R&D project funding (almost € 38 million in the period 2005 to 2007) and in the R&D funding provided in the Sixth EU Framework Programme (almost € 23 million when converted to a three-year period).

The DFG has a pronounced focus on the promotion of research at HEIs. As shown by Table 4-1, the DFG allocated over € 769 million to HEIs in the humanities and social sciences. More than 90 percent of the DFG awards for German institutions went to HEIs, universities in particular, and almost 10 percent went to non-university research institutions. On the other hand, the latter received higher shares of the total funding volume allocated to HEIs and non-university research institutions in the federal government's direct R&D project funding and in the Sixth EU Framework Programme, with 65 percent and 35 percent respectively.

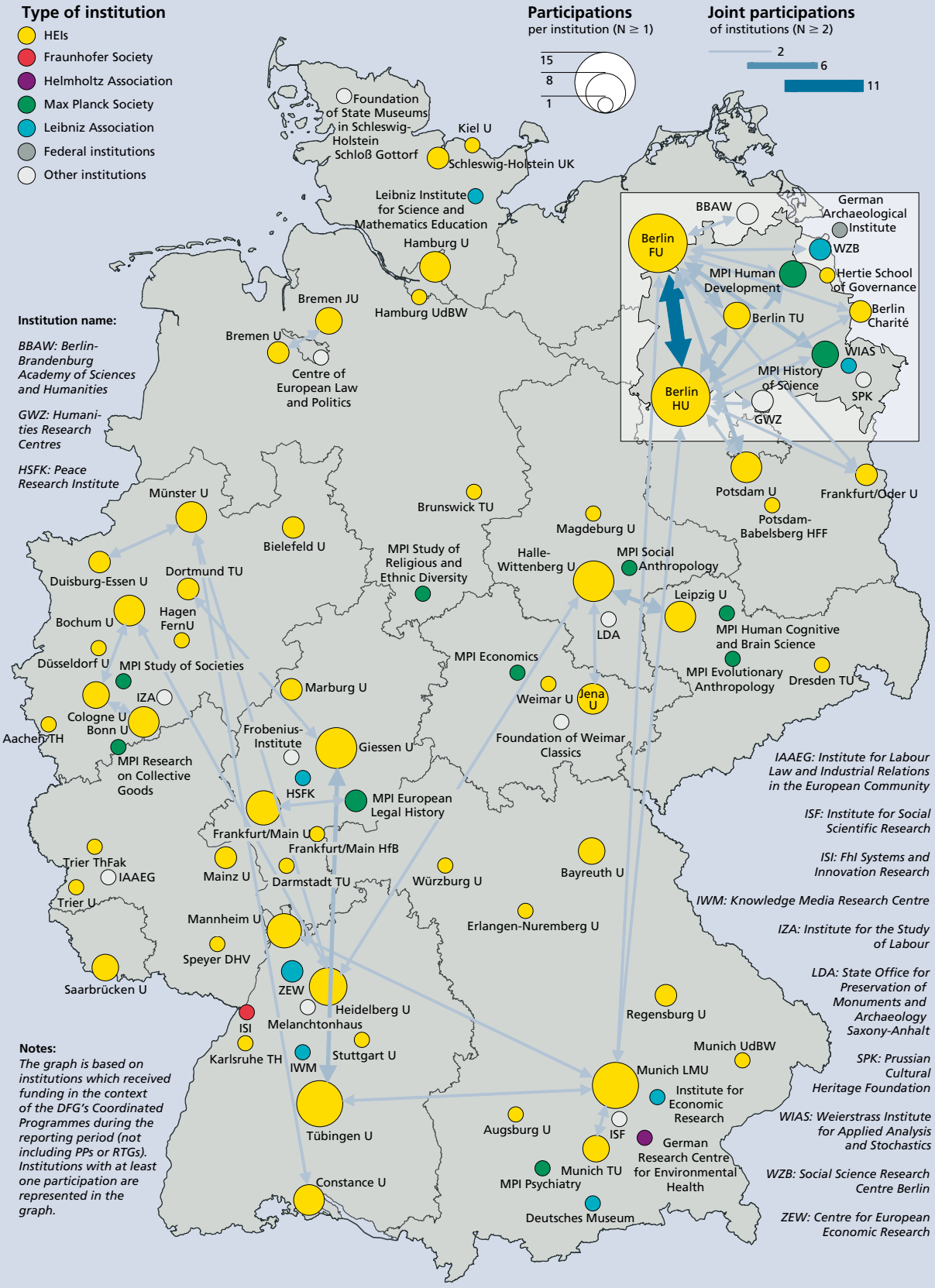
With regard to the non-university research institutions, the Leibniz Association is the most prominent. In this case, its was especially the Leibniz institutes grouped in the sections humanities and educational research and economics and social sciences[60] which managed to obtain third-party funding from the DFG, the EU and the federal government. The institutes of the Leibniz Association thus received € 21 million from the DFG in this scientific discipline and are also among the most active non-university research institutions in terms of awards from the other funding sources.

It is also noticeable in the humanities and social sciences that compared to the four large research organisations a large volume of funding was attracted by federal institutions and "other non-university research institutions". The main feder-

[59] See also the comments on the funding structures of the EU and federal government in Chapter 2.

[60] These include over 30 institutions, such as the Leibniz Institute for the Social Sciences (GESIS) or the Social Science Research Centre Berlin (WZB), which specialize in social-scientific research, or those institutes which focus on economics (for example, the ifo Institute in Munich, ZEW in Mannheim, the DIW in Berlin, the IWH in Halle, the RWI in Essen and the IfW in Kiel). Further information on the institutes grouped in the various sections and their respective fields of activity can be found on the Leibniz Association's website (www.wgl.de).

Figure 4-2:
Participations of research institutions in the DFG's Coordinated Programmes and the resulting cooperative relationships in the humanities and social sciences



al institutions which participated in DFG programmes were the German Archaeological Institute (DAI) and the Foundation of German Humanities Institutes Abroad (DGIA). The group of other non-university research institutions primarily includes academies, libraries and archives as well as museums and collections. Examples of larger DFG funding recipients would include the Prussian Cultural Heritage Foundation and the Berlin-Brandenburg Academy of Sciences and Humanities (BBAW), but also the Humanities Research Centres in Berlin (Geisteswissenschaftliche Zentren Berlin, GWZ) or the Humanities Research Centre for the History and Culture of East Central Europe (Geisteswissenschaftliches Zentrum Geschichte und Kultur Ostmitteleuropas, GWZO)[61].

Tables A-14, A-21 and A-24 in the appendix give further information on the funding allocated by the DFG, the EU and the federal government to non-university research institutions. They report the figures presented in Table 4-1 also for individual centres, institutes and institutions. On the whole, the funding statements presented here allow us to conclude that besides the non-university research institutions that actively compete for third-party funding and other high-profile institutions, it is above all HEIs that are active in the humanities and social sciences. This is also demonstrated by the following analysis of the institutions participating in the DFG's Coordinated Programmes and the resulting cooperative relationships.

Network Structures between HEIs and Non-University Research Institutions

Figure 4-2 illustrates the network structures between the various research institutions in the humanities and social sciences. The graph includes all HEIs and non-university research institutions that received awards for DFG-funded Research Units, Collaborative Research Centres, Graduate Schools and Clusters of Excellence during the reporting period 2005 to 2007. The diameters of the circles symbolise the number of participations in these programmes, and connecting lines between institutions indicate two or more joint participations[62].

The Berlin area stands out distinctly because of an extremely dense research landscape, with a high number of institutions participating in local and trans-regional network programmes funded by the DFG. The three large Berlin universities – the FU, HU and TU Berlin – are linked to each other through a multiplicity of joint participations in humanities and social sciences related programmes. Moreover, intensive cooperation structures have been established between the Berlin universities and some non-university research institutions located in Berlin or farther afield, which were also prominent in the Excellence Initiative. For instance, working on the projects of the Cluster of Excellence "Languages of Emotion"[63] hosted by the FU Berlin, along with researchers from the HU Berlin and the University of Frankfurt/Oder, there are also several non-university research institutions including the MPI for Human Development (MPI für Bildungsforschung), the MPI for Human Cognitive and Brain Sciences (MPI für Kognitions- und Neurowissenschaften), the MPI for Evolutionary Anthropology and the Centre for Literature and Cultural Research (Zentrum für Literatur- und Kulturforschung).

Table A-12 in the appendix expresses the information visualised here once again in quantified form by stating the number of participations in DFG-funded Coordinated Programmes per HEI. While Figure 4-2 incorporates only the most intensive cooperation structures (at least two joint participations), this data shows that aside from the researchers at the two Berlin universities (FU and HU),

[61] These humanities research centres were established in 1992 following the dissolution of the GDR's Humanities Research Institute of the Academy of Science. They are supported by the states of Berlin, Brandenburg and Saxony, and the DFG provides supplementary project funding. A total of five GWZs received € 18.5 million from the DFG between 2005 and 2007 (Berlin: € 8.6 million, Potsdam: € 5.2 million, Leipzig: € 4.7 million). Added to this, there were small volumes of funding requested by researchers at these centres for individual projects (cf. Table A-14 in the appendix).

[62] Further information on the network analyses presented here and details regarding the data basis and methodology can be found in Section A.4 in the appendix.

[63] The two Clusters of Excellence "Languages of Emotion" and "Topoi. The Formation and Transformation of Space and Knowledge in Ancient Civilizations" at the FU Berlin are intended to be internationally visible and competitive research and training institutions, which enable necessary research networking and cooperation.

Table 4-2:
Ranking analysis of the 40 HEIs with the highest volume of DFG awards 2005 to 2007 in the humanities and social sciences

Higher education institution	DFG awards in total							of which	
	Absolute funding amounts					Funding amounts relative to size		2005 up to 2007 not incl. ExIn	1st & 2nd funding line of the ExIn for 3 years
	Total			of which		DFG awards per prof.[3]	Number of professors in 2006		
				HUM[1]	SOC[2]				
	Position	Mio. €	cum. %	Mio. €	Mio. €	Tsd. € per prof.	No.	Mio. €	Mio. €
Berlin FU	1	67.6	8.8	54.7	12.8	293.5	230	37.8	29.8
Berlin HU	2	45.9	14.8	30.8	15.2	199.9	230	34.8	11.1
Münster U	3	41.7	20.2	33.1	8.6	180.6	231	19.9	21.8
Constance U	4	40.0	25.4	24.3	15.7	381.3	105	22.7	17.3
Heidelberg U	5	39.5	30.5	33.3	6.2	282.3	140	17.7	21.8
Munich LMU	6	35.1	35.1	21.0	14.1	113.7	309	32.4	2.7
Frankfurt/Main U	7	34.3	39.5	22.6	11.7	127.6	269	21.3	12.9
Tübingen U	8	33.0	43.8	22.9	10.1	184.1	179	31.3	1.6
Bielefeld U	9	30.0	47.7	16.0	13.9	197.3	152	20.2	9.8
Cologne U	10	23.2	50.7	15.2	8.0	91.0	255	23.2	0.0
Jena U	11	20.1	53.3	10.9	9.2	127.1	158	20.1	0.0
Hamburg U	12	16.9	55.5	9.9	7.0	49.5	342	15.2	1.7
Bonn U	13	16.4	57.7	4.3	12.1	98.8	166	9.9	6.5
Giessen U	14	16.2	59.8	11.3	4.9	110.7	147	13.0	3.2
Mannheim U	15	16.2	61.9	0.3	15.9	169.1	96	12.9	3.3
Göttingen U	16	13.8	63.7	7.7	6.0	86.4	159	13.8	0.0
Freiburg U	17	12.7	65.3	10.6	2.1	96.5	132	12.7	0.0
Bremen U	18	12.6	67.0	1.6	11.0	78.6	160	10.5	2.1
Marburg U	19	12.3	68.6	6.0	6.4	76.3	162	12.3	0.0
Halle-Wittenberg U	20	12.3	70.2	8.8	3.5	91.3	134	12.3	0.0
Saarbrücken U	21	12.2	71.7	10.0	2.2	125.7	97	8.5	3.7
Potsdam U	22	11.9	73.3	7.1	4.9	93.1	128	11.8	0.1
Bochum U	23	11.2	74.7	7.1	4.1	61.6	182	10.3	0.8
Trier U	24	11.0	76.2	7.9	3.0	93.2	118	11.0	0.0
Leipzig U	25	10.8	77.6	6.4	4.4	55.1	197	10.8	0.0
Mainz U	26	10.2	78.9	8.6	1.6	51.8	197	10.2	0.0
Bamberg U	27	10.0	80.2	2.5	7.6	92.7	108	10.0	0.0
Erlangen-Nuremberg U	28	10.0	81.5	7.2	2.8	61.8	162	10.0	0.0
Dresden TU	29	9.7	82.8	6.1	3.6	63.9	152	9.7	0.0
Kiel U	30	9.4	84.0	5.7	3.8	69.1	137	7.0	2.5
Würzburg U	31	7.6	85.0	4.1	3.5	66.3	115	7.3	0.3
Bayreuth U	32	7.6	86.0	6.2	1.4	94.8	80	4.7	2.9
Düsseldorf U	33	6.8	86.8	3.5	3.2	75.0	90	6.8	0.0
Duisburg-Essen U	34	6.7	87.7	0.7	5.9	37.0	180	6.7	0.0
Stuttgart U	35	6.6	88.6	4.3	2.3	161.4	41	5.5	1.1
Darmstadt TU	36	6.1	89.4	1.5	4.6	102.9	59	4.5	1.6
Siegen U	37	5.5	90.1	4.1	1.4	44.3	124	5.5	0.0
Aachen TH	38	5.4	90.8	1.7	3.7	98.4	55	3.3	2.1
Berlin TU	39	5.2	91.4	3.0	2.3	78.7	67	4.4	0.9
Augsburg U	40	4.2	92.0	2.7	1.4	40.0	104	4.2	0.0
Position 1 to 40 overall	**01-40**	**707.8**	**92.0**	**445.7**	**262.1**	**–**	**6,144**	**546.0**	**161.8**
Other HEIs	**41-124**	**61.6**	**8.0**	**28.2**	**33.5**	**–**	**2,588**	**59.2**	**2.4**
HEIs overall	**01-124**	**769.4**	**100.0**	**473.9**	**295.6**	**88.1**	**8,732**	**605.2**	**164.2**
Based on: No. of HEIs		**124**		**103**	**89**	**124 / 95**	**95**	**123**	**29**

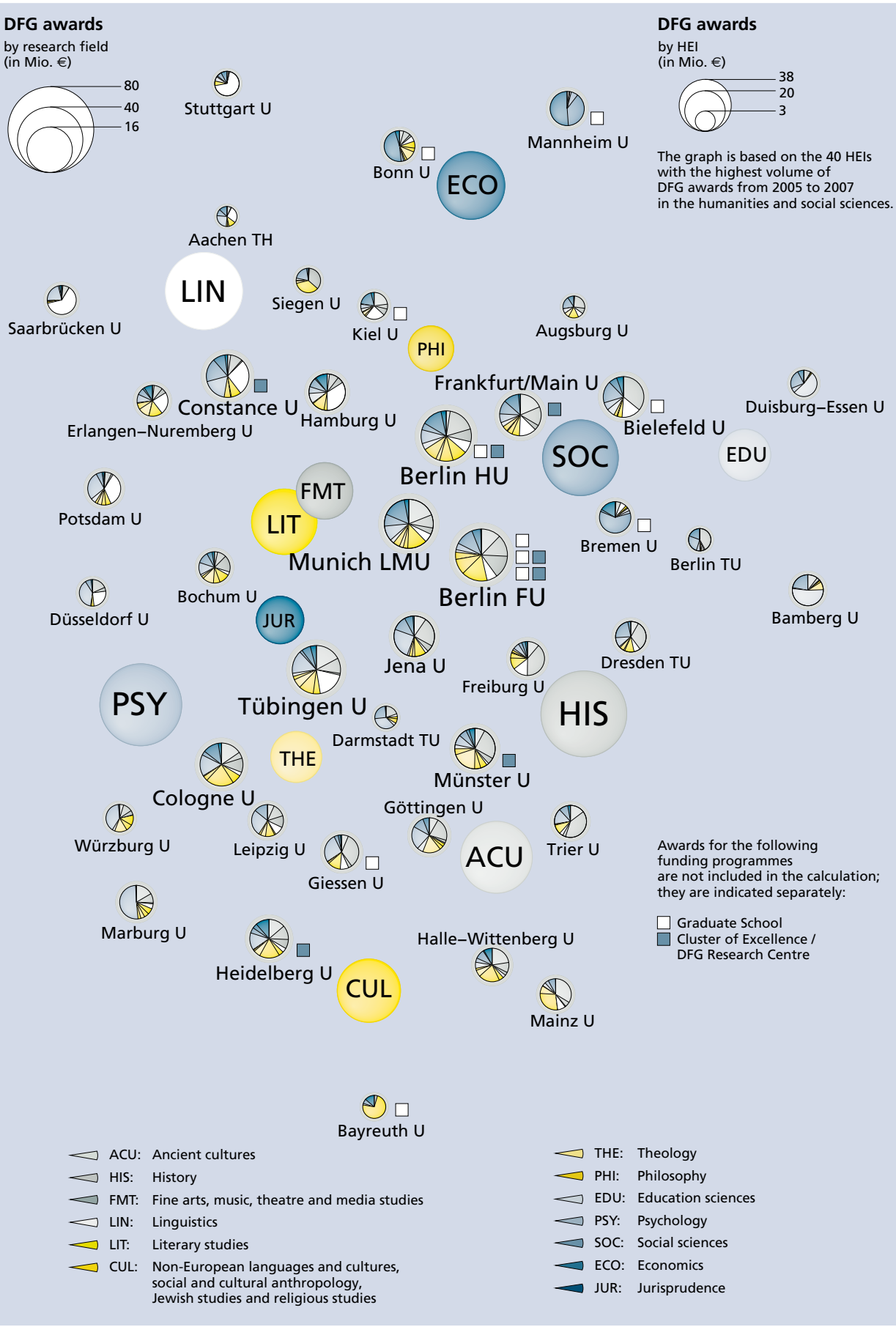
Key to ranking groups:

1st to 10th position | 11th to 20th position | 21st to 30th position | 31st to 40th position | 41st to 60th position | 61st and subsequent

Notes:
For methodical reasons, the Excellence Initiative funding decisions made at the end of 2006 and the end of 2007 are included in the calculation in the form of three-year awards rather than five-year awards. Awards in the third funding line (Institutional Strategies) apply to the entire HEI and are therefore excluded here. Further remarks on methodology, with particular reference to the handling of the Excellence Initiative, can be found in the appendix.
[1] Subject area humanities.
[2] Subject area social and behavioural sciences.
[3] The calculation only includes HEIs which employed 30 or more professors full-time in the scientific discipline under consideration here.

Data basis and sources:
Deutsche Forschungsgemeinschaft (DFG): DFG awards 2005 to 2007.
Federal Statistical Office (DESTATIS): Professors working full-time at universities 2006 (calculation based on full-time equivalents).
Calculations by the DFG.

Figure 4-3:
Funding profiles of HEIs: Subject map based on DFG awards in the humanities and social sciences



the universities of Tübingen and Munich (LMU), each with a strong presence in the humanities, feature numerous participations in the DFG network programmes. Along with internal collaborations, a number of external contacts have been established with various institutions. A comparatively large number of participations in the Coordinated Programmes of the DFG has also been documented for the universities of Halle-Wittenberg and Giessen. Here too, DFG-funded cooperation programmes make an important contribution to the networking of research in the humanities and social sciences.

Thematic Priorities of HEIs

The thematic priorities set by HEIs within the scope of DFG-funded research in the humanities and social sciences are elucidated below with the help of Table 4-2 and Figure 4-3. In keeping with the DFG subject classification system[64] a distinction is made in the following analysis between the humanities and the social and behavioural sciences. In accordance with this system, eight research fields are assigned to the subject area of the humanities (cf. Table 2-5 in Chapter 2). These range from history and fine arts studies, to linguistics and cultural studies, to theology and philosophy. The subject area of social and behavioural sciences incorporates five distinct research fields: education sciences, psychology, social sciences, economics and jurisprudence.

With reference to the 40 HEIs with the highest volume of DFG awards in the humanities and social sciences between 2005 and 2007, Table 4-2 reports the overall funding totals and ranking groups and the same figures differentiated by subject area. At just under €474 million, the total volume of awards in the humanities was greater than the funding volume of €296 million in the social and behavioural sciences. These 40 universities account for 92 percent of all the DFG awards allocated to researchers at HEIs, and the top ten universities attracted 51 percent of the funds. This clearly shows that the majority of DFG-funded research is conducted at the HEIs listed here.

With almost €68 million, the volume of awards acquired by the leading institution, the FU Berlin, is significantly higher than the funding volume received by the other HEIs[65]. The FU Berlin's particular strength is in the humanities, for which it received €21 million more in awards than the next HEI, the University of Heidelberg. The outstanding position of the FU Berlin is to some extent explained by its above-mentioned success in the Excellence Initiative. The FU Berlin acquired a total of €30 million from the first two funding lines of the Excellence Initiative for research in the humanities and social sciences (cf. Figure 2-4 and Table 4-2).

Another HEI located in Berlin, the HU Berlin, scored the second highest DFG funding volume in the scientific discipline of humanities and social sciences. Along with the large number of DFG reviewers and DFG Review Board members (cf. Table 4-3)[66] provided by institutions in Berlin, another indication of Berlin's special strength is the great interest in Berlin HEIs shown by guest researchers from abroad (cf. Table 4-4)[67] whose research visits to Germany are funded by the AvH or the DAAD[68].

[64] A description of the DFG's Review Board system and the subject classification system derived from it can be found in Section 2.2 and in Section A.3 in the appendix.

[65] The FU Berlin also had the second highest funding volume in the humanities and social sciences funding area of the Sixth EU Framework Programme. The University of Bielefeld, another of the 10 HEIs with the most DFG awards, was the leader in this category. Bielefeld also acquired the highest funding totals in the humanities and social sciences funding areas of the federal government's direct R&D project funding. See also Table A-20 (federal funding) and Table A-23 (EU funding) in the appendix.

[66] The institution specific figures for DFG reviewers are reported in tables A-15 (HEIs) and A-16 (non-university research institutions) in the appendix. Information on members of DFG Review Boards can be found in the tables A-17 (HEI) and A-18 (non-university research institutions) in the appendix.

[67] A total of 112 projects in the humanities and social sciences (57 Starting Grants and 55 Advanced Grants) were approved in the ERC's two first calls for proposals. The greatest number of awards were assigned to locations in the United Kingdom (30 percent), followed by the Netherlands (13 percent) and France (12 percent). Germany and Spain share the fourth ranking position, with 9 percent of the awards each. The most successful locations are the Institutes of the CNRS (France) with five ERC grants as well as the University of Edinburgh (UK) and the Vereniging voor Christelijk Hoger Onderwijs, Wetenschappelijk Onderzoek en Patientenzorg (Netherlands) with four ERC grants each. From the German point of view, the universities of Frankfurt on the Main and Hamburg, with two ERC grants each, were the most successful in the humanities and social sciences (cf. Table 4-4).

[68] The HEI specific figures on international appeal are reported in the tables A-25 (AvH) and A-26 (DAAD) in the appendix, differentiated by 14 respectively 12 subject areas.

Table 4-3:
Reviewers and members of the Review Boards of the DFG by HEI in the humanities and social sciences

DFG reviewers			Members of DFG Review Boards		
Higher education institution	**No.**	**cum. %**	**Higher education institution**	**No.**	**cum. %**
Munich LMU	141	5.1	Berlin FU	12	9.5
Tübingen U	124	9.5	Tübingen U	11	18.3
Berlin FU	113	13.6	Bochum U	6	23.0
Cologne U	109	17.5	Bonn U	6	27.8
Berlin HU	108	21.4	Göttingen U	5	31.7
Frankfurt/Main U	102	25.1	Hamburg U	5	35.7
Münster U	92	28.4	Heidelberg U	5	39.7
Bonn U	88	31.6	Munich LMU	5	43.7
Hamburg U	85	34.7	Cologne	4	46.8
Göttingen U	80	37.5	Frankfurt/Main U	4	50.0
Heidelberg U	78	40.4	Mannheim U	4	53.2
Freiburg U	75	43.1	Constance U	3	55.6
Bochum U	71	45.7	Dresden TU	3	57.9
Mainz U	67	48.1	Erlangen-Nuremberg U	3	60.3
Bielefeld U	61	50.3	Greifswald U	3	62.7
Erlangen-Nuremberg U	59	52.4	Halle-Wittenberg U	3	65.1
Leipzig U	59	54.5	Jena U	3	67.5
Jena U	54	56.5	Kiel U	3	69.8
Marburg U	53	58.4	Leipzig U	3	72.2
Constance U	46	60.0	Münster U	3	74.6
Position 1 to 20 overall	**1,664**	**60.0**	**Position 1 to 20 overall**	**94**	**74.6**
Other HEIs	**1,107**	**40.0**	**Other HEIs**	**32**	**25.4**
HEIs overall	**2,771**	**100.0**	**HEIs overall**	**126**	**100.0**
Based on: No. of HEIs	**122**		**Based on: No. of HEIs**	**44**	

Data basis and source:
Deutsche Forschungsgemeinschaft (DFG): Reviewers of proposals submitted within the framework of the Individual Grants Programme and Coordinated Programmes 2005 to 2007 and elected members of DFG Review Boards for the term of office 2008 to 2011.
Calculations by the DFG.

Supplementary to Table 4-2, the priorities set by the HEIs studied here are illustrated by an additional profile visualisation. It reveals to what extent the 13 research fields distinguished by the DFG as belonging to the humanities and social sciences shape a HEI's profile (cf. Figure 4-3). The graph also expresses the number of Excellence Initiative-funded humanities and social sciences Graduate Schools and Clusters of Excellence per HEI. The differentiation by 13 research fields implemented here does not take into consideration these excellence programmes[69].

For the HEI sector as a whole, the visualisation shows that a broad range of priorities have been set in DFG-funded research. Most of the highly research-active HEIs studied here concentrate on a few research fields, while some universities have a broader basis, particularly those which are larger in terms of the number of professors working in the humanities and social sciences (cf. Table 4-2). Thus, for example, the largest funding recipients outside the Excellence Initiative, the FU and HU Berlin and the LMU Munich, are universities with rather comprehensive subject-specific structures within the humanities and social sciences. They are situated in the centre of the graph and their subject portfolios include many of the scientific research fields considered here.

Moreover, the profile analysis also includes higher education institutions with a much stronger thematic focus in terms of DFG awards. As is also apparent from Table 4-2, a distinct emphasis on the research fields of the social

[69] See also Section 3.1 on the methodology of the profile analyses presented here. Table A-7 in the appendix states the figures that form the basis of the profile graph.

Table 4-4:
International appeal of HEIs: The most commonly chosen host universities by AvH-, DAAD-, and ERC-funded researchers in the humanities and social sciences

Alexander von Humboldt Foundation			German Academic Exchange Service[1)]		
Host university	**No. of visits**	**cum. %**	**Host university**	**No. of recipients**	**cum. %**
Berlin FU	122	10.8	Berlin FU	122	11.7
Berlin HU	113	20.8	Berlin HU	92	20.5
Munich LMU	109	30.5	Kassel U	69	27.1
Cologne U	64	36.2	Leipzig U	59	32.8
Tübingen U	60	41.5	Munich LMU	54	37.9
Bonn U	58	46.6	Cologne U	40	41.8
Freiburg U	55	51.5	Tübingen U	39	45.5
Heidelberg U	51	56.0	Bonn U	37	49.0
Frankfurt/Main U	35	59.1	Heidelberg U	32	52.1
Göttingen U	30	61.8	Göttingen U	31	55.1
Hamburg U	26	64.1	Freiburg U	30	58.0
Bayreuth U	25	66.3	Hamburg U	28	60.6
Berlin TU	25	68.5	Frankfurt/Main U	27	63.2
Münster U	23	70.6	Münster U	25	65.6
Leipzig U	22	72.5	Giessen U	24	67.9
Constance U	21	74.4	Bochum U	20	69.8
Bochum U	19	76.1	Bremen U	20	71.7
Marburg U	16	77.5	Potsdam U	20	73.7
Mainz U	15	78.8	Duisburg-Essen U	18	75.4
Giessen U	14	80.1	Erlangen-Nuremberg U	17	77.0
Würzburg U	14	81.3			
Position 1 to 20 overall	**917**	**81.3**	**Position 1 to 20 overall**	**804**	**77.0**
Other HEIs	**211**	**18.7**	**Other HEIs**	**240**	**23.0**
HEIs overall	**1,128**	**100.0**	**HEIs overall**	**1,044**	**100.0**
Based on: No. of HEIs	**76**		**Based on: No. of HEIs**	**48**	

Host universities of ERC-funded researchers (no. of recipients):
Berlin FU (1), Bonn U (1), Frankfurt/Main U (2), Hamburg U (2), Heidelberg U (1), Munich LMU (1) and Tübingen U (1).

[1)] For DAAD-funded researchers, subject-specific data was available for 51 HEIs, which had a total expenditure of at least one million euros per year according to the DAAD funding statement.

Data basis and sources:
Alexander von Humboldt Foundation (AvH): Research visits by AvH guest researchers from 2003 to 2007.
German Academic Exchange Service (DAAD): Researchers from abroad funded between 2005 and 2007.
European Research Council (ERC): Researchers funded in the two first calls for proposals (project database CORDIS; as of 15.04.2009).
Calculations by the DFG.

and behavioural sciences may be attributed to the universities of Bremen and Mannheim. With €16 million, the University of Mannheim received the highest volume of awards in the subject area of social and behavioural sciences, half of which went to the economic sciences and approximately half to the social sciences – as shown by Figure 4-3. On the other hand, the Rhenish Friedrich Wilhelm University of Bonn, the other leading institution in the research field economics, has a profile characterised by a notably broader portfolio of subjects. The economics-oriented projects of both higher education institutions were also successful in the Excellence Initiative[70]. To name another example, the University of Bayreuth, situated opposite the universities of Bonn and Mannheim in the diagram, has a noticeable focus on "non-European languages and cultures, social and cultural anthropology, Jewish studies and religious studies" (lower area of

[70] The universities of Mannheim and Bonn were both successful in the first funding line of the Excellence Initiative. Funding was granted for the Graduate Schools "Empirical and Quantitative Methods in the Economic and Social Sciences" at the University of Mannheim and "Bonn Graduate School of Economics" at the University of Bonn (regarding funding decisions in the Excellence Initiative, see Figure 2-4 in Chapter 2).

graph). While the University of Bayreuth only attained the fourth overall ranking group in the humanities and social sciences, the relatively small HEI is leading in the research field examined here. It also achieved some success in the Excellence Initiative with "Bayreuth International Graduate School of African Studies (BIGSAS)"[71].

As regards the findings presented here, it must be emphasised that a relatively broad field of subjects is under consideration. When it comes to the interpretation of the subject-specific analyses within the humanities and social sciences, the large variety of research goals and research methods must always be borne in mind. Every one of the subjects examined here develops its own research regulations and all of these scientific communities concentrate on specific fields of research and activity. Precisely because of the broad spectrum under consideration here the profile visualisations are of great importance. On the level of 13 research fields, the profile analyses show a highly differentiated picture in the humanities and social sciences. The visual representation makes it easy to discern the externally funded priorities of HEIs and to detect the specific emphases which are set above all by small and medium-sized HEIs.

4.2 Life Sciences

Following the DFG's subject classification system, Funding Ranking 2009 will distinguish between a total of seven research fields within the life sciences:

- Foundations of biology and medicine
- Plant science
- Zoology
- Microbiology, virology and immunology
- Medicine
- Neurosciences
- Veterinary medicine, horticulture, agriculture and forestry

As evidenced by the subjects listed here, there are many points of contact between biology and medicine.

Interdisciplinary cooperation, which is of growing importance for DFG-funded research in general, is especially significant in the scientific discipline considered here. With the changeover to the new Review Board system in 2003, the DFG already made greater allowance for the phenomenon of interdisciplinary cooperation[72]. And so a Review Board entitled "foundations of biology and medicine" was established to cover overlapping areas of basic biomedical research. Proposals processed in this category are evaluated by reviewers from different disciplines. Their research fields range from genetics, to cellular and molecular biology, to biophysics and biochemistry, to anatomy and physiology. The special relationship between medicine and biology, which has already been discussed in the introductory analyses of DFG funding profiles (cf. Figure 3-3), means that the subject specific analyses must take into account neighbouring subjects as well as research fields belonging to other scientific disciplines.

In accordance with the DFG's subject classification system, the subject "foundations of biology and medicine", along with plant science and zoology, is assigned to the subject area of biology. Furthermore, the subjects of microbiology, virology and immunology, along with medicine and neurosciences, are grouped together in the over-arching subject area of medicine. Veterinary medicine, agriculture and forestry are amalgamated as another life sciences subject. It is apparent from Section 2.2 and Table 4-5, which contain the funding statements of research institutions for the DFG, the EU, and the federal government, that the three above-mentioned subject areas of the life sciences, taken together, comprise the scientific discipline which has by far the highest total DFG funding.

Funding Statements of Research Institutions

During the period 2005 to 2007, the volume of DFG awards for projects in the life sciences at institutions in Germany amounted to just under €2 billion. In the same period, the federal government provided a total of €696 million for research in the priority areas "R&D in the

[71] Due to the particularly high funding received in its priority area, the University of Bayreuth, with its 80 professors working in the humanities and social sciences, has a comparatively good position in terms of relative DFG funding totals (2nd ranking group in the humanities and social sciences, see Table 4-2).

[72] A detailed description of the procedures of the Review Boards and of the reform of the DFG's review system in 2003 may be found online at http://www.dfg.de/en/dfg_profile/structure/statutory_bodies/review_boards/index.html. Moreover, Koch (2006) offers a deeper insight.

health sector" and biotechnology to HEIs and non-university research institutions as part of its direct R&D project funding. In the Sixth EU Framework Programme, more than €341 million was paid to German research institutions for projects in the funding areas "life sciences, genomics and biotechnology for health" and "food quality and safety"[73] – when converted to a three year period. The majority of the funds allocated to German HEIs and non-university research institutions by the above-mentioned funding sources went to the HEIs and especially to universities. At 87 percent, the share of DFG awards that went to universities is particularly high.

As regards the four large research organisations, the profile analyses in Section 3.2 have already illustrated the distinct emphasis that the Leibniz Association, the Max Planck Society and the Helmholtz Association place on the life sciences. At the Helmholtz Association, the German Research Centre for Environmental Health (Deutsches Forschungszentrum für Gesundheit und Umwelt, HMGU), the German Cancer Research Centre (DKFZ), the Max Delbrück Centre for Molecular Medicine (MDC) and the Helmholtz Centre for Infection Research (HZI) are conspicuously active in the scientific discipline considered here[74].

At the Leibniz Association it was primarily the 25 Leibniz Institutes grouped in the life sciences section that received large volumes of third-party funding from the DFG, the EU and the federal government[75]. The Max Planck Society is a large recipient of DFG awards, mainly due to the institutions grouped in its biology and medicine section[76]. During the reporting period, the Max Planck Society acquired a total of €108 million in DFG funding; it is also one of the most active non-university research institutions in terms of third-party funding from the other funding bodies (cf. Table 4-5). While the Fraunhofer Society's group for life sciences (VLS) is its chief representative in the life sciences programmes of the DFG, the EU and the federal government,[77] the main federal institutions in this area are the Robert Koch Institute (RKI) and the European Molecular Biology Laboratory (EMBL). Among German research institutions, the EMBL, which received almost €36 million in the life sciences, is the largest funding recipient in the Sixth EU Framework Programme.

Above and beyond the institutions just named, other institutions in the non-university research sector which deserve to be mentioned are hospitals including the German Heart Institute Berlin (DHZB) and the Clinic for Tumour Biology Freiburg, both of which received funding from the DFG, the EU or the federal government[78]. On the whole, the funding statements presented here allow us to conclude that quite a number of non-university research institutions are competing for third-party funding in the life sciences.

Network Structures between HEIs and Non-University Research Institutions

Figure 4-4 is a cartographical representation of cooperative relationships between various research institutions, based on their participation in the Coordinated Programmes of the DFG. The graph depicts all HEIs and non-university research institutions that received awards in the programmes under consid-

[73] An unambiguous assignment of the funding area "food quality and safety" to a single one of the four scientific disciplines is particularly difficult. It involves both life sciences related activities and research fields belonging to the natural and engineering sciences. This funding area is included in this section on life sciences because, as shown in the profile analyses in Chapter 3, its funding recipients belong predominantly to this scientific discipline.

[74] In reference to the Helmholtz Association, the German Centre for Neurodegenerative Diseases (DZNE), established 2009, should also be mentioned. The centre will in future be researching new preventative measures and therapeutic procedures for neurodegenerative diseases such as Parkinson's and different forms of dementia.

[75] Further information on the institutes grouped in the various sections and their respective fields of activity can be found on the Leibniz Association's Internet site (www.wgl.de).

[76] Further information on the activities of these institutes can be found on the Max Planck Society's website (www.mpg.de/english).

[77] The biological, biomedical, pharmacological, toxicological and food technology expertise of the FhS are bundled together in this group. Members of the group include the Fraunhofer Institutes for Biomedical Engineering (IBMT), Interfacial Engineering and Biotechnology (IGB), Molecular Biology and Applied Ecology (IME), Toxicology and Experimental Medicine (ITEM), Process Engineering and Packaging (IVV), Cell Therapy and Immunology (IZI), and Marine Biotechnology (EMB).

[78] Tables A-14, A-21 and A-24 in the appendix give further information on the funding allocated by the DFG, the EU and the federal government to non-university research institutions.

Table 4-5:
Funding statements for research institutions: Research funding by the DFG, the EU and the federal government by type of institution in the life sciences

Type of institution	DFG awards		Direct R&D project funding by the federal government		R&D funding in FP6	
	Mio. €	%	Mio. €	%	Mio. €	%
Higher education institutions	**1,722.7**	**87.1**	**463.5**	**66.6**	**184.0**	**53.9**
Non-university research institutions	**255.9**	**12.9**	**232.6**	**33.4**	**157.5**	**46.1**
Max Planck Society	108.1	5.5	51.6	7.4	44.2	12.9
Fraunhofer Society	1.5	0.1	16.8	2.4	7.0	2.0
Helmholtz Association	57.4	2.9	83.2	12.0	38.1	11.2
Leibniz Association	50.9	2.6	29.0	4.2	15.3	4.5
Federal institutions	18.0	0.9	17.0	2.4	37.6	11.0
Other institutions	19.9	1.0	35.1	5.0	15.4	4.5
Institutions overall	**1,978.5**	**100.0**	**696.1**	**100.0**	**341.5**	**100.0**

Notes:
The calls for proposals in the EU's FP6 refer to a period of four years (2002 to 2005). The funding totals shown here have been converted to a three-year period corresponding to the reporting years taken into account for funding by the DFG and the federal government. The institutions considered here received a total of € 455.3 million in the EU's FP6.

Data basis and sources:
Deutsche Forschungsgemeinschaft (DFG): DFG awards 2005 to 2007.
Federal Ministry of Education and Research (BMBF): Direct R&D project funding by the federal government 2005 to 2007 (project database PROFI).
EU Office of the BMBF: German participations in the Sixth EU Framework Programme from 2002 (project data as of 02.06.2008).
Calculations by the DFG.

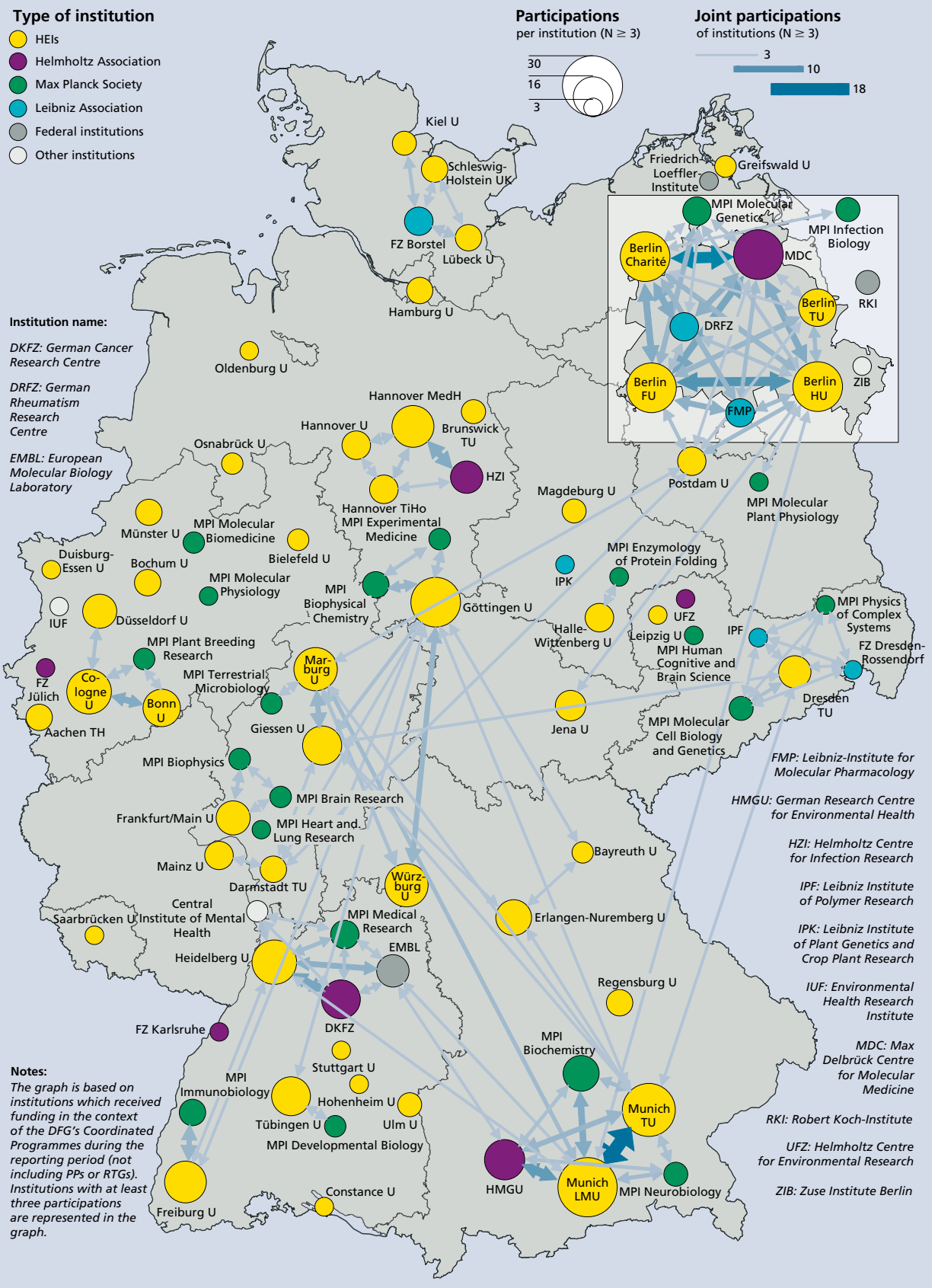
eration here during the reporting period from 2005 to 2007[79]. The diameter of the circles symbolises the number of participations in these programmes, and connection lines between institutions indicate joint participations, such that the thickness of the line increases with the frequency of these collaborations. Due to the exceptional density of interaction in the life sciences, the visual representation is restricted to institutions with three or more programme participations. It shows relationships based on at least three joint participations.

The analysis reveals an extremely dense network of the various institutions, which cooperate locally and trans-regionally in the life sciences. Several major local research clusters can be identified in the graph. The most intensive cooperative links are evident in the Berlin area. The FU and HU Berlin, along with the "Charité University Hospital", which is jointly run by these two HEIs, participate together in numerous DFG programmes. In addition to the TU Berlin, this research network also integrates scientists from several non-university research institutions. The foremost of the institutions cooperating with the Berlin universities in joint DFG-funded projects include the Max Delbrück Centre for Molecular Medicine (MDC), the German Rheumatism Research Centre (DRFZ), the Leibniz Institute for Molecular Pharmacology (FMP), the MPI for Molecular Genetics and the MPI for Infection Biology.

There is another tightly linked network in the Munich area. The core of this network comprises the TU and LMU Munich, the German Research Centre for Environmental Health (HMGU) and the MPI of Biochemistry in Martinsried, with the MPI of Neurobiology also being integrated in several network projects. Apart from these local connections within Munich, there are many trans-regional cooperative relationships, for example, to another dense local network in the metropolitan region of Rhine-Neckar. As explained in the regional analysis presented in Section 3.3 above, this is a region with a strong focus on the life sciences. In this network, the University of Heidelberg works in close cooperation with nearby, internationally renowned research institutions such as

[79] The analysis takes into account Research Units, Collaborative Research Centres, DFG Research Centres, Graduate Schools and Clusters of Excellence. Further information on the network analyses presented here and details regarding the data basis and methodology can be found in Section A.4 in the appendix.

Figure 4-4:
Participations of research institutions in the DFG's Coordinated Programmes and the resulting cooperative relationships in the life sciences



the DKFZ and the EMBL, both of which are geared towards biomedical research. The MPI for Medical Research in Heidelberg and the Central Institute of Mental Health (ZI) in Mannheim are also frequent participators in joint programmes.

Moreover, a network with several non-university research institutions has emerged in the Saxony Triangle, and especially in the Dresden area around the technical university. This network integrates two May Planck Institutes (MPI of Molecular Cell Biology and Genetics and the MPI for the Physics of Complex Systems) and two WGL institutes (Leibniz Institute of Polymer Research and the Research Centre Dresden-Rossendorf) in cooperative research projects in the life sciences.

On the whole, the visual representation of the cooperation structures between HEIs and non-university research institutions in the life sciences shows that, in the framework of the DFG Coordinated Programmes, HEI locations often set local priorities, particularly in networks that integrate institutes of the Max Planck Society. Besides the examples already described, research clusters around the universities of Cologne and Bonn, the University of Frankfurt on the Main and the University of Göttingen also substantiate the importance of these institutes as non-university cooperation partners.

On the other hand, the HEI locations which cannot benefit from such neighbouring non-university research institutions tend to establish trans-regional cooperative relationships. The University of Würzburg, for example, participates in many Coordinated Programmes of the DFG in partnership with the universities of Göttingen and Marburg. Moreover, there are highly developed cooperative links between the universities of Marburg and Giessen, manifested among other things by a merger of the local university hospitals last year. The University Medical Centre of Schleswig-Holstein, which was created from a merger between the university hospitals of Kiel und Lübeck, should also be mentioned in this connection. The latter institutions together form a North German cluster, which also integrates the Research Centre Borstel. The Hannover Medical School is at the core of a network in which the Hannover HEIs cooperate closely with each other, and in which the Helmholtz Centre for Infection Research also participates.[80]

Thematic Priorities of Higher Education Institutions

The thematic priorities set by HEIs in the life sciences in the context of DFG-funded research and the position of HEIs in the competition for DFG funding is elucidated below with the aid of Table 4-6 and Figure 4-5. The table lists the funding totals and ranking groups of the 40 HEIs with the highest overall DFG funding volume between 2005 and 2007 in the scientific discipline considered here, and gives the same figures differentiated by three subject areas. The HEIs in the first four ranking groups account for 95 percent of all DFG funding acquired by scientists at HEIs, and the first ten universities collected 44 percent of the funds. This clearly shows that most of the DFG-funded research was concentrated at the HEIs listed here.

At just over €1 billion in three years, the largest share of the funding for research in the life sciences at HEIs was granted in the subject of medicine. In the HEI sector the university hospitals, which assume tasks in research, teaching and patient care and conduct most of the externally funded biomedical projects, play a dominant role. However, it must be stressed that even medical research is not concentrated entirely in these hospitals and medical faculties. It often has a place in faculties and institutes geared towards biology or even the natural and engineering sciences, which work, for example, in research fields like medical engineering, but also in many branches of basic biomedical research.

In the period from 2005 to 2007, the DFG provided almost €599 million for the subject area of biology and almost

[80] The merged university hospitals pose a methodological challenge for the following ranking analyses. For the various funding sources, awards granted to the scientists at a particular clinic were explicitly assigned to one of the respective HEIs up until the merger. A gradual changeover took place after the reorganisation, and the funding measures were by degrees assigned to the amalgamated hospital. Although the merged institutions are reported separately in the network analysis, a compromise solution was used for the ranking analysis below, to prevent inconsistencies in the handling of such mergers. Whenever the sources reported data for these "new" institutions, the funds were divided 50:50 between the partner HEIs that run the hospital.

Table 4-6:
Ranking analysis of the 40 HEIs with the highest volume of DFG awards 2005 to 2007 in the life sciences

Higher education institution	DFG awards in total								of which	
	Absolute funding amounts						Funding amounts relative to size		2005 up to 2007 not incl. ExIn	1st & 2nd funding line of the ExIn for 3 years
	Total			of which			DFG awards per prof.[4]	Number of professors in 2006		
				BIO[1]	MED[2]	VAF[3]				
	Position	Mio. €	cum. %	Mio. €	Mio. €	Mio. €	Tsd. € per prof.	No.	Mio. €	Mio. €
Munich LMU	1	112.8	6.5	53.8	53.9	5.1	455.0	248	97.6	15.2
Heidelberg U	2	89.5	11.7	30.5	59.0	0.0	520.2	172	80.5	9.0
Freiburg U	3	81.3	16.5	33.5	46.9	0.9	537.4	151	63.7	17.6
Würzburg U	4	76.8	20.9	24.4	52.0	0.3	505.2	152	74.5	2.3
Berlin HU	5	71.9	25.1	21.2	48.9	1.8	375.1	192	58.6	13.3
Göttingen U	6	70.3	29.2	30.4	31.4	8.5	383.8	183	66.4	3.9
Cologne U	7	69.6	33.2	32.9	35.7	0.9	587.8	118	48.1	21.4
Berlin FU	8	66.0	37.0	18.6	45.6	1.8	339.9	194	56.1	9.9
Hannover MedH	9	64.3	40.8	6.6	56.6	1.2	931.8	69	46.4	17.9
Tübingen U	10	63.1	44.4	18.6	43.6	1.0	503.1	125	52.4	10.7
Frankfurt/Main U	11	60.2	47.9	20.1	40.0	0.0	491.2	123	40.2	20.0
Munich TU	12	55.8	51.2	12.5	33.7	9.6	428.0	130	49.4	6.4
Erlangen-Nuremberg U	13	54.6	54.3	10.6	43.4	0.6	372.4	147	53.6	1.0
Giessen U	14	50.3	57.3	12.2	26.0	12.2	370.1	136	40.5	9.8
Kiel U	15	45.0	59.9	10.5	29.7	4.8	403.9	111	25.9	19.1
Bonn U	16	43.3	62.4	11.4	27.9	3.9	312.0	139	43.3	0.0
Mainz U	17	41.6	64.8	6.7	34.8	0.1	350.9	119	41.3	0.3
Ulm U	18	41.0	67.2	9.4	31.5	0.2	600.7	68	37.9	3.1
Münster U	19	41.0	69.6	16.2	24.8	0.0	307.9	133	41.0	0.0
Düsseldorf U	20	40.1	71.9	12.3	27.7	0.0	275.8	145	40.1	0.0
Marburg U	21	35.7	74.0	17.8	17.8	0.1	334.8	107	35.7	0.0
Dresden TU	22	31.9	75.8	10.4	20.3	1.2	299.4	107	27.6	4.3
Hamburg U	23	29.9	77.5	7.5	20.3	2.0	158.4	188	28.1	1.7
Regensburg U	24	29.7	79.3	7.8	22.0	0.0	309.7	96	29.7	0.0
Aachen TH	25	26.4	80.8	7.0	18.9	0.6	284.1	93	24.7	1.8
Halle-Wittenberg U	26	22.7	82.1	14.8	5.5	2.4	191.9	118	22.7	0.0
Bochum U	27	21.7	83.4	10.9	10.3	0.6	460.6	47	20.9	0.8
Leipzig U	28	21.3	84.6	9.1	11.2	1.0	175.1	122	21.0	0.3
Jena U	29	21.0	85.8	10.6	9.6	0.8	216.2	97	19.6	1.4
Saarbrücken U	30	20.1	87.0	7.5	12.6	0.0	257.4	78	20.1	0.0
Constance U	31	18.9	88.1	12.7	5.9	0.4	–	23	17.0	1.9
Bielefeld U	32	16.8	89.1	14.6	2.1	0.2	–	23	12.4	4.4
Duisburg-Essen U	33	15.9	90.0	5.1	10.8	0.1	216.5	74	15.9	0.0
Lübeck U	34	15.8	90.9	2.7	13.0	0.1	318.7	49	13.5	2.3
Hohenheim U	35	15.5	91.8	2.4	1.8	11.2	218.0	71	15.5	0.0
Potsdam U	36	13.1	92.6	11.7	0.6	0.8	–	27	12.2	0.9
Bayreuth U	37	12.9	93.3	6.5	1.3	5.2	–	14	12.9	0.0
Magdeburg U	38	11.3	94.0	1.2	10.0	0.1	189.9	59	11.1	0.1
Hannover TiHo	39	10.3	94.6	1.2	1.8	7.4	173.8	59	10.1	0.3
Osnabrück U	40	9.3	95.1	6.4	2.8	0.2	–	18	9.3	0.0
Position 1 to 40 overall	**01-40**	**1,638.8**	**95.1**	**559.9**	**991.6**	**87.4**	**–**	**4,326**	**1,437.8**	**201.0**
Other HEIs	**41-78**	**83.9**	**4.9**	**38.7**	**33.9**	**11.3**	**–**	**451**	**82.7**	**1.2**
HEIs overall	**01-78**	**1,722.7**	**100.0**	**598.6**	**1,025.5**	**98.6**	**360.6**	**4,777**	**1,520.5**	**202.2**
Based on: No. of HEIs		**78**		**64**	**68**	**56**	**78 / 65**	**65**	**78**	**32**

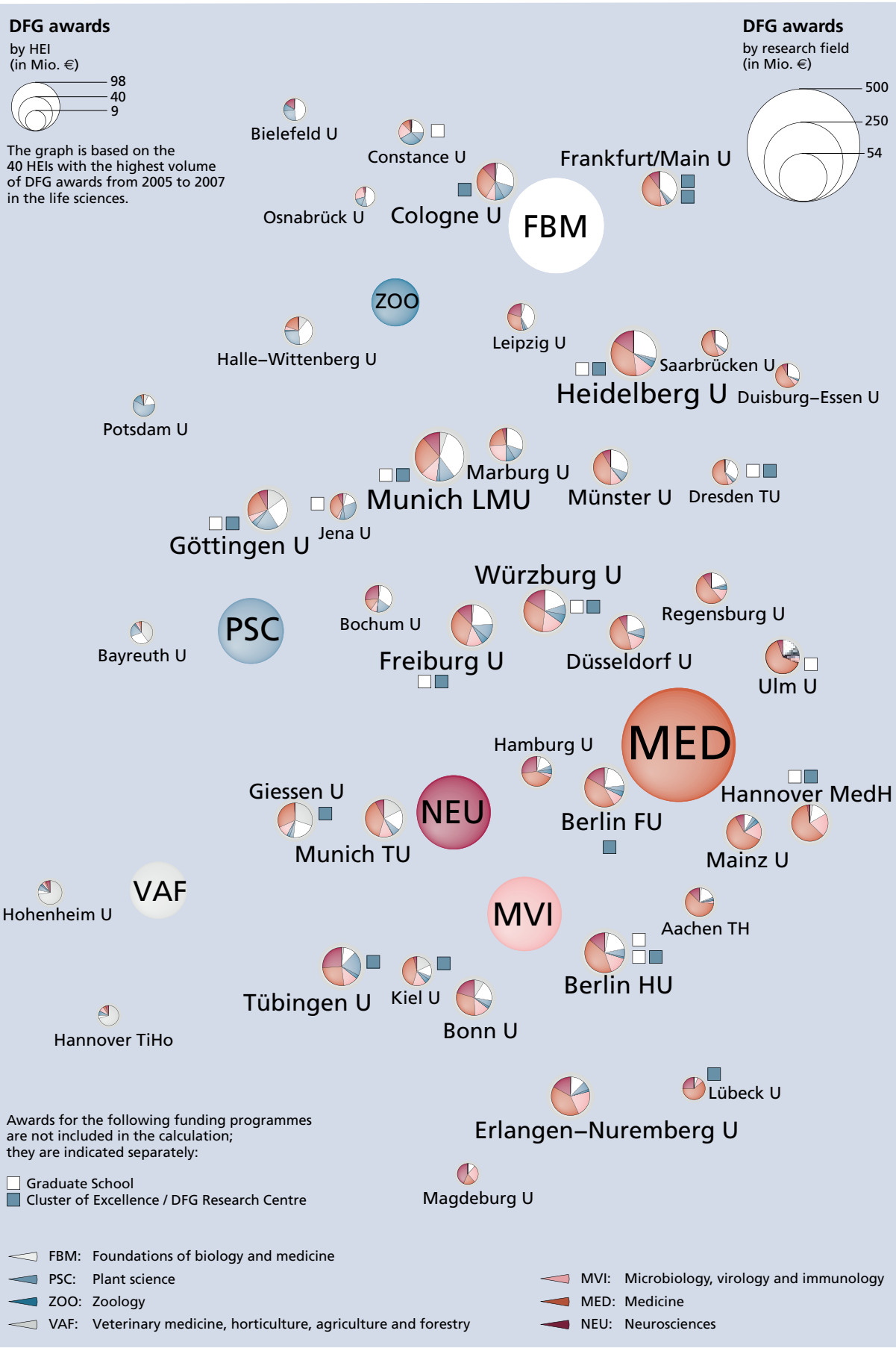
Key to ranking groups:

1st to 10th position | 11th to 20th position | 21st to 30th position | 31st to 40th position | 41st to 60th position | 61st and subsequent

Notes:
For methodical reasons, the Excellence Initiative funding decisions made at the end of 2006 and the end of 2007 are included in the calculation in the form of three-year awards rather than five-year awards. Awards in the third funding line (Institutional Strategies) apply to the entire HEI and are therefore excluded here. Further remarks on methodology, with particular reference to the handling of the Excellence Initiative, can be found in the appendix.
[1] Subject area biology.
[2] Subject area medicine.
[3] Subject area veterinary medicine, agriculture and forestry.
[4] The calculation only includes HEIs which employed 30 or more professors full-time in the scientific discipline under consideration here.

Data basis and sources:
Deutsche Forschungsgemeinschaft (DFG): DFG awards 2005 to 2007.
Federal Statistical Office (DESTATIS): Professors working full-time at universities 2006 (calculation based on full-time equivalents).
Calculations by the DFG.

Figure 4-5:
Funding profiles of HEIs: Subject map based on DFG awards in the life sciences



€ 99 million for the subject area of veterinary medicine, agriculture and forestry.

The LMU Munich received the highest volume of awards with almost € 113 million, followed by the universities of Heidelberg (€ 90 million) and Freiburg (€ 81 million). An analysis of indicators other than the absolute volume of DFG awards, such as the number of DFG reviewers and members of DFG Review Boards[81] (cf. Table 4-7) or the number of guest scientists from abroad, whose research visits to Germany were funded by the AvH of the DAAD[82] (cf. Table 4-8), produces similar results both for the HEIs which have just been mentioned and for the HEI sector as a whole[83].

Figure 4-5 illustrates the research profiles of the 40 HEIs with the highest funding volumes in the life sciences[84]. The HEIs are placed in a spectrum consisting of the seven life sciences research

[81] The institution specific figures for DFG reviewers are reported in tables A-15 (HEIs) and A-16 (non-university research institutions) in the appendix. Information on DFG Review Board members can be found in tables A-17 (HEI) and A-18 (non-university research institutions) in the appendix.

[82] The HEI-specific figures on international appeal are reported in tables A-25 (AvH) and A-26 in the appendix, differentiated by subject areas.

[83] As far as the ERC is concerned, the greatest share of the altogether 200 life sciences projects (105 Starting Grants and 95 Advanced Grants) approved in the two first calls for proposals was assigned to locations in the UK (17 percent). France (13 percent) and Switzerland (12 percent) follow in second and third position. Germany is in fourth position with a 10 percent share of the awards, followed closely by Spain. The most successful locations are the institutes of the CNRS (France) with nine ERC grants, the Weizmann Institute of Science (Israel) with eight ERC grants, and the ETH Lausanne (Switzerland) with seven ERC grants. From the German point of view, the institutes of the Max Planck Society with six ERC grants and the Helmholtz Centre for Environmental Research with two grants deserve to be mentioned for their success in the life sciences.

[84] See also Section 3.1 on the methodology of the profile analyses presented here. Table A-8 in the appendix states the figures that form the basis of the profile graph.

Table 4-7:
Reviewers and members of the Review Boards of the DFG by HEI in the life sciences

DFG reviewers			Members of DFG Review Boards		
Higher education institution	No.	cum. %	Higher education institution	No.	cum. %
Munich LMU	162	5.0	Heidelberg U	11	5.6
Heidelberg U	135	9.2	Tübingen U	11	11.2
Munich TU	130	13.2	Göttingen U	10	16.2
Freiburg U	126	17.2	Freiburg U	9	20.8
Göttingen U	125	21.0	Würzburg U	9	25.4
Bonn U	121	24.8	Berlin FU	8	29.4
Tübingen U	112	28.2	Dresden TU	8	33.5
Berlin FU	107	31.5	Munich TU	8	37.6
Würzburg U	105	34.8	Berlin HU	7	41.1
Frankfurt/Main U	95	37.7	Bonn U	7	44.7
Erlangen-Nuremberg U	92	40.6	Münster U	7	48.2
Hannover MedH	92	43.4	Hamburg U	6	51.3
Berlin HU	91	46.2	Munich LMU	6	54.3
Kiel U	87	48.9	Cologne U	5	56.9
Giessen U	87	51.6	Erlangen-Nuremberg U	5	59.4
Münster U	84	54.2	Greifswald U	5	61.9
Cologne U	83	56.8	Halle-Wittenberg U	5	64.5
Mainz U	81	59.3	Hannover MedH	5	67.0
Düsseldorf U	80	61.8	Leipzig U	5	69.5
Hamburg U	79	64.2	Mainz U	5	72.1
Position 1 to 20 overall	**2,074**	**64.2**	**Position 1 to 20 overall**	**142**	**72.1**
Other HEIs	**1,156**	**35.8**	**Other HEIs**	**55**	**27.9**
HEIs overall	**3,230**	**100.0**	**HEIs overall**	**197**	**100.0**
Based on: No. of HEIs	**84**		**Based on: No. of HEIs**	**46**	

Data basis and source:
Deutsche Forschungsgemeinschaft (DFG): Reviewers of proposals submitted within the framework of the Individual Grants Programme and Coordinated Programmes 2005 to 2007 and elected members of DFG Review Boards for the term of office 2008 to 2011.
Calculations by the DFG.

Table 4-8:
International appeal of HEIs: The most commonly chosen host universities by AvH-, DAAD-, and ERC-funded researchers in the life sciences

Alexander von Humboldt Foundation			German Academic Exchange Service[1)]		
Host university	**No. of visits**	**cum. %**	**Host university**	**No. of recipients**	**cum. %**
Munich LMU	42	8.1	Hohenheim U	51	8.9
Berlin HU	29	13.7	Göttingen U	47	17.0
Munich TU	28	19.0	Berlin HU	45	24.8
Freiburg U	25	23.8	Berlin FU	26	29.3
Göttingen U	24	28.5	Freiburg U	26	33.9
Tübingen U	23	32.9	Giessen U	26	38.4
Heidelberg U	22	37.1	Heidelberg U	21	42.0
Würzburg U	20	41.0	Kassel U	21	45.7
Bonn U	19	44.6	Bonn U	20	49.1
Berlin FU	18	48.1	Munich TU	20	52.6
Hamburg U	17	51.3	Tübingen U	19	55.9
Hohenheim U	17	54.6	Rostock U	18	59.0
Giessen U	14	57.3	Kiel U	17	62.0
Frankfurt/Main U	13	59.8	Halle-Wittenberg U	15	64.6
Erlangen-Nuremberg U	12	62.1	Hamburg U	15	67.2
Marburg U	11	64.2	Leipzig U	15	69.8
Münster U	11	66.3	Munich LMU	14	72.2
Bayreuth U	10	68.3	Münster U	14	74.7
Cologne U	10	70.2	Würzburg U	13	76.9
Kiel U	10	72.1	Jena U	12	79.0
Osnabrück U	10	74.0			
Position 1 to 20 overall	**385**	**74.0**	**Position 1 to 20 overall**	**455**	**79.0**
Other HEIs	**135**	**26.0**	**Other HEIs**	**121**	**21.0**
HEIs overall	**520**	**100.0**	**HEIs overall**	**576**	**100.0**
Based on: No. of HEIs	**56**		**Based on: No. of HEIs**	**47**	

Host universities of ERC-funded researchers (no. of recipients):
Aachen TH (1), Berlin HU (1), Cologne U (1), Düsseldorf U (1), Frankfurt/Main U (1), Freiburg U (1), Göttingen U (1), Heidelberg U (1), Munich LMU (1), Munich TU (1) and Würzburg U (1).

[1)] For DAAD-funded researchers, subject-specific data was available for 51 HEIs, which had a total expenditure of at least one million euros per year according to the DAAD funding statement.

Data basis and sources:
Alexander von Humboldt Foundation (AvH): Research visits by AvH guest researchers from 2003 to 2007.
German Academic Exchange Service (DAAD): Researchers from abroad funded between 2005 and 2007.
European Research Council (ERC): Researchers funded in the two first calls for proposals (project database CORDIS; as of 15.04.2009).
Calculations by the DFG.

fields mentioned above, according to the priorities they set in the context of DFG funding. Also specified is the number of life sciences-oriented Graduate Schools and Clusters of Excellence acquired by a HEI. As in the profile analysis presented in Section 3.1, the remarkable closeness between the subject areas of biology and medicine is also apparent here. Several HEIs are situated around the centre of the graph, which have almost equal funding shares in each of the research fields assigned to these subject areas.

Other HEIs, however, are represented to an unequal degree in either biology or medicine, which may also be discerned from Table 4-6. For instance, the Hannover Medical School and the University of Tübingen, with more than €13 million the highest-funded HEI in the neurosciences, focus on medicine (lower part of graph) and are among the ten highest-funded HEIs in the subject area of medicine. Other HEIs, such as the universities of Halle-Wittenberg, Constance or Bielefeld, concentrate more on the biosciences (upper part of graph). The University of Potsdam has a prominent position in the research field of plant science, which is assigned to the biosciences; more than half of the funding granted to this institution for the life sciences went to this research field. Accordingly, the comparatively small University of Pots-

dam is one of the five HEIs with the highest funding in that research field.

In the subject area of veterinary medicine, agriculture and forestry, the University of Veterinary Medicine Hannover (TiHo), the University of Hohenheim, the TU Munich and the universities of Giessen and Göttingen are the institutions with the highest funding volume. Whereas the latter three also have priorities in biological and medical research, the TiHo and the University of Hohenheim focus predominantly on research fields belonging to veterinary medicine, agriculture and forestry (lower left area of graph).

Comparison of Funding Structures by Funding Source

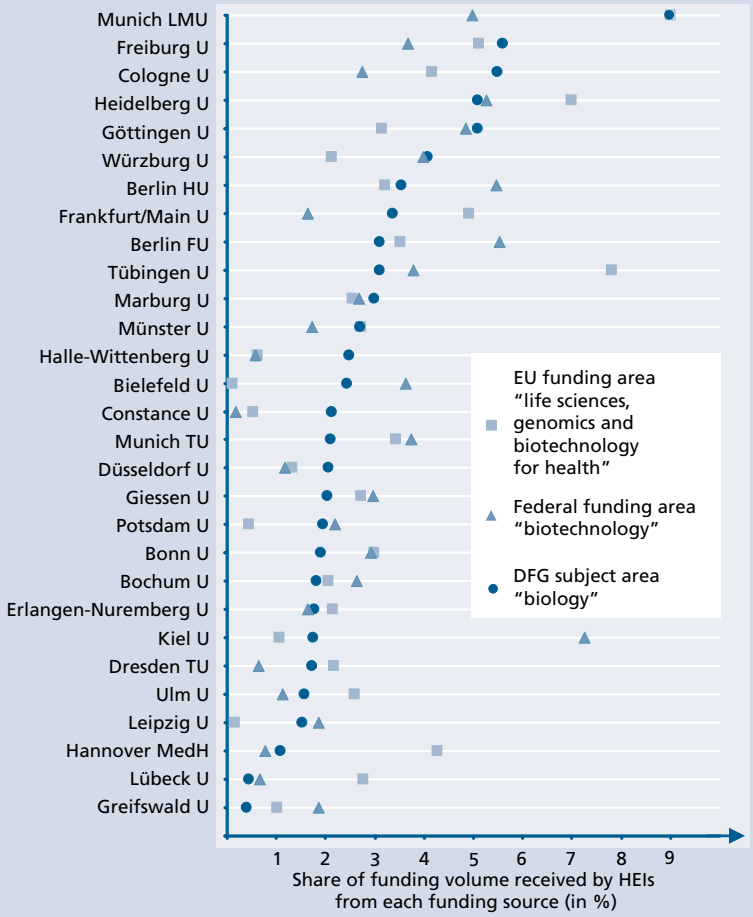
The foregoing comments on the specific funding profiles of HEIs concentrated on priorities set within the scope of DFG funding. In this section the view is extended to incorporate the funding measures of the EU and the federal government. Figure 4-6 indicates the relative performance of the HEIs in terms of research funding in the bioscientific and biotechnological funding areas of the DFG, the EU and the federal government. As the funding programmes juxtaposed here involve different reporting periods and running times, the graph does not correlate the absolute funding totals. Rather, the shares of the total funding volumes allocated to HEIs by each of the funding sources are juxtaposed for purposes of comparison. Ordered by DFG funding volume, the ranking lists the 20 HEIs with the highest funding income in the DFG's subject area biology, in the funding area of biotechnology in the federal government's direct R&D project funding, and in the EU's funding area of "life sciences, genomics and biotechnology for health".

The visual representation reveals that the LMU Munich occupies first position not only in terms of DFG funding but also in the Sixth EU Framework Programme. The University of Tübingen actually attracted a higher share of funds from the EU programme than from the DFG. Closer inspection shows that this university is also well positioned in the other markets for third-party funding (10th position in DFG funding and 8th position in federal government funding). The HEIs with the highest funding totals in the federal government's direct R&D project funding are the University of Kiel and the FU and HU Berlin. All three acquired a higher percentage of the total volume of federal funding provided to HEIs than of the total DFG funding. What is more, the University of Kiel is represented neither among the 20 HEIs with the highest DFG funding nor among the 20 largest recipients of EU funding. In the reporting period, more than €7.7 million was allocated to the University of Kiel in the framework of the National Genome Research Network project. Only a few HEIs, including the University of Marburg and the University of Erlangen-Nuremberg, received roughly equal shares of the total funding provided by all three funding sources. The universities of Halle-Wittenberg and Constance, for instance, were among the 20 HEIs with the highest volume of DFG funding, but they have relatively low shares of the funding provided by the other funding sources. Altogether, the graph identifies some HEIs which place a special emphasis on a particular funding source, though the universities with the most DFG awards tend also to be among the most active institutions in terms of third-party funding from the EU and the federal government.

Furthermore, in Figure 4-7, the funding volumes allocated to the HEI sector by the DFG (over €1 billion) and the federal government's direct R&D project funding (€240 million in all) are represented in a scatter diagram. It covers the 20 HEIs which received the highest funding totals from the DFG and the federal government for medical research projects in the period from 2005 to 2007. The diagram is divided into four fields by two blue lines. To the right of the vertical blue line are the HEIs with the most awards in the DFG subject area of medicine. Above the horizontal blue line are the 20 HEIs with the highest income in the federal funding area of "R&D in the health sector". Accordingly, the HEIs situated in the top-right field are among the 20 HEIs with the highest funding totals from both the DFG and the federal government in the funding areas under consideration here.

As shown in the diagram, the LMU Munich and the universities of Göttingen and Freiburg received the most funding in the federal government's direct R&D project funding. All three HEIs are also to be found among the 20 HEIs with

Figure 4-6:
Comparison of research funding in bioscientific and biotechnological funding areas of the DFG, the EU and the federal government by HEI



Notes:
The diagram is based on data for the 20 HEIs with the highest funding incomes in the following categories: the federal funding area of "biotechnology", the DFG's subject area of "biology" and the EU's funding area of "life sciences, genomics and biotechnology for health". Ordered by DFG funding volume, the figure shows for each HEI its relative share of the total funding volume allocated to German HEIs by the funding sources considered here.
For example: The LMU Munich accounts for a 9 percent share of the total volume of awards allocated to HEIs by the DFG in the subject area of "biology".

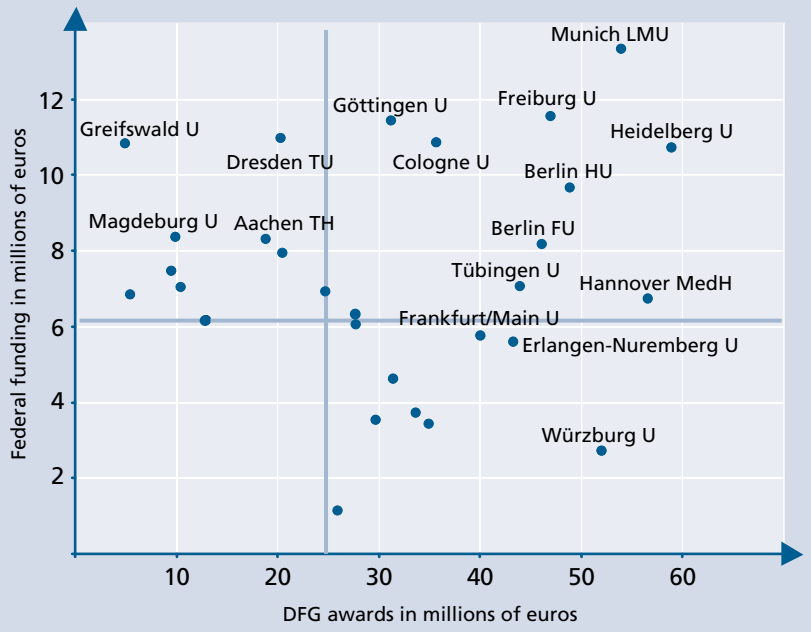
Data basis and sources:
Deutsche Forschungsgemeinschaft (DFG): DFG awards 2005 to 2007.
Federal Ministry of Education and Research (BMBF): Direct R&D project funding by the federal government 2005 to 2007 (project database PROFI).
EU Office of the BMBF: German participations in the Sixth EU Framework Programme from 2002 (project data as of 02.06.2008).
Calculations by the DFG.

the most awards for DFG funding. Altogether, ten of the 20 leading DFG-funded HEIs are also among the 20 HEIs with the highest income from the direct R&D project funding of the federal government. By way of contrast, the University of Würzburg, concentrates on DFG funding and the University of Greifswald focuses above all on federal funding. The latter university is one of the few HEIs to have received more funding for medical research from the federal government than from the DFG, while at the same time belonging to the ten HEIs with the highest funding volume in federal government's funding area of "R&D in the health sector"[85].

Supplementary to the data presented for DFG funding, we now have a clear-

[85] A large portion of this funding, almost € 8 million, was awarded to the project "Improving the Efficiency of Clinical Research especially in the Priority Areas Community Medicine and Molecular Medicine".

Figure 4-7:
Comparison of research funding in medical funding areas of the DFG and the federal government by HEI



Notes:
The diagram is based on data for the 20 HEIs with the highest funding incomes in the funding area "R&D in the health sector" in the federal government's R&D project funding programmes and in the DFG's subject area of "medicine". Shown here are the names of the ten HEIs with the highest funding income from the relevant funding sources. To the right of the vertical blue line are the 20 HEIs with the most DFG awards, and above the horizontal blue line are the 20 HEIs with the highest income from the federal government.

Data basis and sources:
Deutsche Forschungsgemeinschaft (DFG): DFG awards 2005 to 2007.
Federal Ministry of Education and Research (BMBF): Direct R&D project funding by the federal government 2005 to 2007 (project database PROFI).
Calculations by the DFG.

ly differentiated picture of the funding structures found in biomedical research.

4.3 Natural Sciences

The range of research fields examined in this section stretches from mathematics and molecular chemistry, to quantum optics and astronomy, to geodesy and water research. The natural sciences, more than any other scientific discipline, are characterised by interdisciplinary research. As described in Section 3.1 (cf. Figure 3-3 in Chapter 3), the profile visualisation exemplifies a subject spectrum that ranges from the technical subjects, to the humanities and social sciences, to the life sciences subjects, while the natural sciences, and above all physics, chemistry and mathematics, as classic basic research subjects, are placed in the centre of the graph. They influence the research of scientific institutions which have very different general orientations. The natural sciences provide an important foundation for technically oriented institutions as well as for those geared toward the life sciences or the humanities and social sciences[86].

Funding Statements of Research Institutions

In the period from 2005 to 2007, the DFG awarded more than € 1.4 billion in funding to institutions in Germany for the subject areas of chemistry, physics, mathematics and geosciences, which are grouped together in the natural sciences (cf. Table 2-5 in Chapter 2). Table 4-9 gives further information regarding the funding volumes allocated to HEIs and non-university research institutions in Germany by the EU and the federal government for projects with a primarily natural sciences orientation. The data basis includes the

[86] The case study on the Faculty of Chemistry and Biochemistry at the University of Bochum has already shown that research in the scientific discipline of natural science is highly interdisciplinary (cf. Figure 4-1).

funding areas "large-scale equipment for basic research", "geosciences" and "astronomy and astrophysics". The priority area "global change and ecosystems" will be incorporated from the Sixth EU Framework Programme. While the institutes of the Max Planck Society, with a total of €97 million, received the largest share of DFG funding for basic research in the non-university sector, the Leibniz and Helmholtz Associations also proved to be particularly active research organisations in terms of federal and EU funding in the programmes considered here[87].

Network Structures between HEIs and Non-University Research Institutions

The network analyses show, for a start, that the geographic proximity of research organisations plays a crucial role in the natural sciences, as illustrated in Figure 4-8 by several local cooperative structures. At the same time, the visual representation identifies just as many interregional connections as for the other scientific disciplines, resulting in a very high degree of networking in the natural scientific research landscape[88]. The following analysis covers a total of seven Graduate Schools, eleven Clusters of Excellence and DFG Research Centres, 53 Research Units and 56 Collaborative Research Centres, in which a total of 135 research institutions participated during the reporting period[89].

A tightly linked network of relationships is evident in the Berlin area. Closer

[87] This is primarily due to the federal and EU funding areas taken into account here, which are sharply focused on geoscientific activities in the non-university sector. Moreover, the volume of federal funding allocated to the MPS is largely traceable to the funding area "astronomy and astrophysics". During the reporting period, the Max Planck Institutes for astronomy, astrophysics, extraterrestrial physics, gravitational physics, radio astronomy and solar system research managed to attract almost €50 million. Tables A-14, A-21 and A-24 in the appendix give further information on the funding allocated by the DFG, the EU and the federal government to non-university research institutions.

[88] Besides the TU and LMU Munich and the universities of Cologne and Bonn, high local centralisation in research networks, defined by the number of partner institutions that a HEI cooperated with during the reporting period, is also exhibited, for example, by the universities in the Berlin area or in the Ruhr region. The University Alliance Metropolis Ruhr, previously discussed in Section 3.3, should be mentioned here in connection with the latter example. The collaborations between the various HEIs are also expressed by participations in the Coordinated Programmes of the DFG. As regards trans-regional cooperation between HEIs, mention should be made of the universities of Bonn and Mainz, which have a total of five joint participations, including three Research Units, one Graduate School and a Transregional Collaborative Research Centre.

[89] Further information on the network analyses presented here and details regarding the data basis and methodology can be found in Section A.4 in the appendix.

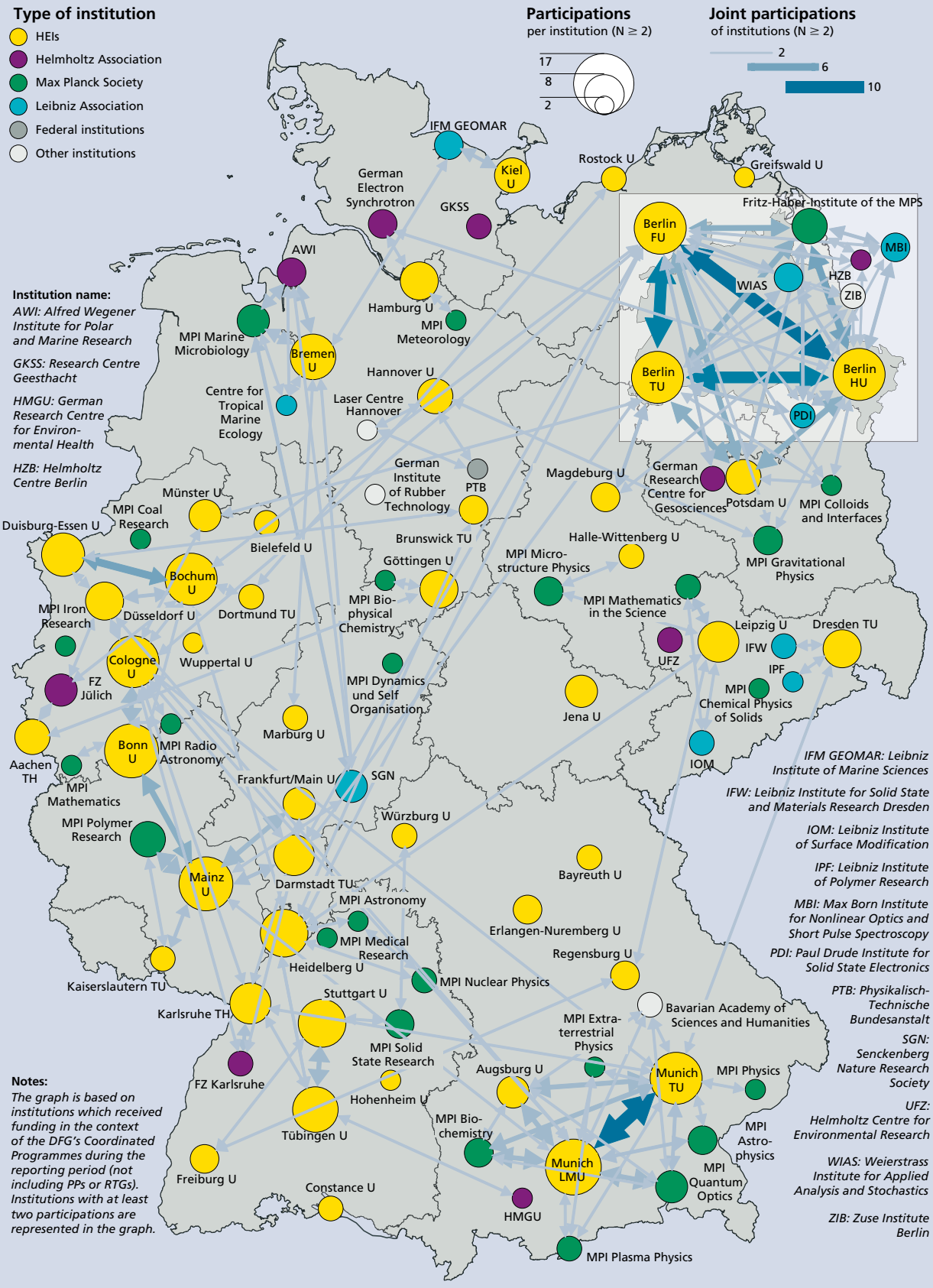
Table 4-9:
Funding statements for research institutions: Research funding by the DFG, the EU and the federal government by type of institution in the natural sciences

Type of institution	DFG awards		Direct R&D project funding by the federal government		R&D funding in FP6	
	Mio. €	%	Mio. €	%	Mio. €	%
Higher education institutions	**1,170.6**	**83.0**	**272.5**	**64.1**	**34.1**	**40.3**
Non-university research institutions	**239.7**	**17.0**	**152.9**	**35.9**	**50.5**	**59.7**
Max Planck Society	97.2	6.9	57.6	13.5	9.6	11.3
Fraunhofer Society	0.7	0.1	4.3	1.0	1.0	1.2
Helmholtz Association	41.4	2.9	41.7	9.8	20.2	23.9
Leibniz Association	78.8	5.6	26.9	6.3	10.2	12.1
Federal institutions	7.1	0.5	6.6	1.6	2.3	2.7
Other institutions	14.4	1.0	15.7	3.7	7.2	8.6
Institutions overall	**1,410.3**	**100.0**	**425.4**	**100.0**	**84.6**	**100.0**

Notes:
The calls for proposals in the EU's FP6 refer to a period of four years (2002 to 2005). The funding totals shown here have been converted to a three-year period corresponding to the reporting years taken into account for funding by the DFG and the federal government. The institutions considered here received a total of € 112.8 million in the EU's FP6.

Data basis and sources:
Deutsche Forschungsgemeinschaft (DFG): DFG awards 2005 to 2007.
Federal Ministry of Education and Research (BMBF): Direct R&D project funding by the federal government 2005 to 2007 (project database PROFI).
EU Office of the BMBF: German participations in the Sixth EU Framework Programme from 2002 (project data as of 02.06.2008).
Calculations by the DFG.

Figure 4-8:
Participations of research institutions in the DFG's Coordinated Programmes and the resulting cooperative relationships in the natural sciences



examination of the specific programmes involved reveals that close cooperation is especially prominent in the field of mathematics; for example, in the framework of the DFG Research Centre "Matheon" and the Graduate School "Berlin Mathematical School". With its centre at the TU Berlin, this school integrates researchers from the FU and HU Berlin, from the Konrad Zuse Centre for Information Technology and from the Weierstraß Institute for Applied Analysis and Stochastics. Moreover, in the field of chemistry, the Fritz Haber Institute is integrated in a network with the Berlin HEIs by means of numerous DFG Coordinated Programmes[90].

There are many non-university research institutions in Munich conducting research above all in the field of physics, with which the local universities cooperate intensively. Dense networks have been formed, for example, with several neighbouring Max Planck institutes, including the MPI for Physics, the MPI of Quantum Optics[91], the MPI for Plasma Physics, the MPI for Astrophysics and the MPI for Extraterrestrial Physics, as with other non-university research institutions.

In Dresden there are close links between the TU and several institutes of the WGL and the MPS, in particular the IPF, the Leibniz Institute for Solid State and Materials Research (IFW), the Research Centre Dresden-Rossendorf (FZD) and the MPI for Chemical Physics of Solids. Research in the field of chemistry is the main focus of the natural sciences-oriented Coordinated Programmes conducted at this location. In Bonn, on the other hand, a closer inspection of the funded programmes reveals a "mathematic cluster". Bonn is home to the Hausdorff Centre for Mathematics and the Cluster of Excellence "Mathematics: Foundations, Models, Applications", which primarily integrates scientists from the University of Bonn and the MPI for Mathematics (cf. Figure 2-4 in Chapter 2).

Figure 4-8 also depicts a North German network between the universities of Bremen, Hamburg and Kiel and several non-university research institutions in the framework of the Coordinated Programmes of the DFG. The University of Kiel, for example, participates in several programmes together with its "affiliated institute", the Leibniz Institute for Marine Sciences (IFM GEOMAR). Similarly, the Alfred Wegener Institute for Polar and Marine Research (AWI), the MPI for Marine Microbiology and the Centre for Tropical Marine Ecology (ZMT) are tightly linked to the subject area of geosciences at the University of Bremen. Another cluster in the North German geosciences network is formed by the University of Hamburg, the MPI for Meteorology and the Research Centre Geesthacht, which work predominantly on questions relating to climate and environmental change[92].

Thematic Priorities of Higher Education Institutions

The question of what thematic priorities are set by HEIs in the natural sciences is addressed here with the aid of Table 4-10 and Figure 4-9. Table 4-10 lists the funding totals and ranking groups of the 40 HEIs with the overall highest volume of DFG awards in this scientific discipline between 2005 and 2007, and gives the same figures differentiated by four subject areas. In addition, Figure 4-9 illustrates the research profiles of these universities[93]. The HEIS are placed in a spectrum consisting of eighteen research fields in the natural sciences, according to the priorities they set in the context of DFG funding.

[90] In the years from 2005 to 2007, the DFG provided a total of €383.9 million for research projects in the subject area of chemistry (7 percent of the total volume). These funds were used to support research work at a total of 65 HEIs (€342.4 million) and 67 non-university research institutions (€39.7 million). Of these latter, the Fritz Haber Institute of the Max Planck Society (MPS) in Berlin was involved in a particularly large number of proposals for DFG projects in the field of chemistry (cf. Table A-14 in the appendix).

[91] The Max Planck Institute of Quantum Optics can be highlighted here as a single example of the networking between the universities and the non-university research institutions. It is integrated, for example, in the DFG Collaborative Research Centre 631 "Solid-State Based Quantum Information Processing" and in an array of other national cooperative projects and EU-funded projects. Furthermore, the institute is involved in two Clusters of Excellence approved in October 2006, through which, and especially through the "Munich-Centre for Advanced Photonics", the above-mentioned institutions are linked.

[92] If one were to add the network programmes of the EU and the federal government to the network analysis presented here, the visualisation of forms of cooperation in the geosciences in the North German area would be significantly intensified.

[93] See also Section 3.1 on the methodology of the profile analyses presented here. Table A-9 in the appendix states the figures that form the basis of the profile graph.

Table 4-10:
Ranking analysis of the 40 HEIs with the highest volume of DFG awards 2005 to 2007 in the natural sciences

Higher education institution	DFG awards in total									of which	
	Absolute funding amounts							Funding amounts relative to size		2005 up to 2007 not incl. ExIn	1st & 2nd funding line of the ExIn for 3 years
	Total			of which				DFG awards per prof.[5]	Number of professors in 2006		
				CHE[1]	PHY[2]	MAT[3]	GEO[4]				
	Position	Mio. €	cum. %	Mio. €	Mio. €	Mio. €	Mio. €	Tsd. € per prof.	No.	Mio. €	Mio. €
Munich LMU	1	58.3	5.0	13.2	34.7	2.8	7.7	510.8	114	33.7	24.6
Bonn U	2	57.9	9.9	6.8	16.3	21.7	13.1	546.3	106	44.2	13.7
Hamburg U	3	49.6	14.2	5.4	20.6	1.3	22.3	373.2	133	38.5	11.1
Munich TU	4	48.7	18.3	14.4	30.3	2.0	2.1	580.6	84	27.2	21.5
Mainz U	5	44.5	22.1	13.3	22.0	1.0	8.3	641.5	69	42.1	2.4
Heidelberg U	6	39.0	25.5	16.0	12.1	4.5	6.4	504.9	77	29.6	9.3
Berlin FU	7	37.1	28.6	11.0	11.6	5.7	8.9	402.9	92	30.6	6.5
Karlsruhe TH	8	36.9	31.8	11.2	15.6	1.2	8.9	499.1	74	32.8	4.1
Bremen U	9	35.6	34.8	1.1	6.1	5.4	23.0	468.7	76	31.2	4.4
Münster U	10	34.8	37.8	15.3	4.9	7.8	6.9	351.3	99	34.8	0.0
Erlangen-Nuremberg U	11	33.2	40.6	17.3	11.4	2.7	1.7	381.4	87	20.5	12.7
Hannover U	12	32.9	43.4	4.0	21.3	1.7	5.9	414.6	79	20.7	12.2
Cologne U	13	31.3	46.1	4.6	16.3	2.5	7.9	332.8	94	29.6	1.7
Berlin TU	14	31.3	48.8	11.2	5.2	12.2	2.6	383.7	81	23.6	7.7
Berlin HU	15	31.0	51.4	8.8	8.6	8.4	5.2	384.2	81	28.2	2.9
Bochum U	16	30.7	54.1	7.6	14.4	1.7	7.0	355.6	86	29.5	1.2
Göttingen U	17	30.4	56.7	8.9	12.1	3.1	6.3	392.4	78	29.7	0.7
Frankfurt/Main U	18	28.8	59.1	15.0	4.1	1.0	8.6	286.0	101	22.8	6.0
Aachen TH	19	28.0	61.5	14.3	5.1	5.1	3.6	401.0	70	21.6	6.4
Stuttgart U	20	27.2	63.8	8.4	11.2	4.1	3.5	494.8	55	22.9	4.3
Darmstadt TU	21	23.2	65.8	5.5	9.1	6.7	2.0	270.0	86	15.7	7.5
Würzburg U	22	22.6	67.7	8.6	8.4	4.2	1.4	322.7	70	21.8	0.8
Jena U	23	20.1	69.5	5.4	7.1	1.0	6.6	270.6	74	19.2	0.8
Kiel U	24	20.1	71.2	5.0	3.1	0.2	11.8	318.1	63	14.9	5.2
Bayreuth U	25	18.9	72.8	9.3	3.1	1.3	5.3	286.9	66	18.5	0.5
Dresden TU	26	18.8	74.4	6.6	7.0	1.0	4.2	227.4	83	18.3	0.5
Regensburg U	27	18.5	76.0	6.5	10.1	1.5	0.4	352.7	53	18.5	0.0
Freiburg U	28	18.3	77.5	7.7	5.8	2.8	2.0	324.3	56	17.2	1.0
Tübingen U	29	17.5	79.0	3.1	7.5	1.8	5.1	263.5	67	16.7	0.8
Bielefeld U	30	17.3	80.5	4.7	6.7	5.8	0.2	328.1	53	15.3	2.0
Duisburg-Essen U	31	17.0	82.0	3.0	10.7	1.7	1.6	224.9	76	17.0	0.0
Constance U	32	15.9	83.3	3.1	10.7	0.5	1.6	455.1	35	14.7	1.2
Leipzig U	33	15.5	84.6	6.7	5.3	1.4	2.1	225.9	69	13.2	2.3
Düsseldorf U	34	15.4	86.0	5.2	9.5	0.6	0.1	349.7	44	15.4	0.0
Dortmund TU	35	13.3	87.1	3.9	5.4	3.8	0.2	204.7	65	13.3	0.0
Kaiserslautern TU	36	12.4	88.2	3.6	6.5	1.9	0.5	234.3	53	11.9	0.6
Ulm U	37	11.4	89.1	8.4	2.0	1.0	0.0	307.1	37	11.3	0.1
Augsburg U	38	10.7	90.0	0.9	8.5	0.8	0.4	254.2	42	9.4	1.3
Potsdam U	39	10.6	91.0	2.2	2.2	1.3	5.0	183.3	58	10.6	0.0
Marburg U	40	10.4	91.8	4.2	4.4	0.3	1.5	182.8	57	10.4	0.0
Position 1 to 40 overall	**01-40**	**1,075.0**	**91.8**	**311.2**	**416.5**	**135.5**	**211.8**	**–**	**2,941**	**897.1**	**177.9**
Other HEIs	**41-86**	**95.5**	**8.2**	**31.2**	**34.7**	**11.6**	**18.0**	**–**	**858**	**94.4**	**1.1**
HEIs overall	**01-86**	**1,170.6**	**100.0**	**342.4**	**451.2**	**147.1**	**229.9**	**308.1**	**3,799**	**991.6**	**179.0**
Based on: No. of HEIs	**86**			**65**	**66**	**68**	**66**	**86 / 81**	**81**	**86**	**37**

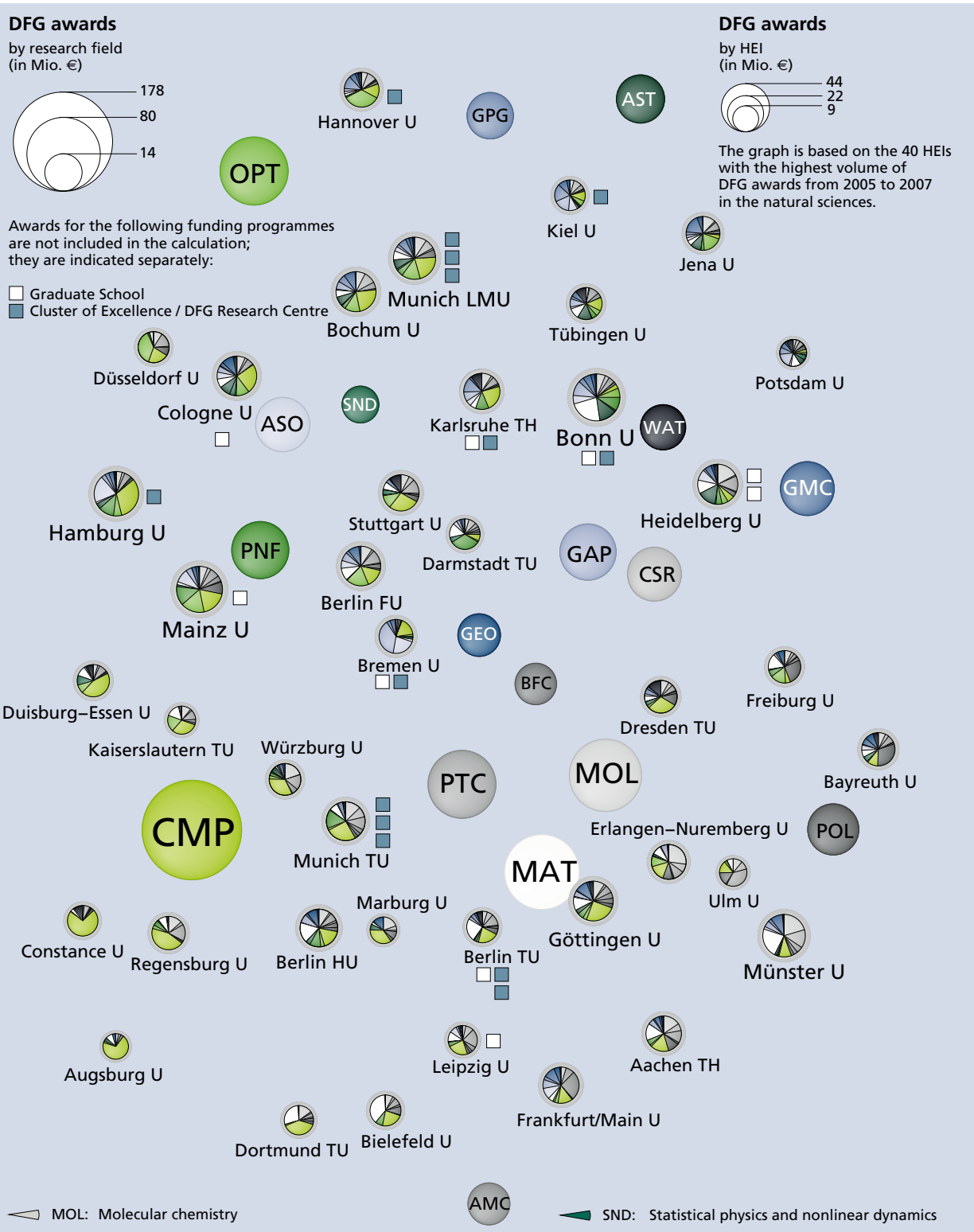
Key to ranking groups:

1st to 10th position | 11th to 20th position | 21st to 30th position | 31st to 40th position | 41st to 60th position | 61st and subsequent

Notes:
For methodical reasons, the Excellence Initiative funding decisions made at the end of 2006 and the end of 2007 are included in the calculation in the form of three-year awards rather than five-year awards. Awards in the third funding line (Institutional Strategies) apply to the entire HEI and are therefore excluded here. Further remarks on methodology, with particular reference to the handling of the Excellence Initiative, can be found in the appendix.
[1] Subject area chemistry.
[2] Subject area physics.
[3] Subject area mathematics.
[4] Subject area geosciences.
[5] The calculation only includes HEIs which employed 30 or more professors full-time in the scientific discipline under consideration here.

Data basis and sources:
Deutsche Forschungsgemeinschaft (DFG): DFG awards 2005 to 2007.
Federal Statistical Office (DESTATIS): Professors working full-time at universities 2006 (calculation based on full-time equivalents).
Calculations by the DFG.

Figure 4-9:
Funding profiles of HEIs: Subject map based on DFG awards in the natural sciences



It emerges from the table that during the period from 2005 to 2007 the awards granted by the DFG to the HEI sector amounted to €342 million in the subject area of chemistry, €147 million in mathematics and €230 million in the geosciences. At over €451 million, the largest share of the funds awarded by the DFG in the natural sciences went to the subject area of physics.

The LMU Munich received over €58 million, which was the highest funding volume in the natural sciences, followed closely by the universities of Bonn (just under €58 million) and Hamburg (€50 million). The good position of the LMU Munich as regards research in the natural sciences is due to the activities of researchers working in all four of the subject areas differentiated here. The Bavarian university is in the top-ranking group in chemistry, in physics and in the geosciences and is in the second group in mathematics. The LMU Munich has a correspondingly high position in the ranking of DFG reviewers and members of DFG Review Boards[94] (cf. Table 4-11) and the attention received by the university particularly from AvH-funded guest researchers from abroad[95] is also high (cf. Table 4-12)[96].

The research profiles visualised in Figure 4-9, which is based on an institution-specific arrangement of the 18 research fields distinguished by the DFG within the natural sciences, present a highly differentiated picture. The graph presents a spectrum that ranges from the research fields assigned to physics at the left of the image, to the geosciences at the top right, to the areas of chemistry and mathematics at the lower right of the image. Along with those few HEIs with a broader subject portfolio, such as the universities of Berlin (FU) and Stuttgart, situated here at the centre of the graph, there are numerous institutions which place a distinct emphasis on particular research fields.

These include the University of Constance (lower left), whose research priorities in condensed matter physics (CMP) are clearly reflected by its DFG funding profile: Constance acquired more than two-thirds of its DFG awards for natural scientific research projects in this research field. The University of Constance also belongs to the group of HEIs with the most DFG awards in this area (cf. Table A-9 in the appendix). Examples of universities with a stronger focus on chemistry include the universities of Erlangen-Nuremberg, Frankfurt on the Main and Münster. A further example of a HEI with a distinct focus in the natural sciences is offered by the University of Hannover at the top of the image. This institution received a substantial share of its DFG awards for projects in the research fields of optics, quantum optics, and the physics of atoms, molecules and plasmas (OPT).

The University of Bonn, with a funding volume of €10.1 million, together with the TU Berlin, was already the institution with the highest DFG funding in the subject area of mathematics outside the Excellence Initiative. It was able to further enhance its thematic priority in the area of mathematics by means of the Excellence Initiative. Acquisition of the Cluster of Excellence enabled the University of Bonn to more than double its funding volume in this subject area to €21.7 million, and thus take a clear lead over the other universities (cf. Table 4-10)[97]. In contrast to the University of Bonn, which has a very broad spectrum of natural scientific research fields (cf. Figure 4-9), the funding profiles of the LMU Munich

[94] The institution specific figures for DFG reviewers are reported in tables A-15 (HEIs) and A-16 (non-university research institutions) in the appendix. Information on DFG Review Board members can be found in tables A-17 (HEI) and A-18 (non-university research institutions) in the appendix.

[95] The HEI-specific figures on international appeal are reported in the tables A-25 (AvH) and A-26 (DAAD) in the appendix, differentiated subject areas.

[96] As far as the ERC is concerned, the greatest share of the altogether 160 natural sciences projects (81 Starting Grants and 79 Advanced Grants) approved in the two first calls for proposals was assigned to locations in the UK (13 percent). The second position is divided between France and Germany, each of which has a share of 11 percent, followed closely by Italy. The most successful locations are the institutes of the CNRS (France) with eight ERC grants. They are followed by the University of Cambridge (UK) and the Consiglio Nazionale delle Ricerche (Italy), with five ERC grants each. Third position is shared between the Israel Institute of Technology, the Hebrew University Jerusalem and the University of Heidelberg with four ERC grants each (cf. Table 4-12).

[97] The University of Bonn thereby has a 15 percent share of the total funding allocated to 68 universities in the subject area of mathematics. The five universities with the most awards already collected about 39 percent, and the universities of the top ranking group (positions one to ten) collected about 57 percent of the DFG awards.

Table 4-11:
Reviewers and members of the Review Boards of the DFG by HEI in the natural sciences

DFG reviewers			Members of DFG Review Boards		
Higher education institution	**No.**	**cum. %**	**Higher education institution**	**No.**	**cum. %**
Bonn U	83	3.9	Münster U	6	6.6
Munich LMU	71	7.1	Berlin HU	5	12.1
Hamburg U	70	10.4	Göttingen U	5	17.6
Heidelberg U	67	13.5	Munich LMU	5	23.1
Münster U	64	16.4	Berlin FU	4	27.5
Erlangen-Nuremberg U	63	19.3	Hannover U	4	31.9
Göttingen U	61	22.1	Karlsruhe TH	4	36.3
Aachen TH	60	24.9	Bielefeld U	3	39.6
Munich TU	59	27.6	Bremen U	3	42.9
Bremen U	58	30.3	Dresden TU	3	46.2
Cologne U	57	32.9	Hamburg U	3	49.5
Freiburg U	57	35.6	Kiel U	3	52.7
Karlsruhe TH	57	38.2	Munich TU	3	56.0
Berlin TU	55	40.7	Oldenburg U	3	59.3
Stuttgart U	52	43.2	Stuttgart U	3	62.6
Duisburg-Essen U	52	45.5	Würzburg U	3	65.9
Berlin FU	51	47.9	Bayreuth U	2	68.1
Bochum U	51	50.3	Chemnitz TU	2	70.3
Mainz U	50	52.6	Halle-Wittenberg U	2	72.5
Kiel U	50	54.9	Heidelberg U	2	74.7
			Leipzig U	2	76.9
			Magdeburg U	2	79.1
			Marburg U	2	81.3
Position 1 to 20 overall	**1,188**	**54.9**	**Position 1 to 20 overall**	**74**	**81.3**
Other HEIs	**976**	**45.1**	**Other HEIs**	**17**	**18.7**
HEIs overall	**2,164**	**100.0**	**HEIs overall**	**91**	**100.0**
Based on: No. of HEIs	**84**		**Based on: No. of HEIs**	**40**	

Data basis and source:
Deutsche Forschungsgemeinschaft (DFG): Reviewers of proposals submitted within the framework of the Individual Grants Programme and Coordinated Programmes 2005 to 2007 and elected members of DFG Review Boards for the term of office 2008 to 2011.
Calculations by the DFG.

and TU Munich show a distinct emphasis on research fields in the subject area of physics. At these two Munich universities, DFG funding for basic research in physics represents more than half of the funding they acquired in the natural sciences (cf. Table 4-10). They both belong to the group of research institutions with the highest funding volume in the subject area of physics.

Comparison of Funding Structures by Funding Source

It is important to stress, especially with reference to physics, that any comparative analysis of HEIs with regard to their acquisition of third-party funding must also take into account funding measures by other important funding institutions. Though the Deutsche Forschungsgemeinschaft is the largest single funding body for externally funded research at HEIs[98], the figures presented here only permit us to draw tentative conclusions regarding the thematic "research profile" of a HEI in the area of basic research in physics. In order to get a broader view of the research landscape in physics, it is particularly important to incorporate funding allocated by the federal government for training and research in the funding area of "large-scale equipment for basic research".

The funding area "large-scale equipment for basic research" covers for the most part physics-related research priorities, such as the investigation of con-

[98] See also Figure 2-1 in Chapter 2 and the subject-specific remarks in Section 2.9.

Table 4-12:
International appeal of HEIs: The most commonly chosen host universities by AvH-, DAAD-, and ERC-funded researchers in the natural sciences

Alexander von Humboldt Foundation			German Academic Exchange Service[1)]		
Host university	**No. of visits**	**cum. %**	**Host university**	**No. of recipients**	**cum. %**
Munich TU	107	5.7	Berlin HU	35	5.3
Munich LMU	98	11.0	Potsdam U	26	9.3
Heidelberg U	92	15.9	Berlin FU	25	13.1
Bonn U	71	19.7	Karlsruhe TH	23	16.6
Berlin FU	68	23.3	Tübingen U	23	20.1
Erlangen-Nuremberg U	64	26.7	Jena U	22	23.4
Berlin HU	63	30.1	Munich LMU	22	26.8
Bochum U	61	33.4	Berlin TU	21	30.0
Frankfurt/Main U	60	36.6	Dresden TU	19	32.9
Göttingen U	58	39.7	Erlangen-Nuremberg U	18	35.6
Münster U	51	42.4	Kaiserslautern TU	18	38.4
Aachen TH	50	45.1	Stuttgart U	18	41.1
Karlsruhe TH	48	47.6	Bochum U	17	43.7
Hamburg U	42	49.9	Frankfurt/Main U	17	46.3
Bayreuth U	40	52.0	Heidelberg U	17	48.9
Würzburg U	40	54.1	Giessen U	16	51.3
Berlin TU	39	56.2	Munich TU	16	53.7
Stuttgart U	39	58.3	Aachen TH	15	56.0
Mainz U	38	60.3	Göttingen U	15	58.3
Bielefeld U	37	62.3	Mainz U	15	60.6
Regensburg U	37	64.3			
Position 1 to 20 overall	**1,203**	**64.3**	**Position 1 to 20 overall**	**398**	**60.6**
Other HEIs	**668**	**35.7**	**Other HEIs**	**259**	**39.4**
HEIs overall	**1,871**	**100.0**	**HEIs overall**	**657**	**100.0**
Position 1 to 20 overall	**66**		**Position 1 to 20 overall**	**49**	

Host universities of ERC-funded researchers (no. of recipients):
Augsburg U (1), Bayreuth U (1), Berlin FU (1), Bochum U (1), Constance U (1), Duisburg-Essen U (1), Frankfurt/Main U (1), Giessen U (1), Hamburg U (1), Heidelberg U (4) and Tübingen U (2).

[1)] For DAAD-funded researchers, subject-specific data was available for 51 HEIs, which had a total expenditure of at least one million euros per year according to the DAAD funding statement.

Data basis and sources:
Alexander von Humboldt Foundation (AvH): Research visits by AvH guest researchers from 2003 to 2007.
German Academic Exchange Service (DAAD): Researchers from abroad funded between 2005 and 2007.
European Research Council (ERC): Researchers funded in the two first calls for proposals (project database CORDIS; as of 15.04.2009).
Calculations by the DFG.

densed matter, the structure and interaction of elementary particles and research in the area of mathematics, astrophysics, hadrons and nuclear physics. Large-scale equipment is an essential component of the German research infrastructure. Selections are based on a comprehensive review process involving among other things the German Council of Science and Humanities (Wissenschaftsrat) and external reviewers. The large-scale equipment is constructed and operated by the major research centres of the HGF and by the institutes of the WGL and MPS or by international research organisations including CERN, the European Organisation for Nuclear Research in Geneva. Research using large-scale equipment is promoted to a significant extent within the framework of federally funded collaborative research, in which cooperation between external research groups and the operators of major instrumentation in national and international research centres is of particular importance. Selected research projects using the large-scale equipment are facilitated and financed by specifically targeted funding measures that primarily address HEIs.

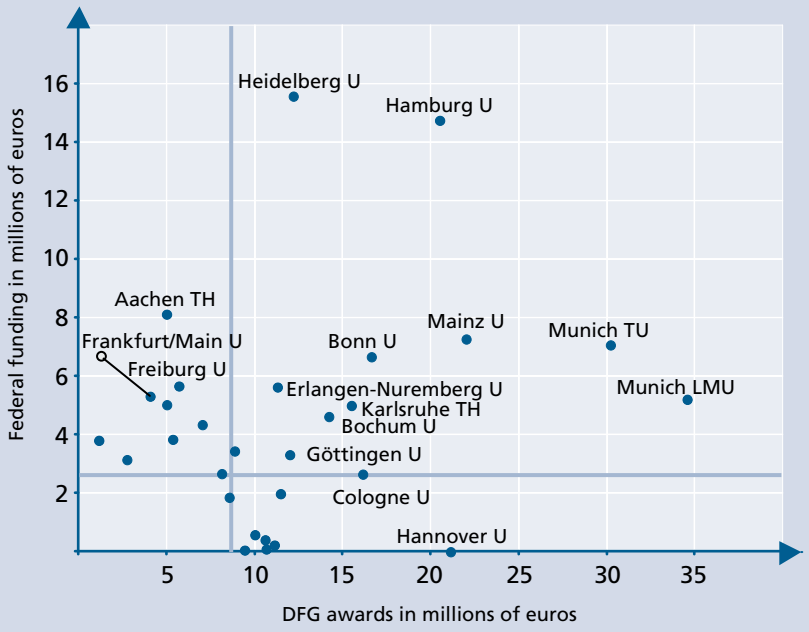
Federal funding generally plays an above-average role in physics-related research fields and the funding of basic research in physics is coordinated complementary by the DFG and the feder-

al government (extensive infrastructure investment by the BMBF in the priority area of "large-scale equipment for basic research" on the one hand, and not-so cost-intensive DFG funding of scientific topics on the other). In consequence, Table 4-10 and the HEIs with the highest DFG funding volume in physics should not be evaluated in isolation from the relevant funding activities of the federal government. Figure 4-10 picks up on this topic with a comparative juxtaposition of the HEIs involved in this federal funding programme with the most active DFG institutions.

In Figure 4-10, the volume of funding allocated to the HEI sector by the DFG (€451 million in total) and by the federal government in the framework of its direct R&D project funding (€144 million in total) is examined in a scatter diagram. It covers the 20 HEIs which received the highest funding volumes from the DFG and the federal government for basic research projects in physics from 2005 to 2007. The diagram is divided into four fields by two blue lines. To the right of the vertical blue line are the HEIs with the most awards in the DFG subject area of physics. The HEIs above the horizontal blue line are the 20 HEIs with the highest income in the federal funding area of "large-scale equipment for basic research". Accordingly, the HEIs situated in the top-right field are among the 20 HEIs with the highest funding totals from both the DFG and the federal government in the funding areas considered here. The diagram reveals a close relationship between DFG awards and the funding provided by the federal government. Eleven of the 20 leading DFG-funded HEIs are also found among the 20 HEIs with the highest income from the direct R&D project funding of the federal government.

The universities of Heidelberg and Hamburg are situated at the top right of

Figure 4-10:
Comparison of research funding in physics-related funding areas of the DFG and the federal government by HEI



Notes:
The diagram is based on data for the 20 HEIs with the highest funding incomes in the funding area "large-scale equipment for basic research" in the federal government's R&D project funding programmes and in the DFG's subject area of "physics". Shown here are the names of the ten HEIs with the highest funding income from the relevant funding sources. To the right of the vertical blue line are the 20 HEIs with the most DFG awards, and above the horizontal blue line are the 20 HEIs with the highest income from the federal government.

Data basis and sources:
Deutsche Forschungsgemeinschaft (DFG): DFG awards 2005 to 2007.
Federal Ministry of Education and Research (BMBF): Direct R&D project funding by the federal government 2005 to 2007 (project database PROFI).
Calculations by the DFG.

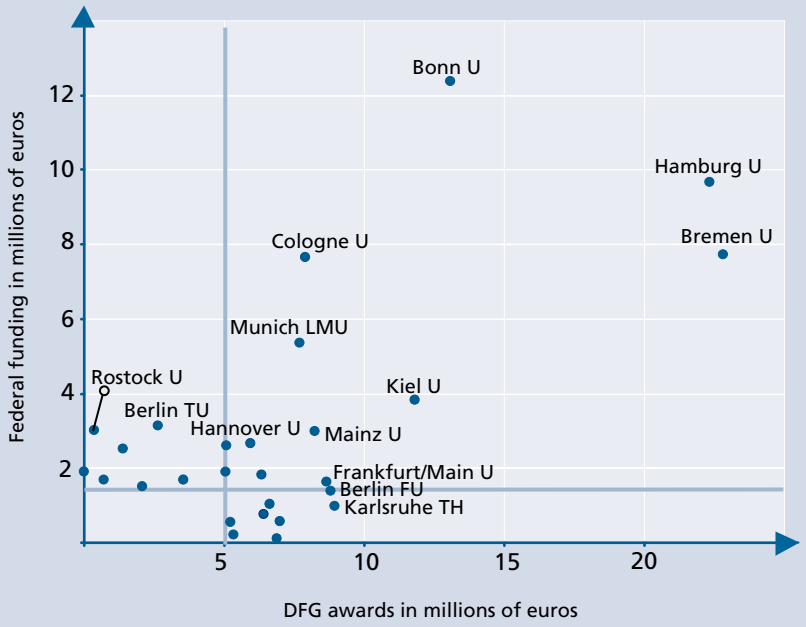
the diagram, which means that their funding volumes in the federal programme are significantly higher than those of the other HEIs, but they are also among the ten HEIs with the highest DFG funding in physics. The University of Heidelberg received extensive funding among other things for research activities at CERN's Large Hadron Collider (LHC). The University of Hamburg acquired federal funding especially for experiments on the FLASH free electron laser at DESY. The LMU and TU Munich are found among the HEIs with the most DFG awards, with a clear margin over the HEIs that follow. This is primarily explained by the success of these institutions in the Excellence Initiative, for example, with the jointly supported Cluster of Excellence "Origin and Structure of the Universe"[99]. Besides its DFG awards, the TU Munich received €7 million in federal funding for researching condensed matter, hadrons and nuclear physics and for its involvement in the Munich research reactor.

The overall picture shows that along with the above-mentioned HEIs, the universities of Bonn, Mainz, Bochum, Erlangen-Nuremberg and Karlsruhe were able to acquire significant shares of DFG as well as federal funding provided for R&D projects. By way of contrast, the TH Aachen concentrates primarily on federal funding, while the University of Hannover pays more attention to DFG funding. As a supplement to the data presented in Table 4-10 for the DFG subject area of physics, we now have an overall view of the differentiated funding structures associated with basic research in physics.

Following on from the scatter diagram discussed above in relation to basic research in physics, Figure 4-11 offers an analysis of the funding structures for

[99] Further information on grants in the Excellence Initiative for projects focused on physics research can be found in Figure 2-4 in Chapter 2.

Figure 4-11:
Comparison of research funding in geoscientific funding areas of the DFG and the federal government by HEI



Notes:
The diagram is based on data for the 20 HEIs with the highest funding incomes in the funding area of "geosciences" in the federal government's R&D project funding programmes and in the DFG subject area of "geosciences". Shown here are the names of the ten HEIs with the highest funding income from the relevant funding sources. To the right of the vertical blue line are the 20 HEIs with the most DFG awards, and above the horizontal blue line are the 20 HEIs with the highest income from the federal government.

Data basis and sources:
Deutsche Forschungsgemeinschaft (DFG): DFG awards 2005 to 2007.
Federal Ministry of Education and Research (BMBF): Direct R&D project funding by the federal government 2005 to 2007 (project database PROFI).
Calculations by the DFG.

the DFG and the federal government in the geosciences. In the federal government's direct R&D project funding, the funding area geosciences includes the thematic funding fields "geosciences and raw material supplies", "marine and polar research, marine technology" and the research priority "sustainable development, global change" which focuses on climate, biospheres and atmospheric research. In the DFG's subject area of geosciences, HEIs received a total of €230 million, while the total funding allocated to HEIs in the federal government's direct R&D project funding amounted to €101 million in the reporting period.

The diagram identifies a small group of universities which stand out clearly from the other HEIs, both in terms of DFG funding and federal funding. The universities of Bremen, Hamburg and Bonn received the most funding both from the DFG and from the federal government's direct R&D project funding. In the cases of Bremen and Hamburg, special reference should be made to the geosciences-oriented Clusters of Excellence they acquired in the Excellence Initiative. Within the scope of the programme "Global Change and the Hydrological Cycle" (GLOWA), the goal of which was to develop strategies for a sustainable and foresighted water resources management, the University of Bonn was especially active in terms of federal funding. Table 4-10 identifies the University of Kiel as another university which has been very active in terms of awards and which has a funding profile with a clear emphasis on the geosciences. More than half of its DFG awards in the natural sciences can be traced to research projects with a geosciences orientation. All three of these North German HEI locations also had success in the Excellence Initiative with Graduate Schools and Clusters of Excellence focused on the geosciences[100] (cf. Figure 4-9).

[100] These include, along with the University of Bremen's Graduate School "Global Change in the Marine Realm", the University of Hamburg's Cluster of Excellence "Integrated Climate System Analysis and Prediction", the University of Bremen's Cluster of Excellence "The Ocean in the Earth System" and the University of Kiel's Cluster of Excellence "The Future Ocean" (see also Figure 2-4 in Chapter 2).

4.4 Engineering Sciences

Not long ago, the DFG created a new subject classification system to deal with changes of emphasis which affected technical research in the engineering sciences. The new Review Board system was designed to reflect the state of the modern research landscape. Today, the DFG's Review Board system and the associated subject classification system are differentiated into significantly more research fields, which also have a distinctly different character from the former review committee-based subject areas[101]. For instance, besides the increasingly interdisciplinary nature of research and the necessity to incorporate new fields of activity, the reorganisation of the Review Boards was guided primarily by the goal of connecting applied research fields (such as manufacturing engineering or process engineering) with the important basic subjects (such as technical mechanics or fluid mechanics) upon which they depend. A total of ten research fields are now distinguished in the engineering sciences, and the subject spectrum ranges from production technology and process engineering, to computer science and system engineering, to construction engineering and architecture.

Funding Statements of Research Institutions

Section 2.9 and Table 4-13, which give statements of the funding received by research institutions from the DFG, the EU and the federal government, depict the engineering sciences, including the ten research fields mentioned above, as a scientific discipline that receives extensive funding from the DFG and the other funding sources. The remarks made in Chapter 2 on the funding structures of the DFG, the EU and the federal government have already shown that federal and EU funding concentrate more intensely on the hard sciences or application-oriented research. This is also evidenced by the significantly higher funding volumes provided for research in the engineering sciences by the federal government's direct R&D funding and by the

[101] A detailed description of the procedures of the Review Boards and of the reform of the DFG's review system in 2003 may be found online at http://www.dfg.de/en/dfg_profile/structure/statutory_bodies/review_boards/index.html. Moreover, Koch (2006) offers a deeper insight.

Sixth EU Framework Programme, compared to their funding statements for the other scientific disciplines.

As shown in Table 4-13, between 2005 and 2007 the federal government provided a total of € 1.3 billion in funding to universities and non-university research institutions for research in the funding priorities grouped in this scientific discipline. When converted to a three year period, a total of € 670 million was paid to German institutions in the context of the Sixth EU Framework Programme for projects in the discipline of engineering sciences. During the period 2005 to 2007, the volume of DFG awards for projects in the engineering sciences at institutions in Germany amounted to just under € 1.2 billion.

On the whole, the funding statements presented in Table 4-13 allow us to conclude that quite a number of non-university research institutions are competing for third-party funding in the engineering sciences. As regards the large research organisations, the profile analyses in Section 3.2 have already illustrated the distinct emphasis placed by the Fraunhofer Society on the research fields considered here. This overview confirms that fact. The Fraunhofer Institutes are thus among the most active non-university research institutions in terms of funding from all of the funding sources. However, it performed significantly stronger with the EU and the federal government, where it obtained a 20 percent share of the total funding allocated to HEIs and non-university research institutions, than with the DFG where its share was just fewer than two percent[102]. An examination of the institutions involved in the DFG's Coordinated Programmes and the resulting cooperative relationships within the research system, reveals that the institutes of the Fraunhofer Society are also important cooperation partners.

Network Structures between HEIs and Non-University Research Institutions

Figure 4-12 represents the cooperative relationships between research institutions in the engineering sciences in cartographic form. Altogether, the analysis reveals an extremely dense network of the most varied institutions cooperating

[102] Tables A-14, A-21 and A-24 in the appendix give further information on the funding allocated by the DFG, the EU and the federal government to non-university research institutions.

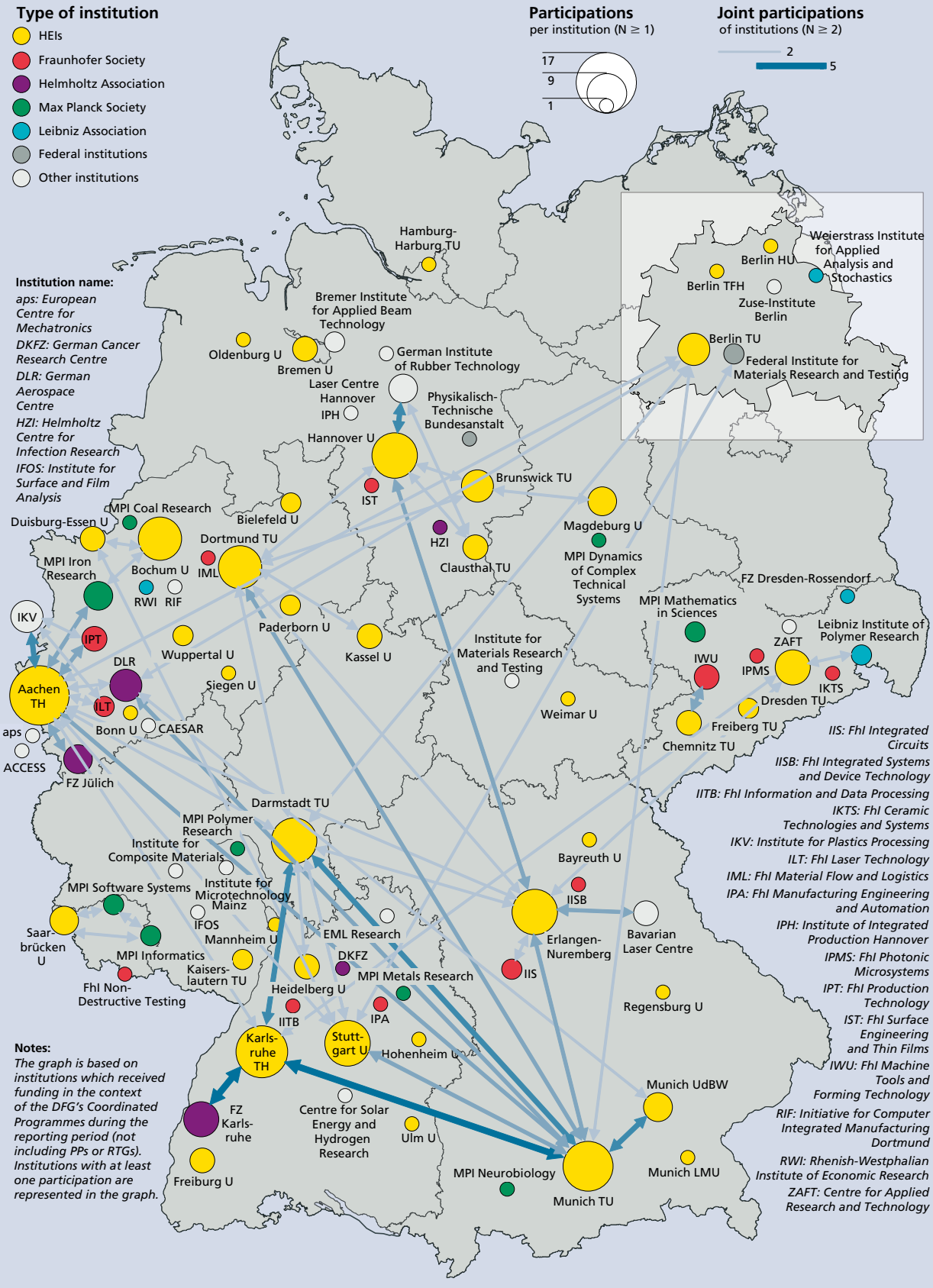
Table 4-13:
Funding statements for research institutions: Research funding by the DFG, the EU and the federal government by type of institution in the engineering sciences

Type of institution	DFG awards		Direct R&D project funding by the federal government		R&D funding in FP6	
	Mio. €	%	Mio. €	%	Mio. €	%
Higher education institutions	**1,074.7**	**90.1**	**572.8**	**43.7**	**297.4**	**44.4**
Non-university research institutions	**117.7**	**9.9**	**737.3**	**56.3**	**372.6**	**55.6**
Max Planck Society	18.9	1.6	25.1	1.9	18.8	2.8
Fraunhofer Society	20.3	1.7	257.4	19.6	133.0	19.9
Helmholtz Association	24.1	2.0	122.8	9.4	79.0	11.8
Leibniz Association	7.9	0.7	56.6	4.3	14.4	2.2
Federal institutions	8.8	0.7	25.5	1.9	14.7	2.2
Other institutions	37.8	3.2	250.0	19.1	112.7	16.8
Institutions overall	**1,192.4**	**100.0**	**1,310.1**	**100.0**	**670.0**	**100.0**

Notes:
The calls for proposals in the EU's FP6 refer to a period of four years (2002 to 2005). The funding totals shown here have been converted to a three-year period corresponding to the reporting years taken into account for funding by the DFG and the federal government. The institutions considered here received a total of € 893.4 million in the EU's FP6.

Data basis and sources:
Deutsche Forschungsgemeinschaft (DFG): DFG awards 2005 to 2007.
Federal Ministry of Education and Research (BMBF): Direct R&D project funding by the federal government 2005 to 2007 (project database PROFI).
EU Office of the BMBF: German participations in the Sixth EU Framework Programme from 2002 (project data as of 02.06.2008).
Calculations by the DFG.

Figure 4-12:
Participations of research institutions in the DFG's Coordinated Programmes and the resulting cooperative relationships in the engineering sciences



locally and nationally[103]. In this context, the RWTH Aachen obviously plays the role of a network node. With its tight network of relationships, this technical university is well-positioned as the core of a highly interactive local research cluster. There are very close links between the TH Aachen and the nearby Research Centre Jülich, the Institute of Plastics Processing (IKV), the MPI for Iron Research, or the FhI for Production Technology (IPT). The TH Aachen also has trans-regional ties with the technical universities in Berlin, Munich and Darmstadt as well as with the TH Karlsruhe. The outstanding position of the region around Aachen, along with its dense research network in the engineering sciences, is also evident in the Excellence Initiative. Altogether, the TH Aachen managed to acquire three Clusters of Excellence and a Graduate School[104].

Further regions may be identified in the network visualisation for the engineering sciences, which were able to significantly expand their cooperative relationships thanks to funding decisions in the Excellence Initiative. In Saarland, for instance, the establishment of the "Saarbrücken Graduate School of Computer Science" and the Cluster of Excellence "Multimodal Computing and Interaction" reinforced the existing information technology research cluster and intensified cooperation between the University of Saarbrücken and the Max Planck institutes for Informatics and for Software Systems (likewise in Saarbrücken). The example of Karlsruhe should also be highlighted. The close cooperation identified by the graph between the university and the Research Centre Karlsruhe is currently finding expression in the merger of the two institutions into the Karlsruhe Institute of Technology (KIT).

Further locations could be mentioned which exhibit long-standing cooperative relationships in the engineering sciences. For example, a cluster of programmes dealing with questions relating to production engineering has been formed in Lower Saxony, and especially in the area of Hannover. There are close regional links to the Laser Centre of Hannover and to the universities of Brunswick and Clausthal and nationally to other leading production engineering institutions such as the TU Dortmund and the University of Erlangen-Nuremberg. Strong local partnerships have also been established in Saxony between the TU Dresden and the Leibniz Institute of Polymer Research (IPF) or between the TU Chemnitz and the FhI for Machine Tools and Forming Technology (IWU), also situated in Chemnitz. There is an unmistakable triangle of cooperation between the technical universities in Munich and Darmstadt and the TH Karlsruhe, with four or more joint participations in the DFG's Coordinated Programmes in each direction.

Thematic Priorities of Higher Education Institutions

Table 4-14 lists the funding totals and ranking groups of the 40 HEIs with the highest overall volume of DFG awards in this scientific discipline between 2005 and 2007, and gives the same figures differentiated by three subject areas. Figure 4-13 also illustrates the research profiles of these universities[105]. The HEIs are placed in a spectrum consisting of the ten engineering sciences research fields mentioned above, according to the priorities they set in the context of DFG funding. The HEIs of the first four ranking groups account for almost 95 percent of all DFG funding received by scientists working at HEIs. The top ten HEIs, and especially the technical universities combined in the TU9 association[106], already collected over 60 percent of the funding.

Table 4-14 reveals that in the period 2005 to 2007 the DFG provided just over €73 million for the subject area of construction engineering and architecture

[103] The analysis takes into account Research Units, Collaborative Research Centres, DFG Research Centres, Graduate Schools and Clusters of Excellence. The larger the diameter of the circle, the more participations have been recorded for the institution in the Coordinated Programmes of the DFG during the reporting period. The graph only shows relationships between institutions that were involved in at least two programmes during the reporting period. Further information on the network analyses presented here and details regarding the data basis and methodology can be found in Section A.4 in the appendix.

[104] See also Table 2-4 in Chapter 2.

[105] See also Section 3.1 on the methodology of the profile analyses presented here. Table A-10 in the appendix states the figures that form the basis of the profile graph.

[106] Information on the TU9 HEIs can be found on the association's Internet site (www.tu9.de).

and almost €385 million for the subject area of computer science, system and electrical engineering. At almost €617 million, the greatest share of the funding provided to HEIs for research in the engineering sciences was granted in the subject area of mechanical engineering.[107] The TH Aachen received almost €156 million, which was the highest funding volume in the engineering sciences, followed by the technical universities in Darmstadt (€71 million) and Karlsruhe (€68 million). The outstanding position of the TH Aachen is also substantiated by the number of reviewers and Review Board members it supplied to the DFG[108] (cf. Table 4-15) and by the number of AvH- and DAAD-funded foreign scientists[109] (cf. Table 4-16) who chose the TH Aachen as their host institution[110].

Figure 4-13, which visualises research profiles based on DFG awards outside of the Excellence Initiative, depicts the TH Aachen with its well-balanced subject spectrum in a central position. At the same time, the TH Aachen has a leading position in the majority of the subject areas and research fields in its very broad subject portfolio. Altogether, the graph presents a spectrum that ranges from the areas of "heat energy technology, thermal machines and drives" (HTD) at the top of the image, to materials engineering (MEN) (bottom left), to the area of construction engineering and architecture (CEA) (bottom right), and to computer science (CSC) and system engineering (SYS) at the right of the image. A glance at the relatively larger HEIs (cf. Table 4-14), measured by the number of professors working in the engineering sciences, can shed some light on the question of specific profiles. When third-party funding by the DFG is broken down into different research fields, the above-mentioned TU9 HEIs emerge with broad subject portfolios similar to the TH Aachen's portfolio and are also predominantly situated at the centre of the graph. However, the University of Hannover, situated to the far-left of the image, next to the funding area symbol for production technology (PRO) has a research profile – similar to the TU Dortmund – which is distinctly focused on this research field. It is also by a significant margin the institution with the highest DFG funding volume in this area.

On the basis of this visualisation, it is also possible to ascribe characteristic priorities to the relatively smaller HEIs. Mention could be made, for example, of the TU Ilmenau, whose research priorities in the areas of micro- and nano-systems, systems engineering in the engineering sciences, and IT-based media and communication technology are clearly reflected in its DFG funding profile. The TU Ilmenau received more than half of its funding in the area of "computer science, system and electrical engineering", and a large share of the funding volume was focused on the research field of system engineering (SYS). The TU Ilmen-au is accordingly found in Figure 4-13 near this funding area (top right) and also belongs to the leading group of ten institutions with the highest DFG funding in this field (cf. Table A-10 in the appendix).

Moreover, the University of Paderborn (lower right) can be identified next to the symbol for computer science (CSC), along with the University of Saarbrücken whose specialisation in this field has already been referred to. Paderborn received almost €8 million of DFG funding in this area, putting it among the top five institutions. Almost one third of all DFG funding acquired by this university

[107] For the projects funded from 2006 to 2007 in the context of the Excellence Initiative, there is as yet no information available for the distribution of DFG awards between the three subject areas distinguished by the DFG, "mechanical and industrial engineering", "thermal and process engineering" and "material science and engineering". For statistical purposes they have been combined here into a single subject area, "mechanical engineering". Further information on the data basis used and the methodical approach can be derived from Section A.3 in the appendix.

[108] The institution-specific figures for DFG reviewers are reported in tables A-15 (HEIs) and A-16 (non-university research institutions) in the appendix. Information on DFG Review Board members can be found in the tables A-17 (HEI) and A-18 (non-university research institutions) in the appendix.

[109] The HEI-specific figures on international appeal are reported in the tables A-25 (AvH) and A-26 (DAAD) in the appendix, differentiated by 14 respectively 12 subject areas.

[110] As far as the ERC is concerned, the greatest share of the altogether 102 engineering sciences projects (56 Starting Grants and 46 Advanced Grants) approved in the two first calls for proposals was assigned to locations in the UK (26 percent), followed by France (17 percent) and Germany and Israel (10 percent). The most successful institutions were the Imperial College (UK) and the institutes of CNRS (France) with six ERC grants each. The most successful German institution in the engineering sciences was the Max Planck Society with four ERC grants.

Table 4-14:
Ranking analysis of the 40 HEIs with the highest volume of DFG awards 2005 to 2007 in the engineering sciences

Higher education institution	DFG awards in total								of which	
	Absolute funding amounts						Funding amounts relative to size		2005 up to 2007 not incl. ExIn	1st & 2nd funding line of the ExIn for 3 years
	Total			of which			DFG awards per prof.[4]	Number of professors in 2006		
				MEC[1]	CSE[2]	CEA[3]				
	Position	Mio. €	cum. %	Mio. €	Mio. €	Mio. €	Tsd. € per prof.	No.	Mio. €	Mio. €
Aachen TH	1	155.7	14.5	107.5	40.3	7.9	1,262.0	123	106.3	49.4
Darmstadt TU	2	70.7	21.1	54.0	15.6	1.1	619.4	114	56.2	14.5
Karlsruhe TH	3	67.6	27.4	38.4	24.7	4.6	570.9	118	65.4	2.3
Stuttgart U	4	67.0	33.6	40.9	18.8	7.3	507.0	132	49.0	18.0
Munich TU	5	62.6	39.4	25.2	30.4	7.0	421.1	149	43.1	19.5
Erlangen-Nuremberg U	6	59.8	45.0	46.6	13.0	0.3	848.2	71	45.8	14.1
Hannover U	7	50.6	49.7	41.2	7.1	2.2	576.8	88	47.4	3.1
Dresden TU	8	46.9	54.1	30.1	9.4	7.4	258.9	181	46.6	0.3
Dortmund TU	9	40.6	57.8	28.7	11.1	0.8	421.7	96	40.6	0.0
Brunswick TU	10	37.2	61.3	17.8	10.4	9.0	404.2	92	37.2	0.0
Berlin TU	11	35.3	64.6	23.4	10.4	1.4	254.9	139	32.6	2.7
Bremen U	12	34.7	67.8	21.0	13.6	0.0	721.0	48	32.4	2.3
Bochum U	13	29.4	70.6	18.1	4.1	7.2	457.8	64	28.4	1.0
Saarbrücken U	14	23.7	72.8	4.3	19.1	0.3	591.9	40	12.8	10.9
Chemnitz TU	15	19.4	74.6	13.3	6.2	0.0	380.7	51	19.4	0.0
Paderborn U	16	15.6	76.0	4.3	11.3	0.0	354.1	44	15.6	0.0
Hamburg-Harburg TU	17	14.5	77.4	6.0	4.8	3.6	157.9	92	14.5	0.0
Kaiserslautern TU	18	13.2	78.6	6.8	6.0	0.4	156.6	84	13.2	0.0
Duisburg-Essen U	19	12.7	79.8	7.8	3.8	1.1	156.7	81	12.7	0.0
Ilmenau TU	20	12.7	80.9	4.9	7.8	0.0	243.6	52	12.7	0.0
Freiburg U	21	12.3	82.1	1.2	11.0	0.0	385.6	32	10.6	1.6
Magdeburg U	22	11.2	83.1	7.0	4.2	0.0	185.0	61	11.2	0.0
Bielefeld U	23	10.8	84.1	2.0	8.9	0.0	-	11	3.5	7.3
Clausthal TU	24	10.3	85.1	9.7	0.6	0.0	239.3	43	10.3	0.0
Freiberg TU	25	8.5	85.9	8.1	0.3	0.1	184.9	46	8.5	0.0
Siegen U	26	8.4	86.7	3.3	4.8	0.4	105.3	80	8.4	0.0
Kassel U	27	8.4	87.5	5.1	1.4	2.0	98.1	86	8.4	0.0
Kiel U	28	7.1	88.1	2.6	4.2	0.3	206.5	34	5.4	1.7
Rostock U	29	6.8	88.7	2.8	4.0	0.0	129.5	53	6.8	0.0
Tübingen U	30	6.8	89.4	1.2	5.5	0.0	-	14	5.1	1.6
Ulm U	31	6.5	90.0	2.0	4.5	0.0	191.0	34	6.4	0.1
Heidelberg U	32	6.2	90.6	1.4	4.8	0.0	-	5	2.5	3.7
Weimar U	33	6.1	91.1	0.4	0.2	5.4	98.9	61	6.1	0.0
Jena U	34	5.6	91.6	1.6	4.0	0.0	-	16	5.5	0.1
Oldenburg U	35	5.1	92.1	0.3	4.7	0.1	-	18	5.1	0.0
Bonn U	36	5.0	92.6	1.0	3.9	0.1	-	20	4.6	0.4
Bayreuth U	37	4.9	93.0	3.2	1.7	0.0	-	21	4.9	0.0
Munich UdBW	38	4.6	93.5	2.0	2.1	0.5	43.7	106	3.6	1.0
Leipzig U	39	4.5	93.9	0.9	3.2	0.4	-	19	4.5	0.0
Berlin HU	40	4.5	94.3	1.0	3.5	0.0	-	18	4.5	0.0
Position 1 to 40 overall	**01-40**	**1,013.6**	**94.3**	**597.3**	**345.4**	**71.0**	**-**	**2,638**	**857.9**	**155.7**
Other HEIs	**41-97**	**61.1**	**5.7**	**19.5**	**39.3**	**2.2**	**-**	**583**	**60.5**	**0.7**
HEIs overall	**01-97**	**1,074.7**	**100.0**	**616.8**	**384.7**	**73.2**	**333.7**	**3,220**	**918.3**	**156.3**
Based on: No. of HEIs		**97**		**78**	**77**	**40**	**97 / 77**	**77**	**97**	**24**

Key to ranking groups:

1st to 10th position | 11th to 20th position | 21st to 30th position | 31st to 40th position | 41st to 60th position | 61st and subsequent

Notes:
For methodical reasons, the Excellence Initiative funding decisions made at the end of 2006 and the end of 2007 are included in the calculation in the form of three-year awards rather than five-year awards. Awards in the third funding line (Institutional Strategies) apply to the entire HEI and are therefore excluded here. Further remarks on methodology, with particular reference to the handling of the Excellence Initiative, can be found in the appendix.
[1] Subject area mechanical engineering.
[2] Subject area computer science, system and electrical engineering.
[3] Subject area construction engineering and architecture.
[4] The calculation only includes HEIs which employed 30 or more professors full-time in the scientific discipline under consideration here.

Data basis and sources:
Deutsche Forschungsgemeinschaft (DFG): DFG awards 2005 to 2007.
Federal Statistical Office (DESTATIS): Professors working full-time at universities 2006 (calculation based on full-time equivalents).
Calculations by the DFG.

Figure 4-13:
Funding profiles of HEIs: Subject map based on DFG awards in the engineering sciences

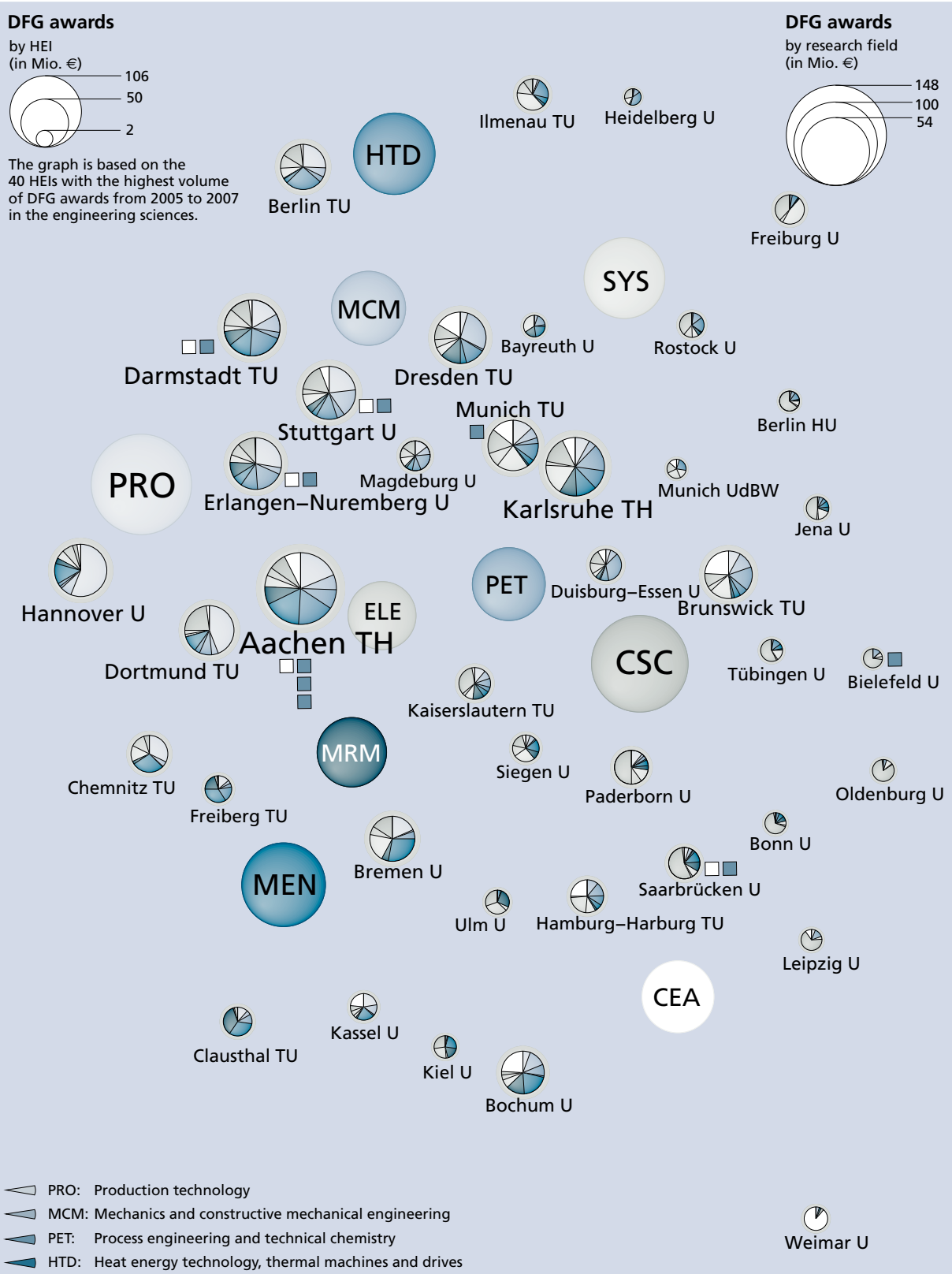


Table 4-15:
Reviewers and members of the Review Boards of the DFG by HEI in the engineering sciences

DFG reviewers			Members of DFG Review Boards		
Higher education institution	No.	cum. %	Higher education institution	No.	cum. %
Aachen TH	111	6.5	Aachen TH	10	9.8
Munich TU	98	12.2	Dresden TU	10	19.6
Stuttgart U	88	17.3	Munich TU	8	27.5
Dresden TU	85	22.3	Stuttgart U	8	35.3
Karlsruhe TH	82	27.1	Berlin TU	6	41.2
Berlin TU	80	31.7	Darmstadt TU	6	47.1
Darmstadt TU	73	36.0	Karlsruhe TH	6	52.9
Brunswick TU	60	39.5	Brunswick TU	4	56.9
Erlangen-Nuremberg U	56	42.7	Erlangen-Nuremberg U	4	60.8
Dortmund TU	49	45.6	Hannover U	4	64.7
Bochum U	46	48.3	Chemnitz TU	3	67.6
Hannover U	44	50.8	Duisburg-Essen U	3	70.6
Kaiserslautern TU	40	53.2	Freiberg TU	3	73.5
Hamburg-Harburg TU	34	55.2	Ilmenau TU	3	76.5
Duisburg-Essen U	34	57.2	Magdeburg U	3	79.4
Paderborn U	33	59.1	Cottbus TU	2	81.4
Clausthal TU	32	60.9	Dortmund TU	2	83.3
Freiberg TU	30	62.7	Freiburg U	2	85.3
Magdeburg U	28	64.3	Kassel U	2	87.3
Saarbrücken U	28	65.9	Wuppertal U	2	89.2
Position 1 to 20 overall	**1,128**	**65.9**	**Position 1 to 20 overall**	**91**	**89.2**
Other HEIs	**584**	**34.1**	**Other HEIs**	**11**	**10.8**
HEIs overall	**1,712**	**100.0**	**HEIs overall**	**102**	**100.0**
Based on: No. of HEIs	**104**		**Based on: No. of HEIs**	**31**	

Data basis and source:
Deutsche Forschungsgemeinschaft (DFG): Reviewers of proposals submitted within the framework of the Individual Grants Programme and Coordinated Programmes 2005 to 2007 and elected members of DFG Review Boards for the term of office 2008 to 2011.
Calculations by the DFG.

was in this research field. The special orientation of this HEI is also evident from its motto "University of the Information Society"[111].

The TU Clausthal and the TU Bergakademie Freiberg, on the other hand, place a distinct emphasis on the areas of materials engineering (MEN) and "materials science and raw materials" (MRM), and are accordingly situated close to the respective funding area symbols at the bottom left of the image. Each of these HEIs received almost half of their DFG funding volume in these fields. These comparatively small HEIs, with their respective specialisations, also managed to reach the leading group of ten institutions with the highest funding in the research field of "materials science and raw materials". Another highly specialised HEI with an outstanding position in its field is the Bauhaus University of Weimar. It received over €5 million in DFG awards, giving it a position among the leading institutions in the area of construction engineering and architecture (6th position). The Weimar HEI acquired more than two thirds of its DFG awards in this research field, indicating a strong focus on the subjects grouped in this area, which range from resource economics, to city, regional and traffic planning, to construction material sciences and virtual design.

Finally, the University of Bielefeld at the right of the image is an example of how HEIs which count among the smaller research institutions in a particular subject area can still have success in

[111] In regard to the subject of computer science, it should be stressed here again that the funding activities of the DFG and all other funding sources considered here refer to a thematically diverse field. Computer science projects are conducted, for example, at institutions of mathematics or mechanical engineering and a whole range of other institutes with varied thematic orientations.

Table 4-16:
International appeal of HEIs: The most commonly chosen host universities by AvH-, DAAD-, and ERC-funded researchers in the engineering sciences

Alexander von Humboldt Foundation			German Academic Exchange Service[1)]		
Host university	**No. of visits**	**cum. %**	**Host university**	**No. of recipients**	**cum. %**
Darmstadt TU	39	8.9	Berlin TU	34	9.3
Stuttgart U	38	17.7	Aachen TH	28	17.0
Aachen TH	34	25.5	Dresden TU	24	23.6
Munich TU	31	32.6	Darmstadt TU	23	29.9
Berlin TU	19	36.9	Hannover U	21	35.7
Erlangen-Nuremberg U	18	41.1	Karlsruhe TH	20	41.2
Karlsruhe TH	16	44.7	Stuttgart U	20	46.7
Bochum U	13	47.7	Bochum U	19	51.9
Dresden TU	13	50.7	Munich TU	17	56.6
Duisburg-Essen U	13	53.7	Duisburg-Essen U	16	61.0
Hamburg-Harburg TU	13	56.7	Hamburg-Harburg TU	14	64.8
Hannover U	12	59.4	Kassel U	13	68.4
Kaiserslautern TU	11	61.9	Magdeburg U	13	72.0
Freiburg U	10	64.2	Erlangen-Nuremberg U	12	75.3
Ulm U	10	66.5	Brunswick TU	11	78.3
Brunswick TU	7	68.1	Dortmund TU	11	81.3
Siegen U	7	69.7	Freiburg U	7	83.2
Bremen U	6	71.1	Saarbrücken U	7	85.2
Freiberg TU	6	72.5	Ilmenau TU	6	86.8
Saarbrücken U	6	73.9	Bremen U	5	88.2
Position 1 to 20 overall	**322**	**73.9**	**Position 1 to 20 overall**	**321**	**88.2**
Other HEIs	**114**	**26.1**	**Other HEIs**	**43**	**11.8**
HEIs overall	**436**	**100.0**	**HEIs overall**	**364**	**100.0**
Based on: No. of HEIs	**63**		**Based on: No. of HEIs**	**37**	

Host universities of ERC-funded researchers (no. of recipients):
Bremen U (1), Darmstadt TU (1), Munich LMU (1) and Tübingen U (1).

[1)] For DAAD-funded researchers, subject-specific data was available for 51 HEIs, which had a total expenditure of at least one million euros per year according to the DAAD funding statement.

Data basis and sources:
Alexander von Humboldt Foundation (AvH): Research visits by AvH guest researchers from 2003 to 2007.
German Academic Exchange Service (DAAD): Researchers from abroad funded between 2005 and 2007.
European Research Council (ERC): Researchers funded in the two first calls for proposals (project database CORDIS; as of 15.04.2009).
Calculations by the DFG.

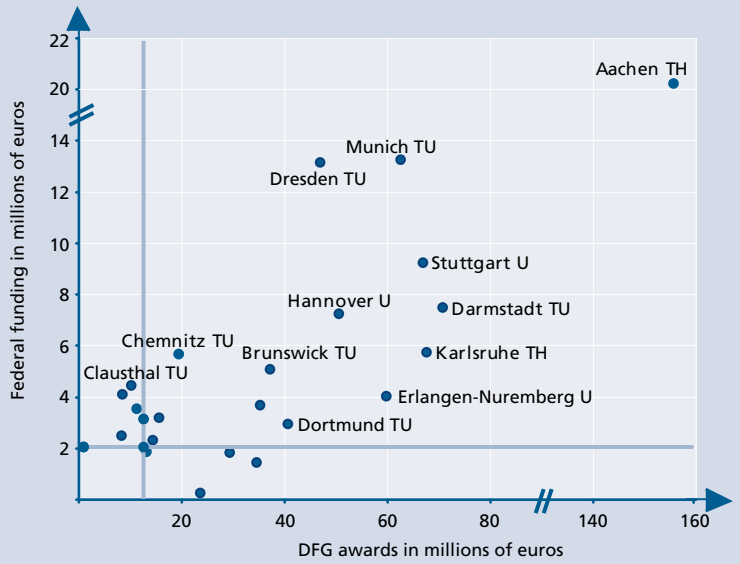
the Excellence Initiative. Roughly three quarters of its altogether low DFG funding volume in engineering sciences was acquired in computer science. But the university also managed to successfully implement a Cluster of Excellence with the title "Cognitive Interaction Technology". Though it is not shown in this analysis, the programme has a strong interdisciplinary orientation and combines expertise from computer science, linguistics, biology, psychology and a range of other disciplines.

Comparison of Funding Structures by Funding Source

The foregoing comments on the specific funding profiles of HEIs focused on priorities set within the scope of DFG funding. The following close examination of the distribution of funds in the relevant funding areas of the federal government (e.g. in energy research) and the EU (e.g. nanotechnologies, multifunctional materials, new production processes and devices) provides supplementary information on the particularly strong individual HEIs in this scientific discipline.

First of all, with reference to the HEI sector, Figure 4-14 juxtaposes the funding volumes provided by the DFG for research fields in the engineering sciences (over €1 billion) and the funding provided by the Federal Ministry of Economics and Technology (BMWi) in the context of two programmes administered by the German Federation of Industrial Cooperative Research Associations (AiF): the IGF (col-

Figure 4-14:
Comparison of research funding in the Federal Ministry of Economics and Technology's programmes IGF and PRO INNO and in the engineering sciences funding areas of the DFG by HEI



Notes:
The diagram is based on data for the 20 HEIs with the highest funding incomes in the DFG's scientific discipline of "engineering sciences" and in the federal government programmes "promotion of innovation competence in medium-sized enterprises (PRO INNO)" and "collaborative industrial research (IGF)" which are administered by the Federation of Industrial Cooperative Research Associations. Shown here are the names of the ten HEIs with the highest funding income from the relevant funding sources. To the right of the vertical blue line are the 20 HEIs with the most DFG awards, and above the horizontal blue line are the 20 HEIs with the highest income from the BMWi.

Data basis and sources:
Deutsche Forschungsgemeinschaft (DFG): DFG awards 2005 to 2007.
Federation of Industrial Cooperative Research Associations (AiF): Funding for the promotion of innovation competence in medium-sized enterprises (PRO INNO II) and for collaborative industrial research (IGF) 2005 to 2007.
Calculations by the DFG.

laborative industrial research) and PRO INNO (promotion of innovation competence in medium-sized enterprises) (all in all €164 million). Above and beyond DFG funding, the AiF data indicates at which HEIs scientists are especially active in the area of knowledge transfer to small and medium-sized firms. The BMWi funding is primarily intended for scientific-technical R&D projects that are not geared toward individual companies, which can be expected to produce new insights, especially connected to the opening-up and use of new technologies, and which could lead to economic benefits for small and medium-sized enterprises.

This scatter diagram incorporates the 20 HEIs which received the highest funding from the DFG and the BMWi during the reporting period 2005 to 2007. The diagram is divided into four fields by two blue lines. To the right of the vertical blue line are the HEIs with the most DFG awards in the engineering sciences. The HEIs above the horizontal blue line are the 20 HEIs with the highest income from BMWi funding. The HEIs situated in the top-right field are accordingly among the 20 HEIs with the highest funding from the DFG and from the BMWi in the programmes considered here. The diagram reveals a close relationship between DFG awards and the funding provided by the BMWi. 15 of the 20 leading HEIs in the programmes IGF and PRO INNO II are also found among the 20 HEIs with the highest income from DFG funding for projects in the engineering sciences.

As with DFG funding, the TH Aachen has a clear lead over the other HEIs in the funding ranking of the BMWi. This HEI acquired over €21 million, which corresponds to almost 13 percent of all BMWi funding allocated to HEIs in these programmes. It is followed by the TU Dresden and the TU Munich with around €13 million each. On the whole, the group of HEIs involved in the IGF and in the pro-

gramme PRO INNO II is heavily weighted toward HEIs from the technical sector. These are primarily institutions which also occupy leading positions in the research fields of mechanical engineering in terms of their income from DFG funding. It may thus be asserted that the HEIs with the most DFG awards in mechanical engineering are of special importance to knowledge transfer in the framework of the AiF research associations and BMWi funding programmes.

Tables 4-17 to 4-19 and Figure 4-15 broaden our view of the engineering sciences by drawing upon certain funding areas of the EU and the federal government, which aim to promote projects with an orientation focused on engineering sciences. Table 4-17 shows the funding ranking of HEIs with the highest income from the federal government's funding area "energy research and technology" in the period 2005 to 2007. This thematic funding area contains research fields such as renewable energy and energy conservation, coal and other fossil fuels, and nuclear energy research (especially reactor safety). The University of Stuttgart, which has numerous research priorities in the funding area considered here, is shown to have a funding total of €12 million and thereby occupies first position in the ranking.

Furthermore, the funding programme "cleaner environmental technology and sustainable production", which is part of the federal government's R&D project funding, is also examined in the table. This funding programme addresses research and development in the area of natural resource-based production systems or production-integrated environmental protection. Generally speaking, Table 4-17 reveals that the HEIs which lead the field in these areas are frequently the same technical universities that

Table 4-17:
The 20 HEIs with the highest funding income in the federal government's funding areas "cleaner environmental technology and sustainable production" and "energy research and technology"

Cleaner environmental technology and sustainable production			Energy research and technology		
Higher education institution	**Mio. €**	**cum. %**	**Higher education institution**	**Mio. €**	**cum. %**
Aachen TH	5.5	10.7	Stuttgart U	12.1	14.0
Freiberg TU	5.4	21.2	Aachen TH	8.4	23.7
Dresden TU	3.4	27.7	Freiberg TU	6.6	31.4
Stuttgart U	2.9	33.3	Munich TU	5.3	37.6
Freiburg U	2.3	37.8	Hannover U	5.1	43.4
Berlin TU	2.1	42.0	Dresden TU	5.1	49.3
Munich TU	2.1	46.0	Karlsruhe TH	3.2	53.0
Brunswick TU	1.8	49.6	Hamburg-Harburg TU	2.4	55.8
Hohenheim U	1.7	52.9	Darmstadt TU	2.4	58.6
Göttingen U	1.7	56.2	Brunswick TU	2.2	61.1
Cottbus TU	1.6	59.4	Bochum U	2.2	63.6
Darmstadt TU	1.6	62.6	Berlin TU	2.1	66.0
Jena U	1.6	65.6	Duisburg-Essen U	1.9	68.3
Bonn U	1.3	68.2	Zittau-Görlitz H	1.9	70.5
Paderborn U	1.1	70.4	Kiel U	1.6	72.3
Bremen U	1.1	72.6	Jena U	1.5	74.0
Hamburg U	1.1	74.7	Cottbus TU	1.4	75.7
Aalen H	1.0	76.5	Ilmenau TU	1.1	77.0
Clausthal TU	0.9	78.4	Bremen U	1.1	78.2
Hamburg-Harburg TU	0.9	80.1	Hamburg U	1.0	79.5
Position 1 to 20 overall	**41.3**	**80.1**	**Position 1 to 20 overall**	**68.7**	**79.5**
Other HEIs	**10.2**	**19.9**	**Other HEIs**	**17.8**	**20.5**
HEIs overall	**51.6**	**100.0**	**HEIs overall**	**86.5**	**100.0**
Based on: No. of HEIs	**65**		**Based on: No. of HEIs**	**72**	

Data basis and source:
Federal Ministry of Education and Research (BMBF): Direct R&D project funding by the federal government 2005 to 2007 (project database PROFI).
Calculations by the DFG.

Table 4-18:
The 20 HEIs with the highest funding income in the EU funding areas "nanotechnologies, multifunctional materials, new production processes and devices" and "sustainable energy systems and sustainable land and sea transport"

Nanotechnologies, multifunctional materials, new production processes and devices			Sustainable energy systems and sustainable land and sea transport		
Higher education institution	Mio. €	cum. %	Higher education institution	Mio. €	cum. %
Aachen TH	8.9	9.9	Stuttgart U	9.5	22.1
Stuttgart U	6.1	16.7	Aachen TH	4.9	33.4
Munich TU	5.7	23.0	Berlin TU	3.6	41.8
Saarbrücken U	4.2	27.7	Hamburg-Harburg TU	2.3	47.1
Karlsruhe TH	3.8	31.9	Würzburg U	2.1	52.0
Darmstadt TU	3.5	35.7	Constance U	2.1	56.8
Hannover U	3.2	39.3	Karlsruhe TH	1.7	60.8
Dortmund TU	2.7	42.3	Dresden TU	1.7	64.7
Mainz U	2.6	45.2	Trier HTWG	1.3	67.8
Münster U	2.6	48.1	Munich TU	1.3	70.7
Leipzig U	2.5	50.9	Paderborn U	1.1	73.4
Bochum U	2.5	53.7	Stuttgart HfT	1.1	75.8
Ilmenau TU	2.2	56.1	Berlin FU	1.0	78.1
Berlin HU	2.0	58.3	Erlangen-Nuremberg U	0.9	80.1
Munich LMU	2.0	60.5	Freiberg TU	0.8	82.0
Tübingen U	1.9	62.6	Rostock U	0.8	83.9
Ulm U	1.9	64.6	Munich LMU	0.7	85.6
Berlin TU	1.8	66.6	Munich UdBW	0.6	87.1
Heidelberg U	1.7	68.6	Brunswick TU	0.6	88.5
Hamburg U	1.7	70.5	Hannover MedH	0.5	89.6
Position 1 to 20 overall	**63.4**	**70.5**	**Position 1 to 20 overall**	**38.5**	**89.6**
Other HEIs	**26.5**	**29.5**	**Other HEIs**	**4.5**	**10.4**
HEIs overall	**89.8**	**100.0**	**HEIs overall**	**43.0**	**100.0**
Based on: No. of HEIs	**63**		**Based on: No. of HEIs**	**45**	

Data basis and source:
EU Office of the BMBF: German participations in the Sixth EU Framework Programme from 2002 (project data as of 02.06.2008).
Calculations by the DFG.

have already been identified as major recipients of DFG and of BMWi funding in the programmes IGF and PRO INNO. The TU Freiberg, a comparatively small HEI whose research priorities are focused on these areas, is also quite conspicuous here. It is among the top three institutions in both of these funding areas.

Similar results are yielded by the funding rankings for the thematic priorities shown in Table 4-18, "nanotechnologies, multifunctional materials, new production processes and devices" and "sustainable energy systems and sustainable land and sea transport". However, as in the case of Table 4-17, it must be stressed here that HEIs in the second ranking group already have fairly low funding amounts, which is why the difference between one ranking position and the next in some cases is less than €100,000 in three years. Nevertheless, it is generally evident that the HEIs which have previously been identified as important research institutions in the engineering sciences also have an outstanding position in these thematically related funding programmes.

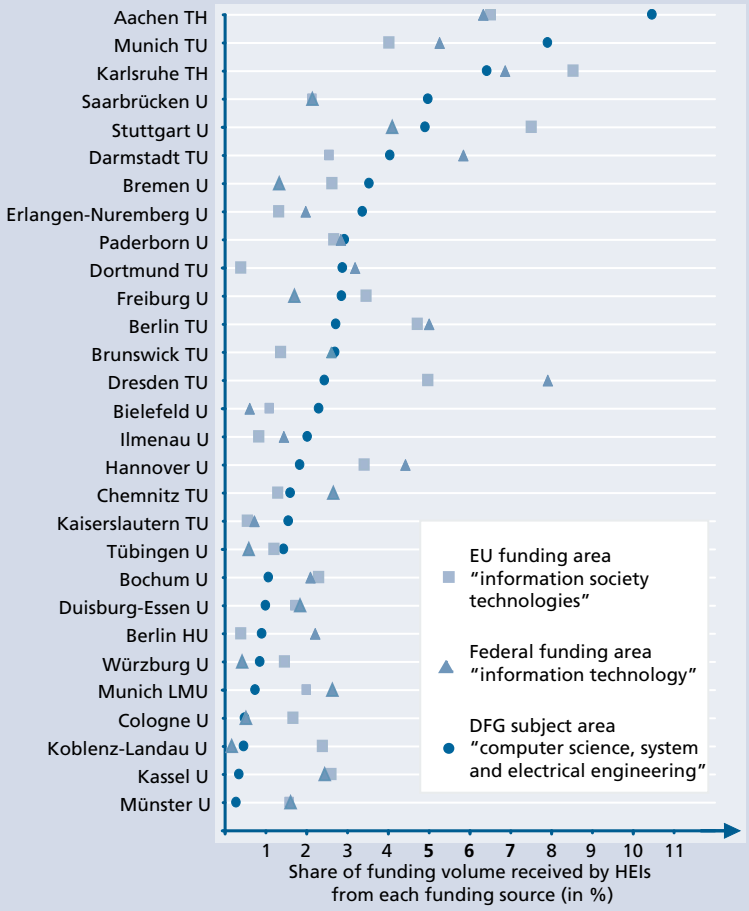
A notably homogenous picture appears in the area of information technology. Figure 4-15 indicates the relative performance of the HEIs in terms of research funding in the information technology funding areas of the DFG, the EU and the federal government. As the funding programmes juxtaposed here involve different reporting periods, the graph does not correlate the absolute funding totals. Rather, the respective shares of the total funding volumes allocated to HEIs by each of the funding sources are juxtaposed. Ordered by DFG funding volume, the ranking lists the 20 institutions with the highest funding income in the DFG's subject area of computer science, system and electrical engineering, in the federal government's funding area of information

technology, and in the EU's funding area "information society technologies"[112].

As shown in the graph, all of the TU9 universities have high funding shares in the information technology funding areas considered here. For all three funding sources, the top three ranking positions are occupied by HEIs from this association of universities: In the case of the DFG, these are the TH Aachen, TU Munich and TH Karlsruhe, in the case of the federal government, the TU Dresden, TH Karlsruhe and TH Aachen, and in the case of the EU, the TH Karlsruhe, the University

[112] The total funding volume for HEIs in the DFG's subject area of computer science, system and electrical engineering in the period from 2005 to 2007 amounts to €385 million. Up until 2008, German HEIs received a total of €229 million in the funding area information society technologies in the Sixth EU Framework Programme. In the federal government's direct R&D project funding, a total of €177 million was paid to HEIs in the funding area of information technology from 2005 to 2007.

Figure 4-15:
Comparison of research funding in information technology funding areas of the DFG, the EU and the federal government by HEI



Notes:
The diagram is based on data for the 20 HEIs with the highest funding incomes in the following categories: the federal funding area of "information technology", the DFG subject area of "computer science, system and electrical engineering", and the EU funding area of "information society technologies" in FP6. Ordered by DFG funding volume, the figure shows for each HEI its relative share of the total funding volume allocated to German HEIs by the funding sources considered here. For example: The TH Aachen accounts for a 10.5 percent share of the total volume of awards allocated to HEIs by the DFG in the subject area of "computer science, system and electrical engineering".

Data basis and sources:
Deutsche Forschungsgemeinschaft (DFG): DFG awards 2005 to 2007.
Federal Ministry of Education and Research (BMBF): Direct R&D project funding by the federal government 2005 to 2007 (project database PROFI).
EU Office of the BMBF: German participations in the Sixth EU Framework Programme from 2002 (project data as of 02.06.2008).
Calculations by the DFG.

of Stuttgart and the TH Aachen. The TU Dresden is especially successful in the acquisition of funding from the federal government's direct R&D project funding (first position) and also well-placed with the other sources of third-party funding. Only a few HEIs, such as the University of Paderborn, received roughly equal shares of the total funding provided by all three funding sources. The University of Saarbrücken, for instance, whose high share of the total funding volume puts it among the five HEIs with the most DFG awards, has relatively low shares of the funding provided by the other funding sources. The graph therefore also identifies HEIs which place a special emphasis on a particular funding source, though the universities with the most DFG awards tend also to be among the most active institutions in terms of third-party funding from the EU and the federal government. Not only did the 20 HEIs with the highest income manage to acquire 73 percent of the funding in the information technology research fields of the DFG. They also obtained almost two-thirds of the funding provided for HEIs in the thematically related funding areas of the EU and the federal government.

Finally, Table 4-19 presents the HEIs with the highest funding income in the federal funding areas of "materials research, physical and chemical technologies" and "regional sustainability, structural engineering and mobility". The latter funding area addresses topics such as socio-ecological research and regional sustainability, as well as research and technology for mobility, for building and housing, and for architectural heritage. In the funding ranking for federal funding in this category there is once again a conspicuous correlation to DFG funding in the funding area of construction engineering and architecture (cf. Table 4-14).

Table 4-19:
The 20 HEIs with the highest funding income in the federal government's funding areas "materials research, physical and chemical technologies" and "regional sustainability, structural engineering and mobility"

Materials research, physical and chemical technologies			Regional sustainability, structural engineering and mobility		
Higher education institution	Mio. €	cum. %	Higher education institution	Mio. €	cum. %
Aachen TH	6.3	6.2	Karlsruhe TH	11.0	10.4
Marburg U	5.0	11.1	Dresden TU	8.8	18.8
Stuttgart U	4.9	16.0	Aachen TH	7.9	26.2
Munich TU	4.0	19.9	Berlin TU	5.9	31.8
Freiburg U	4.0	23.9	Stuttgart U	5.4	36.9
Kaiserslautern TU	3.9	27.8	Bochum U	4.6	41.2
Cologne U	3.9	31.7	Bonn U	4.6	45.6
Münster U	3.8	35.4	Darmstadt TU	4.2	49.5
Dresden TU	3.7	39.0	Brunswick TU	3.5	52.8
Augsburg U	3.7	42.7	Clausthal TU	2.9	55.6
Munich LMU	3.6	46.3	Hamburg U	2.8	58.2
Brunswick TU	3.6	49.8	Hannover U	2.7	60.8
Jena U	3.5	53.3	Hohenheim U	2.4	63.1
Berlin FU	3.2	56.4	Tübingen U	2.4	65.3
Frankfurt/Main U	3.0	59.4	Kassel U	2.2	67.4
Karlsruhe TH	2.7	62.1	Cottbus TU	1.9	69.2
Hamburg U	2.2	64.3	Munich TU	1.8	70.9
Saarbrücken U	2.2	66.4	Hamburg-Harburg TU	1.7	72.5
Darmstadt TU	2.1	68.6	Oldenburg U	1.6	74.1
Erlangen-Nuremberg U	2.0	70.6	Rostock U	1.6	75.6
Position 1 to 20 overall	**71.2**	**70.6**	**Position 1 to 20 overall**	**79.8**	**75.6**
Other HEIs	**29.7**	**29.4**	**Other HEIs**	**25.8**	**24.4**
HEIs overall	**100.8**	**100.0**	**HEIs overall**	**105.6**	**100.0**
Based on: No. of HEIs	**68**		**Based on: No. of HEIs**	**86**	

Data basis and source:
Federal Ministry of Education and Research (BMBF): Direct R&D project funding by the federal government 2005 to 2007 (project database PROFI).
Calculations by the DFG.

At the same time, a remarkably broad range of scientific subjects is incorporated in the funding area "materials research, physical and chemical technologies". As already discussed in Chapter 3 and visualised in Figure 3-4, it is very difficult to accomplish the direct assignment of a funding area to a specific scientific discipline. HEIs with either a life sciences or a natural sciences orientation could benefit from this funding area, even though a slight predominance of technical universities is apparent. In this funding area, very high funding amounts are allocated to HEIs like the TH Aachen, the TU Munich and the University of Stuttgart, which target topics such as lightweight construction or new catalytic routes. While other well-positioned institutions such as the universities of Marburg and Freiburg tend to concentrate on topics like nano-medicine, materials for the life sciences, or optical technologies for biosciences and health.

Supplementary to the data presented for DFG awards, we now have a clearly differentiated picture of the funding structures associated with research projects in the engineering sciences. The indicators drawn upon in this report – including figures for competition-based funding by various funding sources, for the number of persons involved in the DFG's review process, and for network structures based on coordinated research programmes – have established the outstanding strength of the TH Aachen and its neighbouring non-universities research institutions in the engineering sciences. Along side highly active research institutions with broad subject portfolios, there are also some – often relatively small – exceptionally well-positioned HEIs that set distinct priorities in particular research fields and which count among the institutions with the highest funding from the DFG as well as from the EU and the federal government.

5 General Overview and Outlook

This report describes the distribution of funding for research in Germany with an emphasis on German higher education institutions. One of its principal concerns is with the question of what thematic priorities are set by German institutions in terms of externally funded research. The term "third-party funding" refers to funds that originate from sources other than the basic finance budget provided by the responsible state ministries. They are usually funds which are actively acquired by researchers from various public research funding bodies or private business donors. These funds represent an important source of finance for research at higher education institutions. The indicators reported in the DFG Funding Ranking for the funding activities of the principal funding bodies and state institutions cover almost 90 percent of the entire spectrum of third-party funding provided by public authorities for research at HEIs.

Indicators of third-party funding are of growing importance to the comparative evaluations of the research performance of individual locations and institutions, which are carried out by various institutions. The DFG's funding ranking also makes a contribution to this task – but its explicit focus is on another aspect of externally funded research. With the profile analyses in the funding ranking, which show how research funded by the DFG, the EU, and the federal government shapes the thematic content of these institutions' research portfolios, the DFG makes a significant contribution to the discussion on profile formation by HEIs. The report's principal concern is therefore not with the volumes of third-party funding acquired by HEIs, but rather with the information derived from these acquisitions on the specific thematic priorities, differentiated by scientific discipline, which are implemented differently from one institution to the next.

The DFG Funding Ranking Compared to Other Ranking Methods

In the context of other rankings, these analyses are particularly important because they offer a new path between two traditional ranking methods: International comparative studies, most prominent in the form of the "Shanghai Ranking", generally take entire HEIs as the object of analysis. The chief concern of these analyses is with the "output" of the HEIs, whether in the form of articles in specialist journals, citations, or the number of Nobel Prize winners produced by a HEI. Differences in thematic priorities are not taken into account, although it is well-known for example that articles in international journals are not an adequate reflection of a HEI's research output across all disciplines.

Alongside these studies, another type of comparative performance evaluation has been developed, which only reflects the situation in very specific subjects. These studies are based on the conviction that the "best HEI" does not exist, that HEIs each have their own profiles and are characterised by specific strengths and weaknesses in different subjects, and that comparisons can therefore only be subject-specific. Examples of this approach include the CHE Ranking by the Centre for Higher Education

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Development and the Research Rating by the German Council of Science and Humanities, whose method has been tested so far in two pilot studies for the subjects of chemistry and sociology. The focus of these analyses is therefore on faculties or groups of institutes which can be assigned to a specific subject. This approach has, without doubt, significant advantages over general rankings which are not differentiated by subject. However, what's lacking here is a view of the "bigger picture"; in other words, there is a failure to examine the thematic and regional contexts in which the research of a particular discipline is embedded.

The DFG Funding Ranking 2009 brings to light these cross-disciplinary relationships, whose specific character varies significantly from location to location. The visual representations thus help to identify not only the HEIs with the most third-party funding or the strongest research position in particular subjects, but also the potential for interdisciplinary cooperation within an institution or a region.

The scope of the Funding Ranking covers HEIs in Germany. From 2005 to 2007, the DFG funded research projects at 159 HEIs. Altogether, 88 percent of the funds were allocated to the 40 HEIs with the most DFG awards. This shows that externally funded research is concentrated to a great extent in a limited number of HEIs.

The highest total volumes of DFG funding were received by the RWTH Aachen and the LMU Munich, with a clear margin over the other HEIs. Measured by the number of professors, both HEIs are comparatively large institutions with relatively broad portfolios of third-party funding. But they set different priorities. While the RWTH Aachen is the leading research institution in the engineering sciences, the LMU is among the ten largest DFG funding recipients in the humanities and social sciences, in the life sciences and in the natural sciences. Heidelberg and the FU Berlin are two further examples of research institutions found among the ten HEIs with the highest DFG funding in each of these scientific disciplines.

Closer inspection of the DFG's funding ranking in the individual scientific disciplines reveals that even within the scientific disciplines the funding is concentrated on a limited number of HEIs. In all four scientific disciplines, the 40 HEIs with the highest funding collected over 90 percent of the DFG awards. Moreover, the leading HEIs in each case were able to obtain several million euros more than the other HEIs, mostly due to their success in the first and second funding lines of the Excellence Initiative.

Funding Profiles of the Higher Education Institutions

In addition to the ranking lists one would expect to find in a ranking study of the HEIs with the highest overall funding and the highest funding per scientific discipline, the report also contains further analyses which address the issue of the subject-specific and programme-specific priorities which can be derived from the third-party funding of research projects. The classification of DFG awards into 48 research fields corresponding to the DFG Review Boards enables us to make highly differentiated statements regarding the profiles of institutions from a subject-specific and funding area-specific point of view.

To further elucidate the priorities of the HEIs as revealed by their third-party funding, a method of visualisation specially developed at the Max Planck Institute for the Study of Societies in Cologne and first used in Funding Ranking 2006 has been employed again here. This method enables a highly differentiated representation of the funding profiles of selected HEIs.

There is a broad spectrum of funding profiles, ranging from HEIs with a strong emphasis on technical subject areas – such as the HEIs amalgamated in the TU9 association (which themselves have very distinct profiles) – to universities that focus sharply on the humanities and social sciences or on life sciences subjects. Subjects belonging to the natural sciences are represented in almost all HEIs with high funding volumes from the DFG. As the classic basic subjects, they are relatively well-represented in the funding portfolios of HEIs with a technical or natural sciences orientation or even a humanities and social sciences orientation.

On the whole, the profile analyses provide an overview not only of the pri-

orities, but also of the relative weightings implemented by the HEI from a thematic point of view. In many cases, even those HEIs which are larger in terms of their third-party funding portfolios are concentrating increasingly on particular scientific disciplines and specific combinations of subject areas.

Thus, the University of Erlangen-Nuremberg, for example, acquired the majority of its DFG funding in the areas of mechanical engineering and medicine, although it is also the HEI with the highest funding total in the subject area of chemistry. In the course of the Excellence Initiative, the TU Dresden, up till then a relatively technically oriented institution, was able to boost its profile in the life sciences area by means of a Cluster of Excellence and a Graduate School.

The profile analyses illustrate the fact that especially smaller HEIs, which are not represented in the overall ranking of the HEIs with the highest funding totals, frequently set priorities in particular research fields and are among the leading institutions in those fields. The research profiles of these HEIs are primarily visible in the profile analyses on the level of individual scientific disciplines (cf. Chapter 4). A few examples are named here:

- One focus of externally funded research at the University of Bayreuth is on the research area of "non-European languages and cultures, social and cultural anthropology, Jewish studies and religious studies", in which it received the most of its DFG awards.
- The University of Mannheim has set distinct priorities in the research fields of economics and social sciences. Altogether, it received the most awards in the social and behavioural sciences.
- Together with the University of Heidelberg, the Hannover Medical School is one of the most successful HEIs in terms of third-party funding in medicine. In the area of the life sciences, this HEI also has numerous cooperative relationships with other local HEIs and non-university research institutions in the context of the DFG's Coordinated Programmes.
- In the research field of veterinary medicine, horticulture, agriculture and forestry, the University of Hohenheim and – as might be expected – the University of Veterinary Medicine Hannover are among the ten HEIs with the most grants. The DFG funding profiles of these two HEIs exhibit a clear focus on this research field, in the sense that they both received almost three fourth of their DFG awards in the area of the life sciences.
- The University of Saarbrücken is one of the ten HEIs with the highest funding in the research field of computer science, system and electrical engineering. In the context of DFG-funded Coordinated Programmes, the researchers of this university cooperate closely with colleagues from two local Max Planck institutes (MPI for Computer Science and MPI for Software Systems). The University of Paderborn is also represented among the ten HEIs with the most awards in computer science.
- The priorities of the TU Ilmenau are in the areas of micro- and nano-systems, systems engineering in the engineering sciences, and IT-based media and communication technology. This is clearly reflected in its DFG funding profile. The TU Ilmenau is thus among the top ten institutions with the most DFG awards in the research field of system engineering.
- The TU Clausthal and the TU Bergakademie Freiberg prioritise the areas of materials engineering as well as "materials science and raw materials". They both belong to the ten institutions with the most awards in the research field of "materials science and raw materials". In terms of the federal funding area "regional sustainability, structural engineering, and mobility", Clausthal is also one of the top ten funding recipients.
- In the research field of construction engineering and architecture, the Bauhaus University of Weimar is in the leading group of DFG funding recipients. It acquired more then two-thirds of its DFG awards in this category, indicating a clear priority in this research field.

It can therefore be shown, particularly with reference to smaller HEIs, that concentration on specific research fields contributes to the formation of a unique, internationally recognisable research profile. It is worth mentioning that many of the HEIs named in the examples above

were successful in the Excellence Initiative in their respective priority subject areas and received awards in the first two funding lines.

Comparison of Funding Structures by Funding Source

Apart from DFG funding, this report takes into account primarily the funding activities of the EU and the federal government. Together with the DFG these are the largest individual funders of externally financed research at German HEIs. The information available on the federal government's direct R&D project funding in twelve funding areas and on the R&D funding provided by the Sixth EU Framework Programme in eight funding areas enables a differentiated representation of externally funded research at German HEIs, whether from a financial point of view or in terms of thematic profile formation.

While the amount of third-party funding an institution acquires from the DFG is first and foremost an indicator of its externally funded activities in the field of basic research, other funding sources prioritise aspects of research such as application and immediate commercial exploitation. This difference of orientation is reflected, for example, in the sectoral composition of the institutions receiving third-party funding. In the EU and federal government programmes considered here, about one third of the funding was allocated to HEIs, to non-university research institutions and to commercial companies.

There are further differences between the funding sources studied here in terms of the coverage given to particular research fields. While the DFG, in accordance with its statutes, serves "all branches" of research, the EU and the federal government concentrate heavily on medical and technical research fields (including biotechnology) and on selected areas of the natural sciences, and far less on subject areas covered by researchers in the humanities or the social and behavioural sciences.

Despite the varying focus of the funding sources, it is to a large extent the same HEIs which emerge as especially strong research institutions. The 40 HEIs with the most DFG awards also collected 78 percent of the funding allocated to the HEI sector as part of the federal government's direct R&D project funding, and 83 percent of the funding allocated to German HEIs by the Sixth EU Framework Programme. As a consequence of the strong emphasis of the EU and the federal government on funding areas in the engineering sciences, universities with an engineering sciences orientation are especially prominent in the programmes of these two funding sources.

The comparisons that have been made between the funding structures of the DFG, the EU and the federal government have also revealed that the HEIs considered here have very similar funding profiles in all markets for third-party funding. The institutions shown to have similar profiles in the profile analyses based on DFG awards, are also "closely related" in the visualisations of data concerning the federal government's direct R&D project funding and the Sixth EU Framework Programme, and have comparable thematic priorities.

Other Indicators

It has already been shown above that funding data can provide us with more than what statistics for third-party funding dealing exclusively with monetary aspects might suggest. Along with the indicators for externally funded research activities, the Funding Ranking 2009 also provides indicators for scientific expertise (number of DFG reviewers and DFG Review Board members per institution), international appeal of leading German research locations (by AvH and DAAD funded guest researchers from abroad) and inter-institutional cooperation and networking in DFG-funded programmes. Finally, an examination of funding activities in the framework of the BMWi funding programmes administered by the German Federation of Industrial Cooperative Research Associations (AiF) reveals locations that are especially active in terms of cooperation with small and medium-sized enterprises (SME). Altogether, the comparison of these figures provides a well-founded impression of the particular strengths of the HEIs studied here.

Regional Distribution of Funding from Different Funding Sources

The visual representations of the regional distribution of funds indicate which

regions are especially successful in acquiring third-party funding from the DFG, the EU and the federal government. Altogether, the greatest share of the funding provided by the three funding sources went to the regions of Berlin and Munich. The visualisation based on DFG awards illustrates the extent to which HEIs and non-university research institutions influence a region's profile. At the same time, a large share of the funding provided by the EU and the federal government goes to business- and industry-based research institutions. A comparison with the DFG analysis therefore gives us the opportunity to elucidate the specific potential that can be realised by these regions through networking and cooperation between science and business.

Network Structures between Research Institutions

The analysis of cooperative relationships within the scope of some of the DFG's Coordinated Programmes provides evidence of regional cooperation between HEIs and non-university research institutions. Above all the life sciences and natural sciences are characterised by network profiles that feature both regional cooperative clusters and trans-regional cooperation between members of these clusters. Conditions are ripe for the development of regional and cross-regional cooperation clusters above all in those regions where a number of non-university research institutions are located – whether the affiliated institutes of HEIs, the institutes of the four large research organisations, federal institutions or other institutions.

Funding Statements of Non-University Research Institutions

With regard to the research activities of non-university research institutions and their networking with HEIs, the following findings may be documented:

> The institutes of the Max Planck Society were granted DFG funding primarily in the life sciences and natural sciences. For example, in the life sciences, the Max Planck Institutes managed to collect over 40 percent of the total funding volume allocated by the DFG to non-university research institutions. It is primarily in the life sciences and natural sciences that HEI's cooperate with Max Planck Institutes in the framework of the DFG's Coordinated Programmes to set common local priorities.

> It is mainly in the life sciences, natural sciences and engineering sciences that the research centres of the Helmholtz Association received third-party funding and formed networks with neighbouring HEIs in the framework of DFG-funded Coordinated Programmes. Attention should also be drawn to the particular success of the Helmholtz Association in the acquisition of funds from the Sixth EU Framework Programme.

> The Fraunhofer Society is the largest association of institutes for applied research in Europe. Accordingly, the institutions of the Fraunhofer Society acquired high funding volumes predominantly in the natural sciences and engineering sciences oriented funding areas of the federal government's direct R&D project funding and the Sixth EU Framework Programme. In the federal government's funding area of information technology, for instance, they obtained just under 15 percent of the total funding volume.

> The Leibniz Association received almost half of its DFG funding in the natural sciences. But it also collected a notable volume of funding for research in the humanities and social sciences through the institutes grouped in the sections "humanities and educational research" and "economics and social sciences".

> In the life sciences, federal research institutions acquired 10 percent of the total funding allocated to German institutions by the Sixth Framework Programme. Federal institutions such as the German Archaeological Institute or the Foundation of German Humanities Institutes Abroad also collected a relatively large volume of funding in the humanities and social sciences.

> When compared to the four large research organisations, the institutions classified as "other institutions in the non-university sector" managed to obtain high funding volumes primarily in the humanities and social sciences. It was especially academies, libraries, archives, museums and collections which were awarded third-party funding in this category. Other institutions in the

non-university sector also acquired a notable amount of funding in the engineering sciences (e.g. the German Research Centre for Artificial Intelligence (Deutsches Forschungszentrum für Künstliche Intelligenz, DFKI)).

Prospects

With its focus on data that reflects the participation of research institutions in publicly financed funding programmes and the activities of larger German and international research funding sources, this new edition remains true to the unique perspective of the DFG Funding Ranking. The time and effort necessitated by the statistical processing and quality assurance of this data, which is supplied directly by the funding institutions, is indeed considerable. But the results are more empirically reliable than evaluations based on ad hoc surveys of HEIs and other research institutions. The fact that the HEIs themselves are not actively involved in the collection and processing of information means that this funding ranking places no additional burden upon researchers and administrative staff. This further underlines the character of the Funding Ranking as a service especially to the member institutions of the DFG.

A question that should be granted further attention in future editions of the Funding Ranking is that of finding an appropriate form in which to account for and represent interdisciplinary research and cross-disciplinary cooperation.

The study of network structures between different institutions undertaken in this report is based on data relating to participation in the DFG's Coordinated Programmes. The analysis of cooperative relationships could be expanded in future through the incorporation of data concerning the cooperative research programmes of the EU and the federal government. In addition to collaborations between HEIs and non-university research institutions, an examination of the funding activities of other funding sources would enable the representation of collaborations with business and industry. A closer inspection of the integration of German institutions in international cooperative networks would be made possible primarily by looking at network relationships in the EU Framework Programme.

Alongside the examination of absolute figures, another important element of benchmarking and ranking studies, which are designed, after all, to facilitate comparisons, are correlations based on figures which put the size of an institution into perspective. The total number of scientific personnel working at an institution and in particular the number of professors working there (full-time equivalents) in the reporting year 2006 is referred to as a data basis by the DFG Funding Ranking 2009. The relevant figures are derived from surveys conducted annually by the State Statistical Offices – coordinated by the Federal Statistical Office – at all German HEIs. Against the background of more flexible university budgets, it must be considered whether other comparative indicators can be used in future. The use of core support funds to relativise the figures would seem suitable for the comparative analyses of research institutions. However, these figures are not yet available across the board in appropriate quality.

The many different possibilities for evaluating the underlying data could only be hinted at in this report. The extensive data compiled here invites more detailed analyses that cover specific institutions, regions and funding sources. The response to previous editions of the Funding Ranking has shown that there is great demand for detailed information, which the DFG has endeavoured to meet through the development of institution-specific funding reports. With the support of the Stifterverband für die deutsche Wissenschaft (Donors' Association for the Promotion of Sciences and Humanities in Germany) the expansion of this information service should continue in future.

6 Appendix

Index of Abbreviations

General abbreviations

ADG	Advanced Grant
CRC	Collaborative Research Centres
cum. %	Cumulative percent
ERA	European Research Area
EXC	Cluster of Excellence
ExIn	Excellence Initiative
FP	Framework Programme
GSC	Graduate School
IGF	Collaborative Industrial Research
intec.net	Network of International Technology Expertise
Mio. €	Millions of euros
No.	Number
NEMO	Network Management East
PI	Principal Investigator
PP	Priority Programme
PRO INNO	Promotion of Innovation Competence in Medium-Sized Enterprises
Prof.	Professors of either gender
PROFI	Project Funding Information System
R&D	Research and development
RTG	Research Training Group
SME	Small and medium-sized enterprises
STG	Starting Grant
T €	Thousands of euros
ZIM	Central Innovation Programme for SMEs
ZUK	Institutional Strategies to Promote Top-Level Research

Institutions and organisations

AiF	German Federation of Industrial Cooperative Research Associations
AvH	Alexander von Humboldt Foundation
BBAW	Berlin-Brandenburg Academy of Science
BMBF	Federal Ministry of Education and Research
BMELV	Federal Ministry of Food, Agriculture and Consumer Protection
BMU	Federal Ministry for the Environment, Nature Conservation and Nuclear Safety
BMWi	Federal Ministry of Economics and Technology
CERN	European Organisation for Nuclear Research
CHE	Centre for Higher Education Development
CNRS	Centre National de la Recherche Scientifique
DAAD	German Academic Exchange Service
DAI	German Archaeological Institute
DESTATIS	Federal Statistical Office
DESY	German Electron Synchrotron
DFG	Deutsche Forschungsgemeinschaft (German Research Foundation)
DGIA	German Humanities Research Institutes Abroad
DIW	German Institute for Economic Research
DKFZ	German Cancer Research Centre

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DLR	German Aerospace Centre
DRFZ	German Rheumatism Research Centre
EMB	Fraunhofer Institute for Marine Biotechnology
EMBL	European Molecular Biology Laboratory
ERC	European Research Council
ETH	Swiss Federal Institute of Technology
FernU	Distance Teaching University
FhI	Fraunhofer Institute
FhS	Fraunhofer Society
FU	Free University
FZ	Research Centre
FZJ	Research Centre Jülich
GESIS	Leibniz Institute for Social Sciences
GWZ	Humanities Research Centres
GWZO	Humanities Research Centre for the History and Culture of East Central Europe
HAW	University of Applied Sciences
HCU	HafenCity University
HEI	Higher Education Institution
HfG	College of Design
HGF	Helmholtz Association
HMGU	Helmholtz Centre Munich, German Research Centre Environmental Health
HMT	College of Music and Theatre
HRK	German Rectors' Conference
HTW	University of Applied Sciences for Technology and Management
HTWG	University of Applied Sciences for Technology, Management and Design
HU	Humboldt University
HZI	Helmholtz Centre for Infection Research
IBMT	Fraunhofer Institute for Biomedical Technology
ifo	Institute for Economic Research
iFQ	Institute for Research Information and Quality Assurance
IfW	Kiel Institute for World Economics
IGB	Fraunhofer Institute for Interfacial Engineering and Biotechnology
IME	Fraunhofer Institute for Molecular Biology and Applied Ecology
IPF	Leibniz Institute of Polymer Research
ITEM	Fraunhofer Institute of Toxicology and Experimental Medicine
IVV	Fraunhofer Institute for Process Engineering and Packaging
IWH	Halle Institute of Economic Research
IZI	Fraunhofer Institute for Cell Therapy and Immunology
JARA	Jülich Aachen Research Alliance
JU	Jacobs University
KathU	Catholic University
LMU	Ludwig Maximilian University
MDC	Max Delbrück Centre for Molecular Medicine
MedH	Medical School
MPI	Max Planck Institute
MPS	Max Planck Society
NTH	Technical University of Lower Saxony
PH	College of Education
PhilThH	Philosophical Theological University
RKI	Robert Koch Institute
RWI	Rhenish-Westphalian Institute of Economic Research
TFH	University of Applied Sciences
TH	Technical University
TiHo	University of Veterinary Medicine
TU	Technical University
U	University
UAMR	University Alliance Metropolis Ruhr
UdBW	University of the Federal Armed Forces
UdK	University of the Arts
UK	University Medical Centre
VLS	Fraunhofer Group for the Life Sciences
WGL	Leibniz Association
WZB	Social Science Research Centre Berlin
ZEW	Centre for European Economic Research

Appendix I Remarks on the Data Basis and Methodical Approach

Contents

A.1 Indicators

A.1.1 Monetary Indicators

HEIs' Current Basic Funds, Administrative Income and Income from Third-Party Funding

Information on the income of HEIs from basic funds and third-party funding was supplied by the Federal Statistical Office and refers to the reporting year 2006[113]. In the financial statistics for HEIs, their total income comprises administrative income (including revenues from patient care), income from third-party funding and current basic funds, which taken together are used to cover current expenditure.

DFG Awards

The Funding Ranking covers almost all of the subject-specific funding programmes offered by the DFG. Two main groups in particular were incorporated: the Individual Grants Programme and the Coordinated Programmes. Funding for the maintenance of international scientific contacts, for research facilities, or for scientific library services or information systems are not taken into account. Basically, the DFG awards granted in the years 2005 to 2007 were taken into consideration, including both new proposals and renewal proposals.

In the case of Individual Grants Programmes, if project funding was decided between 2005 and 2007, the total funding amount for the project's entire running time is included in the calculation. This led to a methodological issue that must be pointed out here: Since 2006, awards with a running time of three years have been granted in these programmes, though before only awards with a maximum of two years running time were possible for budgetary reasons. There was also a "prospect" for a third funding year, which was approved like a normal renewal proposal only after the expiry of the first two years. In the reporting period covered here, awards for these third funding years overlap with the newly introduced three year awards. This leads to a corresponding rise in the total funding volume, which is in fact merely a temporary statistical effect.

As is the case of Individual Grants Programmes, the report also takes into account the total funding amount for multi-year Research Units and Priority Programmes approved during this reporting period. The calculation is then based on the funding period, which generally lasts up to three-years. On the other hand, for programmes like Collaborative Research Centres and Research Training Groups, which are specific to the financial year,

[113] Unlike earlier editions of the Funding Ranking there is no aggregation of the data provided by the Federal Statistical Office into a three year period. The figures for exactly one reporting year are given instead.

the respective yearly awards for the years 2005 to 2007 are taken into account.

The funding decisions in the Excellence Initiative were made in two rounds (at the end of 2006 and 2007). The awards granted in this programme cover a five-year period. With the goal of giving equal weight to all funding awards in the Excellence Initiative, the three funding lines are included in the calculations of this report with three-year rather than five-year awards, analogous to the reporting period. The equal weighting of the two decision rounds is especially important for the ranking analyses presented in chapters 3 and 4. The incorporation of totals only from the budget years 2006 and 2007 would have distorted the comparative analyses of HEIs in favour of those institutions which were already successful in the first round. After all, the Excellence Initiative awards decided at the end of 2007, would have received little or no consideration in a year-by-year calculation of awards (funding totals for November and December 2007). Along with the question of the equal treatment of the grants, the weight of these awards in relation to other DFG funding programmes is also determined by the method of calculation. By using three-year awards, the Excellence Initiative can be included in the calculation analogously to the other DFG programmes considered in the report.

Direct R&D Project Funding by the Federal Government

The analyses of the federal government's research funding activities are based on data from the BMBF's PROFI database, which covers most of the federal government's project funding in the civil sector (cf. extracts from www.foerderkatalog.de). Besides the funding measures of the BMBF, the database also documents the funding programmes of other ministries (in particular the Federal Ministry of Economics and Technology (BMWi) and the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU)). However, only partial aspects of the funding are documented for some of these ministries. For instance, PROFI contains partial information on funding by the Federal Ministry of Food, Agriculture and Consumer Protection (BMELV), but in some cases no classification of the funding areas and priorities is documented. Furthermore, direct project funding in the military sector is not taken into account by PROFI.

The Funding Ranking incorporates measures classified as R&D projects, which were funded between 2005 and 2007. Accordingly, measures concerned with the general promotion of education and science (for example, projects for setting up virtual learning networks, or financing of reviews or competitions for young researchers) are not taken into account. Also excluded are funds for funding programmes, such as those of the DFG, or for the Academy Programme as well as administrative funds for the project management agencies[114] appointed in each case or for the administration of the federal government's network initiatives.

The following measures, which are classified as R&D projects and associated with considerable volumes of investment, in particular for infrastructural measures, are not taken into account:

- The project for the closure of the Asse II mine, under the overall supervision of the German Research Centre for Environmental Health (HMGU).
- Funding for the reorganisation and the R&D activities at the PETRA storage ring and the European X-Ray Laser Project XFEL at DESY in Hamburg.
- Project funding for the Helmholtz Centre for Heavy Ion Research for the preliminary phase of the FAIR accelerator facility.
- Two projects of the Helmholtz Centre in Potsdam: The extension of drilling at the Geothermal Laboratory Groß Schönebeck and the project for extending core elements of the Tsunami Early Warning System in the region of the Indian Ocean.
- Financing of the Photovoltaic Technology Evaluation Centre of the Fraunhofer Institute for Solar Energy Systems.

The funding totals for the financial years 2005, 2006 and 2007 provide the basis of the analyses. In contrast to the DFG calculation, the criterion is not whether the

[114] Project management agencies are management organisations which are usually affiliated with large research institutions like the Helmholtz Association and are commissioned by a Federal Ministry to supervise a national funding programme.

decision was taken during the relevant period. Rather, all measures are taken into account in which funding was allocated during these three years.

R&D Funding by the BMWi as Part of the Programmes IGF and PRO INNO

Several important BMWi funding programmes administered by the German Federation of Industrial Cooperative Research Associations (AiF) and not documented in PROFI are examined separately in the Funding Ranking. The analyses of BMWi funding for the programmes collaborative industrial research (IGF) and promotion of innovation competence in medium-sized enterprises (PRO INNO) are based on data supplied by the AiF as a special report on R&D projects which were running or concluded during the three-year period from 2005 to 2007. The main purpose of taking an overall view of the HEIs involved in these funding programmes is to identify locations which are especially active in terms of cooperation with SMEs.

R&D Funding in the Sixth EU Framework Programme

EU funding activities in the Sixth Framework Programme were evaluated in cooperation with the EU Office of the BMBF (project management agency DLR) and on the basis of the project database for the Sixth Framework Programme. The data basis comprises funding that was actually released by the middle of 2008. Due to the different reporting periods and running times of the programmes covered here, for purposes of comparison, the totals shown in the funding statements in chapters 3 and 4 have been converted to a three year period corresponding to the funding totals of the DFG and the federal government. As the calls for proposals in the Sixth Framework Programme took place over a four year period (2002 to 2005), the funding totals were converted by multiplying by 3/4.

A.1.2 Indicators Based on Personnel

Indicators of the Number of HEI staff

Data on the number of personnel working at HEIs were supplied by the Federal Statistical Office and refer to the reporting year 2006. This data was primarily used to put the size of an institution into perspective. The data basis includes the figures ascertained by the Federal Statistical Office for the total number of scientific personnel working full-time at a university during the reporting year 2006 and above all the number of professors working there. Full-time scientific personnel, according to the definition of the Federal Statistical Office, comprise professors (including assistant professors), scientific and artistic employees, lecturers and assistants, and teaching staff for special requirements. On the other hand, assistant lecturers, assistant scientists and guest professors count as part-time scientific personnel (cf. Federal Statistical Office). The calculations in this report are based on full-time equivalents.

Indicators for Scientific Expertise

The number of *DFG Review Board members* elected for the term of office 2008 to 2011 and the number of *reviewers* consulted by the DFG are employed as indicators for the scientific expertise of the research institutions incorporated in the Funding Ranking. The data on reviews refers to proposals in the context of the Individual Grants Programme and the Coordinated Programmes that were decided, in other words approved or rejected, in the years 2005 to 2007. In this period of time, a total of 57,065 review processes were documented, in which exactly 15,563 reviewers dealt with 26,860 proposals – whether in the written procedure or in the form of group reviews. The members of the Review Boards are responsible for quality assurance and for evaluating the reviews[115]. In the year 2007, a total of 594 Review Board members were elected from a list of over 1,300 candidates for the term of office 2008 to 2011.

[115] The specific procedures of the Review Boards are regulated by the rules of procedure. On this basis, the Review Boards can choose between various approaches and are allowed to shape the review of proposals according to the requirements of their respective subject areas. A detailed description of the procedures of the Review Boards and of the recently completed reform of the DFG's review system may be found at http://www.dfg.de/en/dfg_profile/structure/statutory_bodies/review_boards/index.html. Moreover, Koch (2006) offers a deeper insight.

Indicators of International Appeal

Information regarding grants from the *European Research Council (ERC)* in Funding Ranking 2009 is based on the results of the first calls for proposals in the two programme lines, Starting Grants and Advanced Grants, which took place in the years 2007 and 2008 respectively. Evaluations of funding by the *German Academic Exchange Service (DAAD)* refer to the group of researchers from abroad who received funding from the DAAD in the period from 2005 to 2007. Analyses of funding by the Alexander von Humboldt Foundation (AvH) are based on data which the AvH uses for its own "Humboldt Ranking" and which was made available for this report. This data records research visits by Humboldt research fellows and winners of the Humboldt Prize, who are included collectively as AvH funding recipients in the ranking analyses of HEIs. The report covers the years from 2003 to 2007 so as to keep the validity of the report independent of annual fluctuations.

DFG Awards by Applicant's Gender

The Funding Ranking also contains a personnel-related evaluation of DFG awards, in which the awards are differentiated by the gender of the applicant. These evaluations are based on the gender of researchers participating in the Individual Grants Programme. In the case of Coordinated Programmes, the gender of spokespersons and their deputies and of project leaders and associated researchers is taken into account. In the case of proposals for DFG Research Centres and the first two funding lines of the Excellence Initiative, the gender of the designated Principal Investigators forms the basis of the analysis. Altogether, 18,159 persons participated in the proposals approved by the DFG, and 2,862 (or 16 percent) of these were women.

A.2 Institution-Specific Assignment of Data

The DFG's Institution Database

In order to standardise the various designations used for institutions by the funding sources incorporated in the DFG Funding Ranking and to allow the data to be correlated, the DFG's database of institutions has been used to create a concordance. Moreover, the database stores the data required for processing the statistical information in cartographic form.

Extracts from the DFG's Institution Database can be accessed via the Internet information system Research Explorer (REx), which the DFG administers in cooperation with the DAAD (see www.dfg.de/rex). The analyses presented in this report are all carried out at the level of entire institutions. However, the introduction to Chapter 4 also gives an example of an analysis on the level of individual organisational units.

Approach to Merged Institutions

The merger of two different institutions, merged university hospitals for example, presents a methodological challenge. Awards granted by the various funding sources to researchers at a merged institution were explicitly assigned to one of the respective HEIs or non-university research institutions up until the time of the merger. A gradual changeover took place after the reorganisation, and the funding measures were gradually assigned to the amalgamated institution.

Although the merged university hospitals, for example, are reported separately in the network analysis, a compromise solution was used for the ranking analyses, to prevent inconsistencies in the handling of such mergers. Whenever the sources reported data for these "new" institutions, the funds were divided equally between the institutions involved. For instance, funding for a merged university hospital organised by two universities is divided 50:50 between the two partner HEIs. The same rule applies to proposals submitted by persons working at a merged institution.

Issues Relating to Specific Funding Sources

With reference to the personnel-related indicators based on data from the *Alexander von Humboldt Foundation (AvH)*, the report states the number of research visits by fellows lasting three months or more and the number of visits by prize winners lasting one month or more. The selection of several guest institutes by the same visiting researchers is taken into account, in order to facilitate an adequate comparative analysis. On the other hand, repeated research visits by a researcher to one and the same institute during the

reporting period (e.g. as part of the alumni funding programme) are counted as a single visit.

As regards DFG awards, the following programme-specific issues concerning institutional allocation must be borne in mind:

> *Individual Grants:* A funding total is assigned to the institution at which the applicant is working at the time of the funding decision.
> *Research Units, Collaborative Research Centres, and Priority Programmes:* The total funding amounts are divided into "projects". Awards in these programmes are therefore not assigned as a lump sum to the host university. It is rather the case that funding amounts for projects are assigned to the institutions at which the respective project leaders are employed.
> *Research Training Groups:* The awards are assigned to the host university. Only in exceptional cases are partial awards granted to different institutions with joint responsibility for organising a Research Training Group. These exceptions are taken into account.
> *DFG Research Centres, Graduate Schools and Clusters of Excellence:* Only approximate statements can be made regarding the distribution of funds to participating institutions. The assignment to institutions is based on data for the Principal Investigators (PI) named in the proposals and their institutions of origin. An equalisation of participations by PIs is carried out in the calculations (example: 30 participating PIs, 24 of which at university A (= 80 percent) and 6 at MPI B (= 20 percent)).
> *Institutional Strategy:* The awarded funds are assigned in full to the university submitting the proposal.

The institutional origin of the *persons involved in proposals for DFG-funded projects* is not always clear-cut. In some cases, due to their mobility, the proposal participants are assigned to several institutions. This applies to about 5 percent of the researchers taken into account by this report. Persons working at several institutions during the reporting period are counted multiple times for the institution-specific statistics, but only once for the overall analyses.

A.3 Subject-Specific Assignment of Data

The DFG's Subject Classification System

The analyses relating to thematic aspects are all based on the DFG's four-tier subject classification system. This incorporates more than 200 subjects, which are hierarchically assigned to 48 Review Boards, 14 subject areas and four scientific disciplines (cf. Table 2-4 in Chapter 2).

Subject Classification of DFG Data

With reference to DFG awards, the following programme-specific issues should be borne in mind:

> *Individual Grants:* The subject classification system reflects the operative structures the DFG uses to process proposals. When a funding proposal is submitted to the DFG in one of the Individual Grants Programmes, a decision is made by the Head Office, based on the topic of the proposal, concerning the subject to which it will initially be allocated. The assignment is operational, which means that it has a direct effect on the processing (employees responsible for that subject area), review (thematically competent reviewers) and finally the evaluation (responsible Review Board) of proposals. In this report the funding amounts are classified in accordance with the Review Board to which the proposal was assigned.
> *Research Units, Collaborative Research Groups, Priority Programmes and Research Training Groups:* Subject classification only serves statistical and publicity purposes; for example, so that the projects can be documented in a thematically differentiated form in the DFG annual electronic report (www.dfg.de/jahresbericht, see section Programme und Projekte) and in GEPRIS, a database of abstracts from DFG-funded projects (www.dfg.de/gepris). In the case of Collaborative Research Centres, Priority Programmes and Research Units, each project is classified separately by subject area.
> *DFG Research Centres, Graduate Schools and Clusters of Excellence:* Up to now, subject classification is only applied in the highly aggregated form of an assignment to one of the four scientific disciplines distinguished by the

DFG. To achieve a higher level of differentiation for this report, reference is also made to the Principal Investigators involved in the proposals. For all of these PIs, the institution of origin is ascertained for the analysis. In the DFG's Institutions Database, the institutes are classified by subject using the teaching and research area classification system of the Federal Statistical Office. The classification is used to allow approximate conclusions to be made regarding the thematic differentiation of the programmes. An equalisation by PI, as shown above, is assumed. The share assigned to each subject corresponds to the share of the PIs involved, whose institutions of origin are accordingly classified by subject[116].

> *Institutional Strategy:* The third funding line of the Excellence Initiative aims at a long-term strategy for leading research and the promotion of young researchers and looks at the HEI as a whole. The spectrum of funding objects is very broad, and the HEIs are free to define these measures as they wish. From this point of view, the funding approved in this programme is differentiated neither by the institutions participating in the Institutional Strategy nor by the subject areas which they cover.

The *members of DFG Review Boards* are assigned to a subject in accordance with the focus of their scientific work. At least two representatives are chosen per subject. The number of representative experts per subject mainly depends on how many funding proposals have to be reviewed and evaluated in this subject area. Several scientifically interlinked subjects form a Review Board. The structure of the subject areas and Review Boards is examined and, if necessary, redefined by the DFG Senate every four years as part of preparations for the election of the Review Board members[117].

The subject assigned to *DFG reviewers* is defined in terms of the subject to which the evaluated proposal is assigned. "Subject area equivalents" were calculated for reviewers who were active in several subjects in different subject areas. For example, three reviewed proposals in subject area A and one in subject area B result in 0.75 subject area equivalents in A and 0.25 equivalents in subject area B. In the tabular overviews, the values for individual institutions were rounded off to whole numbers. The subject classification system applied to *persons participating in proposals* for DFG awards follows the same method of evaluation as for the reviewers.

Subject Classification of Data from Other Funding Sources

The measures of the *direct R&D project funding by the federal government* are classified into subjects with the aid of the funding fields and funding priorities identified in the government's budgetary system and assigned to the four scientific disciplines distinguished by the DFG. For the purposes of the funding programme-specific analyses, some funding fields are amalgamated into "funding areas". For example, the funding area "aeronautical and space research" contains the two funding fields "aeronautical research and hypersonic technology" and "space research and space technology". On the other hand, the thematically heterogeneous funding field "sustainable development" is broken up into its funding priorities and assigned to different funding areas. The funding priority "cleaner environmental technology and sustainable production" (e.g. R&D in the area of production systems close to resources or integrated environmental protection) is classified in a funding area of its own. On the other hand, measures in the funding priority "global change" (research into climate, atmosphere and biospheres) are assigned to the funding area "geosciences" and measures in the funding priority "socio-ecological research and regional sustainability" (e.g. projects for environmentally relevant infrastructure development) are assigned to the funding area "regional sustainability, structural engineering and mobility". The allocation of the individual funding areas and priorities identified in the federal government's

[116] The subject classification system of the Federal Statistical Office used here to classify DFG awards does not permit an adequate differentiation for the DFG subject areas "mechanical and industrial engineering", "thermal and process engineering" and "materials science and engineering". For statistical purposes, they are therefore amalgamated in the subject area of "mechanical engineering".

[117] For the current thematic composition of the Review Boards see www.dfg.de/dfg_im_profil/struktur/gremien/fachkollegien/download/systematik_fachkollegien.pdf.

budgetary system to the four scientific disciplines is clarified in Table A-19.

In like manner, the measures in the seven thematic priorities of Sixth *EU Framework Programme* are classified into funding areas and assigned to the four scientific disciplines distinguished by the DFG's subject classification system. The funding priority "sustainable development, global change and ecosystems" is further divided into a natural sciences-oriented funding area, "global changes and ecosystems", and an engineering sciences-oriented funding area, "sustainable energy systems and sustainable land and sea transport".

ERC grants are assigned to the scientific disciplines using the expert panels by which the proposals are reviewed and approved. On the other hand, the subject classification of data from the AvH and the DAAD is based on the visiting researchers and not on the subject areas of the host university. For the purposes of the report, the subject assignments implemented by these funding sources are carried over into the DFG's subject classification system. As regards data from the DAAD, a differentiation by scientific discipline and subject area is only carried out for 51 HEIs that, according to the DAAD's funding statement, received at least € 1 million per year between 2005 and 2007.

Moreover, the subject classification implemented by the Federal Statistical Office in its personnel and financial statistics for HEIs is carried over into the subject classification system of the DFG. The annual surveys conducted by the Federal Statistical Office are differentiated into 78 teaching and research areas.

A.4 Network and Cooperation Analyses

The Funding Ranking contains graphic representations, differentiated by scientific discipline, of the HEIs and non-university research institutions that received awards in the DFG's Coordinated Programmes in the period from 2005 to 2007. The main purpose here is a visualisation of the number of awards. The principal questions are to what extent and in what form were DFG-funded programmes used for purposes of inter-institutional cooperation and how successful were researchers at HEIs in involving partners from neighbouring institutions in joint DFG-funded research projects.

As the goal here is to uncover regional priorities and cluster formations, the focus of the network analysis is on DFG funding programmes which apply the "location principle". In other words, aside from internal university cooperation, the integration of other HEIs and non-university research institutions located in the same place or the surrounding region is of particular interest. The analyses are accordingly based on data relating to funding approved from 2005 to 2007 in the following funding programmes: Graduate Schools, Clusters of Excellence, DFG Research Centres, Collaborative Research Centres (incl. programme variants) and Research Units. The analysis excludes the Priority Programme, which is geared towards Germany-wide cooperation and in which cooperation generally takes the form of joint workshops and topic-based work groups and colloquia. It usually does not feature cooperatively run projects and if so, then only in small subgroups. Research Training Groups are also excluded from the network analysis. In this programme, the HEI submitting the proposal is normally the sole funding recipient and cooperative relationships primarily take the form of university lecturers from other institutions taking part in the training of young researchers in the Research Training Group.

Separate graphs are provided for each scientific discipline. They are based on the geographic location of all HEIs and non-university research institutions in Germany, which cooperated multiple times with another institution in the context of the Coordinated Programmes. The diameter of the circles symbolises the number of participations in these programmes. The size of the circle increase as the number of participations rises. Connection lines between institutions indicate several joint participations in the DFG's Coordinated Programmes. The thickness of the connection line varies with the number of joint projects. Connections are only shown where at least two joint participations existed. Inter-institutional cooperation is of particular importance in the scientific discipline of life sciences. For reasons of clarity, the limit value was set to three joint participations in the life sciences graph.

A.5 Cartographic Representations

The Funding Ranking uses cartographic diagrams to visualise the distribution of DFG awards and funding from the EU and the federal government to different regions in Germany. The units of analysis include districts, cities without districts and federal states. For these visual representations, DFG awards or the grants provided by the EU or the federal government to HEIs, non-university research institutions and private persons – as well as industry and commercial companies in the case of the EU and federal government – are added up for each city and its associated district (in accordance with the district codes stored in the DFG's Institution Database). Districts with a total volume of more than € 10 million are shown on the graph. The different colours applied to the federal states illustrate the total volume of funding allocated to the funding recipients in these states. The differentiation of the funding by subject area (DFG) or funding area (EU and federal government) allows us to identify the thematic priorities which are set in the various regions.

Appendix II Supplementary Tables

Table A-1:
Income from basic funds, administration and third-party funding 2006 by HEI

Higher education institution	Current expenditure (= total)	Administrative income		Third-party funding income		Current basic funds	
	Mio. €	Mio. €	% of total	Mio. €	% of total	Mio. €	% of total
Aachen TH	813.7	254.2	31.2	152.2	18.7	407.2	50.0
Augsburg U	75.3	4.3	5.7	13.8	18.3	57.2	76.0
Bamberg U	45.3	1.5	3.2	5.4	12.0	38.4	84.8
Bayreuth U	104.0	3.2	3.1	20.2	19.4	80.6	77.5
Berlin FU	856.8	372.2	43.4	109.8	12.8	374.8	43.7
Berlin HU	755.9	371.8	49.2	112.2	14.8	271.9	36.0
Berlin TFH	53.0	3.6	6.9	2.7	5.1	46.6	88.0
Berlin TU	314.5	9.7	3.1	78.0	24.8	226.8	72.1
Bielefeld U	172.9	5.1	3.0	31.9	18.4	135.9	78.6
Bochum U	345.2	4.5	1.3	71.6	20.7	269.1	78.0
Bonn U	784.7	486.3	62.0	81.8	10.4	216.6	27.6
Bremen JU	53.2	20.7	38.9	5.4	10.1	27.2	51.0
Bremen U	202.8	13.3	6.5	67.2	33.1	122.4	60.3
Brunswick TU	193.0	4.6	2.4	54.5	28.2	133.9	69.4
Chemnitz TU	100.7	0.7	0.7	26.7	26.6	73.2	72.8
Clausthal TU	69.0	1.3	1.9	17.8	25.9	49.8	72.2
Cologne U	661.2	274.7	41.5	78.8	11.9	307.7	46.5
Constance U	103.2	1.3	1.3	29.9	28.9	72.0	69.8
Cottbus TU	64.2	1.2	1.9	15.1	23.5	47.9	74.6
Darmstadt TU	247.6	8.3	3.4	65.5	26.5	173.8	70.2
Dortmund TU	204.9	7.5	3.7	35.6	17.4	161.7	78.9
Dresden TU	582.1	256.7	44.1	108.2	18.6	217.2	37.3
Duisburg-Essen U	690.9	312.2	45.2	63.8	9.2	314.9	45.6
Düsseldorf U	561.8	266.0	47.3	43.8	7.8	252.1	44.9
Eichstätt-Ingolstadt KathU	32.9	1.0	3.1	3.2	9.7	28.7	87.2
Erfurt U	36.1	0.6	1.7	4.1	11.3	31.4	87.0
Erlangen-Nuremberg U	602.9	306.3	50.8	85.2	14.1	211.4	35.1
Frankfurt/Main PhilThH	2.9	0.1	4.1	0.3	11.7	2.4	84.2
Frankfurt/Main U	619.2	309.6	50.0	84.8	13.7	224.9	36.3
Frankfurt/Oder U	24.1	2.2	9.0	3.2	13.3	18.7	77.8
Freiberg TU	72.3	1.4	2.0	22.8	31.6	48.1	66.5
Freiburg PH	19.3	1.2	6.3	1.2	6.5	16.9	87.3
Freiburg U	551.5	357.6	64.8	85.4	15.5	108.6	19.7
Giessen U	543.2	269.5	49.6	39.6	7.3	234.1	43.1
Göttingen U	704.2	324.0	46.0	83.8	11.9	296.3	42.1
Greifswald U	265.4	145.0	54.6	27.7	10.4	92.8	34.9

>> Continued on next page

Higher education institution	Current expenditure (= total)	Administrative income		Third-party funding income		Current basic funds	
	Mio. €	Mio. €	% of total	Mio. €	% of total	Mio. €	% of total
Hagen FernU	70.6	20.9	29.5	10.4	14.8	39.3	55.7
Halle-Wittenberg U	392.2	212.1	54.1	38.5	9.8	141.5	36.1
Hamburg U	760.1	339.5	44.7	82.6	10.9	338.0	44.5
Hamburg UdBW	42.1			6.3	14.9	35.8	85.1
Hamburg-Harburg TU	76.9	0.8	1.1	15.9	20.7	60.1	78.2
Hannover MedH	604.8	551.9	91.2	52.6	8.7	0.3	0.1
Hannover TiHo	61.9	11.7	19.0	7.6	12.3	42.5	68.7
Hannover U	266.3	10.3	3.9	60.1	22.6	195.9	73.6
Heidelberg U	857.5	453.2	52.9	131.4	15.3	272.8	31.8
Hildesheim U	26.4	1.8	6.9	1.1	4.1	23.5	89.0
Hohenheim U	104.4	3.0	2.8	23.6	22.6	77.8	74.5
Ilmenau TU	75.7	1.1	1.5	16.3	21.6	58.2	76.9
Jena U	453.5	239.5	52.8	52.7	11.6	161.3	35.6
Kaiserslautern TU	108.9	4.2	3.8	27.1	24.9	77.6	71.3
Karlsruhe HfG	3.9			0.4	11.1	3.5	88.9
Karlsruhe HTW	28.8	1.3	4.5	3.2	11.0	24.3	84.5
Karlsruhe TH	240.7	1.2	0.5	89.3	37.1	150.2	62.4
Kassel U	148.5	11.6	7.8	24.8	16.7	112.2	75.5
Kiel U	529.9	270.4	51.0	54.9	10.4	204.6	38.6
Koblenz-Landau U	44.5	0.4	0.9	7.1	15.9	37.0	83.1
Leipzig U	511.5	274.6	53.7	45.2	8.8	191.7	37.5
Lübeck U	381.0	265.8	69.8	28.5	7.5	86.7	22.8
Lüneburg U	47.4	3.9	8.3	5.2	10.9	38.3	80.8
Magdeburg U	372.6	222.0	59.6	32.9	8.8	117.7	31.6
Mainz U	673.3	292.1	43.4	67.5	10.0	313.7	46.6
Mannheim U	75.7	2.9	3.9	18.3	24.1	54.5	72.0
Marburg U	530.3	263.9	49.8	26.2	4.9	240.1	45.3
Munich LMU	1,102.2	550.0	49.9	137.9	12.5	414.3	37.6
Munich TU	756.9	248.6	32.8	137.3	18.1	370.9	49.0
Munich UdBW	68.2			9.7	14.2	58.5	85.8
Münster U	804.7	344.2	42.8	85.6	10.6	374.9	46.6
Oldenburg U	105.5	4.9	4.6	14.8	14.0	85.8	81.4
Osnabrück U	94.7	2.6	2.7	15.5	16.4	76.6	80.9
Paderborn U	116.6	2.3	2.0	23.7	20.3	90.6	77.7
Passau U	43.8	3.1	7.0	4.0	9.1	36.8	83.9
Potsdam U	111.6	2.5	2.2	24.8	22.3	84.3	75.5
Regensburg U	371.4	172.6	46.5	41.7	11.2	157.2	42.3
Rostock U	334.7	182.4	54.5	29.3	8.8	123.0	36.7
Saarbrücken U	447.7	254.0	56.7	41.1	9.2	152.6	34.1
Siegen U	103.3	3.4	3.3	13.9	13.5	85.9	83.2
Stuttgart U	394.6	23.6	6.0	101.8	25.8	269.2	68.2
Trier U	69.4	2.0	2.9	11.0	15.9	56.4	81.3
Tübingen U	875.4	661.4	75.6	87.7	10.0	126.3	14.4
Ulm U	392.0	252.7	64.5	51.5	13.1	87.9	22.4
Weimar U	46.2	0.4	0.9	7.3	15.9	38.5	83.2
Witten-Herdecke U	29.5	7.0	23.7	10.3	34.9	12.2	41.4
Wuppertal U	116.1	2.5	2.1	12.6	10.9	101.0	87.0
Würzburg U	585.9	269.1	45.9	66.2	11.3	250.5	42.8
Total reporting sample[1)]	**25,989.4**	**10,852.5**	**41.8**	**3,590.9**	**13.8**	**11,546.0**	**44.4**
Other HEIs	**3,525.7**	**348.4**	**9.9**	**263.1**	**7.5**	**2,914.3**	**82.7**
HEIs overall	**29,515.2**	**11,200.9**	**37.9**	**3,854.1**	**13.1**	**14,460.2**	**49.0**
Based on: No. of HEIs	**355**	**346**		**290**		**355**	

[1)] Only those HEIs which received more than € 0.5 million in DFG awards from 2005 to 2007.

Data basis and source:
Federal Statistical Office (DESTATIS): The current basic funds, administrative income and third-party funding in 2006 of universities, universities of applied sciences and colleges of education, theology and art.
Calculations by the DFG.

Table A-2:
Income from third-party funding 2006 by HEI per subject area (in millions of euros)

Higher education institution	Total	HUM	SOC	BIO	MED	VAF	CHE	PHY	MAT	GEO	MEC[2)]	CSE	CEA
Aachen TH	152.2	1.3	2.0	3.7	18.8		4.9	6.0	2.1	5.5	72.4	23.8	11.6
Munich LMU	137.9	7.6	9.6	7.2	85.4	3.3	5.2	9.9	1.0	5.9		2.7	
Munich TU	137.3		5.2	4.5	33.4	10.0	10.7	11.5	2.1	0.1	24.7	25.7	9.4
Heidelberg U	131.4	5.9	4.8	12.6	81.9		7.1	13.8	3.2	1.9		0.1	
Berlin HU	112.2	11.7	10.1	9.9	60.9	3.8	3.0	5.1	3.3	1.1		3.3	
Berlin FU	109.8	12.2	11.8	2.7	55.9	3.4	5.8	8.2	1.9	5.0		3.0	
Dresden TU	108.2	2.5	10.5	3.9	16.4	2.9	3.6	6.7	0.2	0.0	36.9	17.6	6.9
Stuttgart U	101.8	2.3	8.5	1.8			4.4	5.0	0.3	0.3	51.7	10.8	16.6
Karlsruhe TH	89.3	0.1	6.2	0.9			2.3	3.6	3.1	4.1	26.8	24.4	17.6
Tübingen U	87.7	10.0	4.0	8.7	48.2		3.6	5.1	1.4	4.7		2.2	
Münster U	85.6	5.7	9.0	6.0	42.5		5.9	7.0	1.6	5.6	0.1	2.1	
Freiburg U	85.4	3.4	4.0	12.4	40.5	4.4	3.1	5.2	0.8	2.0		9.5	
Erlangen-Nuremberg U	85.2	3.2	5.7	3.5	31.3		3.1	6.5	0.8	1.2	20.9	8.9	
Frankfurt/Main U	84.8	5.0	19.9	3.3	40.4		6.9	6.2	1.0	1.7		0.1	
Göttingen U	83.8	3.0	3.4	9.9	38.2	12.4	3.5	7.0	1.5	4.5		0.4	
Hamburg U	82.6				82.6								
Bonn U	81.8	3.3	2.2	8.7	32.8	5.1	3.7	8.7	4.6	5.6		5.4	1.8
Cologne U	78.8	10.9	4.5	9.2	33.3		6.2	8.9	0.9	4.7		0.3	
Berlin TU	78.0	1.5	5.2	0.1	1.2	4.5	4.7	4.2	9.8	0.7	23.8	19.5	2.8
Bochum U	71.6	3.5	8.5	5.4	16.4		6.8	7.8	1.0	2.7	9.0	4.5	6.0
Mainz U	67.5	4.8	2.4	3.1	36.7		7.7	9.6	0.5	2.7		0.1	
Bremen U	67.2	0.9	8.8	3.1			1.0	6.8	4.1	9.2	20.3	12.9	
Würzburg U	66.2	2.1	3.1	5.8	42.8		3.3	6.7	0.2	1.0		1.1	
Darmstadt TU	65.5	0.7	2.5	1.7			3.5	4.2	0.6	5.8	26.5	12.5	7.6
Duisburg-Essen U	63.8	2.1	9.6	1.4	26.9	0.1	2.7	3.2	1.6	0.2	6.0	8.6	1.4
Hannover U	60.1	0.3	3.3	1.2		2.6	4.0	5.8	0.6	1.5	26.2	6.1	8.6
Kiel U	54.9	1.7	1.8	2.3	32.1	5.9	1.0	2.0	0.2	4.4	1.7	1.9	
Brunswick TU	54.5	0.3	0.9	3.2	0.8		2.2	1.3	0.4	0.5	21.9	12.1	10.9
Jena U	52.7	5.1	5.7	6.9	14.8		6.1	8.9	0.1	3.8		1.3	
Hannover MedH	52.6				52.6								
Ulm U	51.5	0.0	0.7	3.0	33.7		2.7	1.2	3.8		0.6	5.8	
Leipzig U	45.2	5.0	5.1	2.9	18.6	1.3	1.8	5.2	0.6	1.0		2.3	1.4
Düsseldorf U	43.8	2.1	1.7	6.7	26.2		2.5	3.4	0.2	0.0		0.9	
Regensburg U	41.7	1.4	4.1	3.2	25.2		2.0	5.1	0.5	0.3			
Saarbrücken U	41.1	4.3	3.7	1.3	15.8		2.7	2.2	0.5	0.4	3.0	7.1	
Giessen U	39.6	2.5	3.6	3.6	19.7	5.1	1.7	3.1	0.2	0.1			
Halle-Wittenberg U	38.5	3.7	3.4	7.8	13.4	3.5	1.4	1.2	0.1	0.8	2.9	0.3	
Dortmund TU	35.6	0.4	7.3	0.0			2.3	4.5	1.2		13.2	5.0	1.7
Magdeburg U	32.9	0.2	2.6	0.3	13.4		0.2	0.8	0.5		7.8	7.1	
Bielefeld U	31.9	2.9	8.0	7.2	2.5		1.9	3.4	2.6			3.4	
Constance U	29.9	6.4	6.8	6.6			2.4	6.6	0.3			0.9	
Rostock U	29.3	0.3	1.6	2.4		2.7	1.9	3.8	0.0		6.7	9.5	0.3
Lübeck U	28.5			0.2	23.3		0.3	0.0	1.1			3.5	
Greifswald U	27.7	1.3	2.4	7.7	12.3		0.9	1.7	0.5	0.8			
Kaiserslautern TU	27.1		0.3	2.3			2.2	7.2	1.7		6.6	4.3	2.4
Chemnitz TU	26.7	0.0	3.2				0.9	1.4	0.5	0.0	14.6	6.0	
Marburg U	26.2	2.6	2.7	3.5	9.4		3.8	2.4	0.1	1.0		0.7	
Potsdam U	24.8	3.7	4.4	9.0			1.7	2.8	0.6	2.2		0.4	
Kassel U	24.8	0.6	3.2	1.0		3.9	0.1	1.3	0.5		5.6	6.4	2.1
Paderborn U	23.7	0.7	2.8	0.4	0.0		0.6	2.1	2.7	0.0	5.7	8.6	
Hohenheim U	23.6	0.1	2.4	0.4	2.5	15.5	0.3	2.3	0.1				
Freiberg TU	22.8		0.4				1.5	0.5	0.1	1.3	18.2	0.7	
Bayreuth U	20.2	1.5	1.1	3.0			4.7	1.3	0.7	3.4	4.1	0.4	
Mannheim U	18.3	1.3	14.5						0.2	0.1		2.2	
Clausthal TU	17.8		0.2				0.7	1.2	0.2		15.5	0.1	
Ilmenau TU	16.3		0.1					0.5	0.1		7.1	8.5	
Hamburg-Harburg TU	15.9										9.4	4.2	2.3
Osnabrück U	15.5	1.8	3.2	3.7	2.5		0.4	1.4	0.2	0.2	2.0	0.1	

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Higher education institution	Total	HUM	SOC	BIO	MED	VAF	CHE	PHY	MAT	GEO	MEC[2)]	CSE	CEA
Cottbus TU	15.1	0.3	0.1				0.4	0.9	0.0		9.7	1.0	2.7
Oldenburg U	14.8	0.3	3.0	2.5			0.7	3.4	1.5	0.5		2.8	
Siegen U	13.9	0.8	3.6				1.6	1.6	0.3		3.6	1.1	1.4
Augsburg U	13.8	1.2	5.1				0.1	5.5	0.3	0.2		1.4	
Wuppertal U	12.6	0.8	1.2	0.0			2.4	2.1	0.6		1.9	2.0	1.6
Trier U	11.0	4.3	4.0						0.2	2.0		0.5	
Hagen FernU	10.4	2.3	6.5						0.0			1.7	
Witten-Herdecke U	10.3		3.8	1.9	4.0		0.5		0.1				
Munich UdBW	9.7		0.4								2.2	2.2	4.9
Hannover TiHo	7.6			0.3		7.3							
Weimar U	7.3	0.2	0.9										6.3
Koblenz-Landau U	7.1	0.3	2.3	0.4			0.1	0.0	0.7	0.0		3.3	
Hamburg UdBW	6.3	0.0	2.3								3.5	0.5	
Bamberg U	5.4	1.0	3.3						0.0	0.1		0.8	0.2
Bremen JU	5.4	0.0	0.9	1.5			0.2	0.5	0.5	1.2	0.6		
Lüneburg U	5.2	0.3	3.5						0.5		0.4	0.0	0.4
Erfurt U	4.1	2.1	1.9							0.0			
Passau U	4.0	0.5	1.7						0.2	0.0		1.6	
Frankfurt/Oder U	3.2	1.0	2.2										
Eichstätt-Ingolstadt KathU	3.2	0.6	1.6						0.0	0.9		0.0	
Karlsruhe HTW	3.2		0.0								0.6	1.3	1.3
Berlin TFH	2.7										2.7		
Freiburg PH	1.2	0.4	0.4	0.1			0.0		0.3				
Hildesheim U	1.1	0.2	0.7						0.1				
Karlsruhe HfG	0.4	0.4											
Frankfurt/Main PhilThH	0.3	0.3											
Total reporting sample[1)]	**3,590.9**	**171.1**	**312.6**	**226.2**	**1,189.4**	**97.7**	**173.8**	**265.6**	**74.5**	**103.0**	**517.1**	**329.7**	**130.3**
Other HEIs	**263.1**	**28.4**	**90.2**	**4.0**	**5.4**	**9.6**	**3.3**	**4.4**	**3.3**	**0.4**	**64.6**	**36.7**	**12.8**
HEIs overall	**3,854.1**	**199.5**	**402.8**	**230.2**	**1,194.8**	**107.3**	**177.1**	**270.0**	**77.7**	**103.4**	**581.6**	**366.4**	**143.1**
Based on: No. of HEIs	**290**	**183**	**214**	**84**	**68**	**55**	**92**	**89**	**102**	**73**	**142**	**168**	**91**

Notes:
HUM: Humanities
SOC: Social and behavioural sciences
BIO: Biology
MED: Medicine
VAF: Veterinary medicine, agriculture and forestry
CHE: Chemistry
PHY: Physics
MAT: Mathematics
GEO: Geosciences
MEC: Mechanical engineering
CSE: Computer science, system and electrical engineering
CEA: Construction engineering and architecture

[1)] Only those HEIs which received more than € 0.5 million in DFG awards from 2005 to 2007.

[2)] The subject classification system of the Federal Statistical Office does not permit an adequate differentiation of the DFG subject areas of "mechanical and industrial engineering", "thermal and process engineering" and "materials science and engineering". For statistical purposes, and contrary to the usual DFG classification system, they are therefore amalgamated in the subject area of "mechanical engineering". Further remarks on methodology can be found in the appendix.

Data basis and source:
Federal Statistical Office (DESTATIS): The third-party funding acquired in 2006 by universities, universities of applied sciences and colleges of education, theology and art.
Calculations by the DFG.

Table A-3:
Professors working full-time in 2006 by HEI per scientific discipline

Higher education institution	Total	Humanities and social sciences	Life sciences	Natural sciences	Engineering sciences
Aachen TH	341	55	93	70	123
Augsburg U	156	104		42	10
Bamberg U	126	108		5	13
Bayreuth U	181	80	14	66	21
Berlin FU	528	230	194	92	11
Berlin HU	520	230	192	81	18
Berlin TFH	270	46	20	44	160
Berlin TU	313	67	26	81	139
Bielefeld U	238	152	23	53	11
Bochum U	379	182	47	86	64
Bonn U	431	166	139	106	20
Bremen JU	93	36	12	30	14
Bremen U	303	160	19	76	48
Brunswick TU	232	54	28	58	92
Chemnitz TU	155	64		40	51
Clausthal TU	82	8		31	43
Cologne U	471	255	118	94	4
Constance U	170	105	23	35	7
Cottbus TU	119	10		19	89
Darmstadt TU	272	59	13	86	114
Dortmund TU	281	116	4	65	96
Dresden TU	522	152	107	83	181
Duisburg-Essen U	410	180	74	76	81
Düsseldorf U	287	90	145	44	8
Eichstätt-Ingolstadt KathU	107	93		13	2
Erfurt U	88	87			1
Erlangen-Nuremberg U	466	162	147	87	71
Frankfurt/Main PhilThH	9	9			
Frankfurt/Main U	503	269	123	101	11
Frankfurt/Oder U	58	57		1	
Freiberg TU	92	16	1	29	46
Freiburg PH	70	53	4	11	2
Freiburg U	371	132	151	56	32
Giessen U	326	147	136	43	
Göttingen U	427	159	183	78	7
Greifswald U	217	90	84	44	
Hagen FernU	84	54		6	24
Halle-Wittenberg U	333	134	118	57	23
Hamburg U	685	342	188	133	22
Hamburg UdBW	90	58		3	29
Hamburg-Harburg TU	95	1		2	92
Hannover MedH	69		69		
Hannover TiHo	61		59	1	
Hannover U	325	115	43	79	88
Heidelberg U	394	140	172	77	5
Hildesheim U	53	46	1	4	2
Hohenheim U	113	33	71	9	
Ilmenau TU	87	20		15	52
Jena U	346	158	97	74	16
Kaiserslautern TU	169	20	12	53	84
Karlsruhe HfG	17	15			2
Karlsruhe HTW	170	32			138
Karlsruhe TH	249	46	10	74	118
Kassel U	302	155	31	31	86
Kiel U	345	137	111	63	34
Koblenz-Landau U	136	95	3	20	18

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Higher education institution	Total	Humanities and social sciences	Life sciences	Natural sciences	Engineering sciences
Leipzig U	406	197	122	69	19
Lübeck U	64		49	5	9
Lüneburg U	167	122		8	37
Magdeburg U	206	61	59	26	61
Mainz U	388	197	119	69	3
Mannheim U	121	96		10	15
Marburg U	334	162	107	57	9
Munich LMU	687	309	248	114	16
Munich TU	393	30	130	84	149
Munich UdBW	161	55			106
Münster U	471	231	133	99	8
Oldenburg U	168	86	17	47	18
Osnabrück U	191	126	18	29	18
Paderborn U	179	91	2	42	44
Passau U	94	77		9	8
Potsdam U	223	128	27	58	10
Regensburg U	274	126	96	53	
Rostock U	278	92	94	40	53
Saarbrücken U	257	97	78	42	40
Siegen U	241	124	3	34	80
Stuttgart U	239	41	11	55	132
Trier U	151	118		28	5
Tübingen U	386	179	125	67	14
Ulm U	152	12	68	37	34
Weimar U	97	34		1	61
Witten-Herdecke U	34	13	17	4	
Wuppertal U	239	104	1	58	76
Würzburg U	346	115	152	70	9
Total reporting sample[1)]	**20,683**	**8,601**	**4,783**	**3,841**	**3,458**
Other HEIs	**16,177**	**8,078**	**768**	**748**	**6,583**
HEIs overall	**36,860**	**16,680**	**5,551**	**4,589**	**10,041**
Based on: No. of HEIs	**351**	**340**	**135**	**143**	**209**

[1)] Only those HEIs which received more than € 0.5 million in DFG awards from 2005 to 2007.

Data basis and source:
Federal Statistical Office (DESTATIS): Scientific and artistic personnel working full-time (based on full-time equivalents) in 2006 at universities, universities of applied sciences and colleges of education, theology and art. Calculations by the DFG.

Table A-4:
Scientific and artistic personnel working full-time in 2006 by HEI per scientific discipline

Higher education institution	Total	Humanities and social sciences	Life sciences	Natural sciences	Engineering sciences
Aachen TH	3,645	248	1,253	439	1,705
Augsburg U	678	425	1	197	55
Bamberg U	390	314		15	60
Bayreuth U	858	293	84	333	148
Berlin FU	3,568	961	2,043	504	61
Berlin HU	3,360	868	2,007	401	84
Berlin TFH	277	48	20	47	161
Berlin TU	2,015	293	120	451	1,152
Bielefeld U	1,081	573	154	284	70
Bochum U	1,966	688	322	454	502
Bonn U	2,718	557	1,453	566	143
Bremen JU	180	58	33	59	31
Bremen U	1,445	516	80	405	444
Brunswick TU	1,396	164	149	222	860
Chemnitz TU	928	262		186	480
Clausthal TU	440	22		123	295
Cologne U	2,926	1,022	1,414	472	17
Constance U	709	349	130	185	45
Cottbus TU	542	49		75	418
Darmstadt TU	1,683	210	63	451	960
Dortmund TU	1,407	392	9	315	690
Dresden TU	3,626	548	1,205	384	1,489
Duisburg-Essen U	2,450	569	998	404	480
Düsseldorf U	1,928	295	1,386	213	33
Eichstätt-Ingolstadt KathU	264	229		31	5
Erfurt U	273	267		1	4
Erlangen-Nuremberg U	3,168	641	1,442	430	655
Frankfurt/Main PhilThH	22	22			
Frankfurt/Main U	2,580	834	1,254	448	43
Frankfurt/Oder U	186	183		3	
Freiberg TU	544	47	9	162	326
Freiburg PH	184	142	12	23	6
Freiburg U	2,989	478	1,966	289	257
Giessen U	1,933	524	1,176	228	5
Göttingen U	2,510	535	1,561	395	19
Greifswald U	1,198	265	794	138	
Hagen FernU	393	259		20	114
Halle-Wittenberg U	2,033	548	1,145	236	103
Hamburg U	3,016	812	1,588	542	74
Hamburg UdBW	268	154		9	104
Hamburg-Harburg TU	449	4		8	437
Hannover MedH	1,048		1,048		
Hannover TiHo	272		268	4	
Hannover U	1,752	373	159	373	847
Heidelberg U	3,224	535	2,171	503	15
Hildesheim U	188	151	6	22	8
Hohenheim U	615	143	419	53	
Ilmenau TU	647	86		71	490
Jena U	2,258	592	1,188	395	83
Kaiserslautern TU	769	65	75	235	395
Karlsruhe HfG	35	33			2
Karlsruhe HTW	217	42			175
Karlsruhe TH	2,084	251	52	499	1,282
Kassel U	1,034	417	108	121	389
Kiel U	2,136	441	1,219	308	167
Koblenz-Landau U	401	263	11	48	80

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Higher education institution	Total	Humanities and social sciences	Life sciences	Natural sciences	Engineering sciences
Leipzig U	2,401	703	1,283	301	114
Lübeck U	1,040		945	23	72
Lüneburg U	351	277		25	49
Magdeburg U	1,529	267	721	110	432
Mainz U	2,541	671	1,406	450	14
Mannheim U	640	490		29	121
Marburg U	1,870	477	1,135	230	29
Munich LMU	4,739	1,151	2,843	638	107
Munich TU	3,872	219	1,498	608	1,547
Munich UdBW	413	116			297
Münster U	3,247	976	1,632	606	34
Oldenburg U	661	285	72	222	82
Osnabrück U	609	331	119	99	60
Paderborn U	782	273	7	146	357
Passau U	345	258	1	27	59
Potsdam U	989	518	144	282	45
Regensburg U	1,711	453	982	275	
Rostock U	1,653	277	888	168	321
Saarbrücken U	1,820	411	953	202	254
Siegen U	748	336	5	134	273
Stuttgart U	2,340	245	72	377	1,647
Trier U	555	431		105	18
Tübingen U	2,884	548	1,919	313	103
Ulm U	1,685	58	1,173	243	212
Weimar U	374	91		5	278
Witten-Herdecke U	173	49	116	8	
Wuppertal U	716	267	4	205	240
Würzburg U	2,290	407	1,502	334	47
Total reporting sample[1)]	**121,879**	**29,645**	**50,011**	**18,943**	**23,279**
Other HEIs	**23,752**	**12,910**	**1,115**	**1,041**	**8,686**
HEIs overall	**145,630**	**42,555**	**51,126**	**19,984**	**31,965**
Based on: No. of HEIs	**369**	**359**	**140**	**144**	**212**

[1)] Only those HEIs which received more than € 0.5 million in DFG awards from 2005 to 2007.

Data basis and source:
Federal Statistical Office (DESTATIS): Scientific and artistic personnel working full-time (based on full-time equivalents) in 2006 at universities, universities of applied sciences and colleges of education, theology and art. Calculations by the DFG.

Table A-5:
DFG system of subjects, Review Boards and scientific disciplines[1)]

Scientific discipline / Review Board / subject area	
Humanities and social sciences	
101	**Ancient cultures**
101-01	Prehistory
101-02	Classical philology
101-03	Ancient history
101-04	Classical archaeology
101-05	Egyptology and ancient near eastern studies
102	**History**
102-01	Medieval history
102-02	Early modern history
102-03	Modern and current history
102-04	History of science
103	**Fine arts, music, theatre and media studies**
103-01	Art history
103-02	Musicology
103-03	Theatre and media studies
104	**Linguistics**
104-01	General and applied linguistics
104-02	Individual linguistics
104-03	Typology, non-European languages and historical linguistics
105	**Literary studies**
105-01	Older German literature
105-02	Modern German literature
105-03	European and American literature
105-04	General and comparative literature and cultural studies
106	**Non-European languages and cultures, social and cultural anthropology, Jewish studies and religious studies**
106-01	Ethnology / European ethnology
106-02	Regional studies, languages and cultures: Africa, America, Asia, Australia
106-03	Study of religion
106-04	Islamic studies, Arabian studies, Semitic studies
106-05	Jewish studies
107	**Theology**
107-01	Protestant theology
107-02	Roman catholic theology
108	**Philosophy**
108-01	History of philosophy
108-02	Theoretical philosophy
108-03	Practical philosophy
109	**Education sciences**
109-01	General education and historical perspectives
109-02	Teaching-learning process and qualification process
109-03	Socialisation, institutions and professions
110	**Psychology**
110-01	General and physiological psychology, methodology and evaluation
110-02	Developmental and educational psychology
110-03	Social psychology, industrial and organisational psychology
110-04	Clinical psychology, differential psychology and diagnostics

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Scientific discipline / Review Board / subject area	
111	**Social sciences**
111-01	Sociological theory
111-02	Empirical social research
111-03	Communication science
111-04	Political science
112	**Economics**
112-01	Economic theory
112-02	Economic and social policy
112-03	Finance
112-04	Business administration
112-05	Statistics and econometrics
112-06	Economic and social history
113	**Jurisprudence**
113-01	Legal and political philosophy, legal history, legal theory
113-02	Private law
113-03	Public law
113-04	Criminal law and law of criminal procedure
113-05	Criminology
Life sciences	
201	**Foundations of biology and medicine**
201-01	Biochemistry
201-02	Biophysics
201-03	Cell biology
201-04	Structural biology
201-05	General genetics
201-06	Developmental biology
201-07	Bioinformatics and theoretical biology
201-08	Anatomy
202	**Plant science**
202-01	Systematic botany and evolution
202-02	Plant ecology and ecosystem research
202-03	Allelobotany
202-04	Plant physiology
202-05	Plant biochemistry and biophysics
202-06	Plant cell and developmental biology
202-07	Plant genetics
203	**Zoology**
203-01	Special zoology, morphology
203-02	Evolution, biodiversity, physical anthropology
203-03	Comparative biochemistry, animal physiology and ecophysiology
203-04	Sensory and behavioural biology
203-05	Animal ecology and ecosystem research
203-06	Animal genetics, cell and developmental biology
204	**Microbiology, virology and immunology**
204-01	Metabolism, biochemistry and genetics of microorganisms
204-02	Microbial ecology and applied microbiology
204-03	Medical microbiology, molecular infection biology
204-04	Virology
204-05	Immunology
205	**Medicine**
205-01	Medical biometry, epidemiology, medical informatics
205-02	Occupational and social medicine
205-03	Human genetics

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Scientific discipline / Review Board / subject area	
205-04	Physiology
205-05	Nutritional sciences
205-06	Pathology and forensic medicine
205-07	Clinical chemistry and pathobiochemistry
205-08	Pharmacy
205-09	Pharmacology and toxicology
205-10	Anaesthesiology
205-11	Internal medicine - Cardiology
205-12	Internal medicine - Angiology
205-13	Internal medicine - Pneumology
205-14	Internal medicine - Hematology, oncology, transfusion medicine
205-15	Internal medicine - Gastroenterology, metabolism
205-16	Internal medicine - Nephrology
205-17	Internal medicine - Endocrinology, diabetology
205-18	Internal medicine - Rheumatology
205-19	Pediatrics
205-20	Gynaecology and obstetrics
205-21	Dermatology
205-22	Urology
205-23	Vascular and visceral surgery
205-24	Cardiothoracic surgery
205-25	Orthopaedics, traumatology
205-26	Dentistry, oral surgery
205-27	Radiology, nuclear medicine, radiotherapy
205-28	Biomedical technology and medical physics
206	**Neurosciences**
206-01	Molecular neuroscience and neurogenetics
206-02	Cellular neuroscience
206-03	Developmental neurobiology
206-04	Systemic neuroscience and behaviour
206-05	Comparative neurobiology
206-06	Cognitive neuroscience and neuroimaging
206-07	Molecular neurology
206-08	Clinical neurosciences I - Neurology, neurosurgery
206-09	Biological psychiatry
206-10	Clinical neurosciences II - Psychiatry, psychotherapy
206-11	Clinical neurosciences III - Ophthalmology
206-12	Clinical neurosciences IV - Otolaryngology
207	**Veterinary medicine, horticulture, agriculture and forestry**
207-01	Soil sciences
207-02	Plant cultivation
207-03	Plant nutrition
207-04	Ecology of agricultural landscapes
207-05	Plant breeding
207-06	Phytomedicine
207-07	Agricultural and food process engineering
207-08	Agricultural economics and sociology
207-09	Inventory control and use of forest resources
207-10	Basic forest research
207-11	Animal breeding, maintenance and hygiene
207-12	Animal nutrition and nutrition physiology
207-13	Foundations of veterinary medicine
207-14	Foundations of pathogenesis, diagnostics, therapy
207-15	Clinical veterinary medicine
Natural sciences	
301	**Molecular chemistry**
301-01	Inorganic molecular chemistry
301-02	Organic molecular chemistry

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Scientific discipline / Review Board / subject area	
302	**Chemical solid state research**
302-01	Solid state and surface chemistry, material synthesis
302-02	Physical chemistry of solids and surfaces
302-03	Theory and modelling
303	**Physical and theoretical chemistry**
303-01	Physical chemistry of molecules and liquids
303-02	General theoretical chemistry
304	**Analytical chemistry and method development**
304-01	Analytical chemistry and method development
305	**Biological chemistry and food chemistry**
305-01	Biological and biomimetic chemistry
305-02	Food chemistry
306	**Polymer research**
306-01	Polymer chemistry
306-02	Polymer physics
306-03	Polymer materials
307	**Condensed matter physics**
307-01	Experimental condensed matter physics
307-02	Theoretical condensed matter physics
308	**Optics, quantum optics and physics of atoms, molecules and plasmas**
308-01	Optics, quantum optics and physics of atoms, molecules and plasmas
309	**Particles, nuclei and fields**
309-01	Particles, nuclei and fields
310	**Statistical physics and nonlinear dynamics**
310-01	Statistical physics and nonlinear dynamics
311	**Astrophysics and astronomy**
311-01	Astrophysics and astronomy
312	**Mathematics**
312-01	Mathematics
313	**Atmospheric science and oceanography**
313-01	Atmospheric science
313-02	Oceanography
314	**Geology and palaeontology**
314-01	Geology and palaeontology
315	**Geophysics and geodesy**
315-01	Geophysics, geodesy, remote sensing, geoinformatics
316	**Geochemistry, mineralogy and crystallography**
316-01	Geochemistry, mineralogy and crystallography
317	**Geography**
317-01	Physical geography
317-02	Human geography
318	**Water research**
318-01	Water research

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Scientific discipline / Review Board / subject area	
Engineering sciences	
401	**Production technology**
401-01	Metal-cutting manufacturing engineering
401-02	Primary shaping and reshaping technology
401-03	Micro-, precision, mounting, joining, separation technology
401-04	Plastics engineering
401-05	Production automation, factory operation, operations management
402	**Mechanics and constructive mechanical engineering**
402-01	Construction, machine elements
402-02	Mechanics
402-03	Lightweight construction, textile technology
402-04	Acoustics
403	**Process engineering and technical chemistry**
403-01	Chemical and thermal process engineering
403-02	Technical chemistry
403-03	Mechanical process engineering
403-04	Biological process engineering
404	**Heat energy technology, thermal machines and drives**
404-01	Energy process engineering
404-02	Technical thermodynamics
404-03	Fluid mechanics
404-04	Hydraulic and turbo engines and piston engines
405	**Materials engineering**
405-01	Structural and functional materials
405-02	Sintered and composite materials
405-03	Surfaces, coatings and functional layers
406	**Materials science and raw materials**
406-01	Raw Materials, recycling, mining and metallurgy
406-02	Metallic, ceramic and polymer materials
406-03	Metallurgy, thermodynamics of multiphase metallic systems
406-04	Biomaterials
407	**System engineering**
407-01	Automation technology, control systems and robotics
407-02	Measuring systems
407-03	Microsystems
407-04	Traffic and transport systems, logistics
407-05	Ergonomics, human-machine systems
408	**Electrical engineering**
408-01	Electronic semiconductors, components, circuits, systems
408-02	Communication and high-frequency technology
408-03	Electrical energy production, distribution, application
409	**Computer science**
409-01	Theoretical computer science
409-02	Software technology
409-03	Operating, communication and information systems
409-04	Artificial intelligence, image and language processing
409-05	Computer architecture and embedded systems

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Scientific discipline / Review Board / subject area	
410	**Construction engineering and architecture**
410-01	Architecture, construction research and history
410-02	City, regional, traffic and landscape planning
410-03	Construction material sciences, chemistry, physics
410-04	Construction engineering, operation, virtual design
410-05	Continuum mechanics, statics and dynamics
410-06	Geotechnics, hydraulic engineering

[1] Data as of 2009.

Table A-6:
DFG awards 2005 to 2007 by HEI per subject area (in millions of euros)

Higher education institution	Total	HUM	SOC	BIO	MED	VAF	CHE	PHY	MAT	GEO	MEC[2)]	CSE	CEA	INS[3)]
Aachen TH	257.0	1.7	3.7	7.0	18.9	0.6	14.3	5.1	5.1	3.6	107.5	40.3	7.9	41.5
Munich LMU	249.0	21.0	14.1	53.8	53.9	5.1	13.2	34.7	2.8	7.7		2.9		39.8
Heidelberg U	215.4	33.3	6.2	30.5	59.0		16.0	12.1	4.5	6.4	1.4	4.8		41.3
Munich TU	200.4	0.7	1.1	12.5	33.7	9.6	14.4	30.3	2.0	2.1	25.2	30.4	7.0	31.4
Berlin FU	194.4	54.7	12.8	18.6	45.6	1.8	11.0	11.6	5.7	8.9	0.9	1.2		21.7
Freiburg U	165.5	10.6	2.1	33.5	46.9	0.9	7.7	5.8	2.8	2.0	1.2	11.0		41.0
Karlsruhe TH	159.4	0.6	2.3	3.7	3.2		11.2	15.6	1.2	8.9	38.4	24.7	4.6	45.1
Erlangen-Nuremberg U	157.6	7.2	2.8	10.6	43.4	0.6	17.3	11.4	2.7	1.7	46.6	13.0	0.3	
Göttingen U	153.5	7.7	6.0	30.4	31.4	8.5	8.9	12.1	3.1	6.3	2.2	0.2		36.7
Berlin HU	153.4	30.8	15.2	21.2	48.9	1.8	8.8	8.6	8.4	5.2	1.0	3.5	0.0	
Cologne U	126.4	15.2	8.0	32.9	35.7	0.9	4.6	16.3	2.5	7.9	0.4	1.9		
Frankfurt/Main U	124.8	22.6	11.7	20.1	40.0		15.0	4.1	1.0	8.6	0.1	1.5		
Bonn U	122.6	4.3	12.1	11.4	27.9	3.9	6.8	16.3	21.7	13.1	1.0	3.9	0.1	
Tübingen U	120.4	22.9	10.1	18.6	43.6	1.0	3.1	7.5	1.8	5.1	1.2	5.5		
Münster U	119.9	33.1	8.6	16.2	24.8	0.0	15.3	4.9	7.8	6.9	1.3	1.1		
Constance U	119.7	24.3	15.7	12.7	5.9	0.4	3.1	10.7	0.5	1.6	0.1	3.8		40.9
Würzburg U	110.4	4.1	3.5	24.4	52.0	0.3	8.6	8.4	4.2	1.4	0.2	3.3		
Dresden TU	107.3	6.1	3.6	10.4	20.3	1.2	6.6	7.0	1.0	4.2	30.1	9.4	7.4	
Stuttgart U	106.7	4.3	2.3	5.2	0.7	0.1	8.4	11.2	4.1	3.5	40.9	18.8	7.3	
Darmstadt TU	106.1	1.5	4.6	4.8	1.1	0.2	5.5	9.1	6.7	2.0	54.0	15.6	1.1	
Hamburg U	98.7	9.9	7.0	7.5	20.3	2.0	5.4	20.6	1.3	22.3	0.5	1.8	0.1	
Mainz U	97.5	8.6	1.6	6.7	34.8	0.1	13.3	22.0	1.0	8.3	1.2			
Bochum U	93.0	7.1	4.1	10.9	10.3	0.6	7.6	14.4	1.7	7.0	18.1	4.1	7.2	
Hannover U	90.2	1.0	1.0	1.1	1.0	2.6	4.0	21.3	1.7	5.9	41.2	7.1	2.2	
Bremen U	86.7	1.6	11.0	1.5	2.1	0.3	1.1	6.1	5.4	23.0	21.0	13.6	0.0	
Kiel U	81.6	5.7	3.8	10.5	29.7	4.8	5.0	3.1	0.2	11.8	2.6	4.2	0.3	
Berlin TU	77.0	3.0	2.3	2.5	0.6	2.0	11.2	5.2	12.2	2.6	23.4	10.4	1.4	
Bielefeld U	74.9	16.0	13.9	14.6	2.1	0.2	4.7	6.7	5.8	0.2	2.0	8.9		
Giessen U	72.8	11.3	4.9	12.2	26.0	12.2	2.0	3.5	0.2	0.2	0.3	0.1		
Jena U	66.8	10.9	9.2	10.6	9.6	0.8	5.4	7.1	1.0	6.6	1.6	4.0		
Hannover MedH	65.9	0.2	0.2	6.6	56.6	1.2	0.3				0.6	0.2		
Düsseldorf U	63.6	3.5	3.2	12.3	27.7	0.0	5.2	9.5	0.6	0.1	0.4	1.0		
Saarbrücken U	61.9	10.0	2.2	7.5	12.6		2.1	3.2	0.5	0.1	4.3	19.1	0.3	
Ulm U	59.5	0.1	0.4	9.4	31.5	0.2	8.4	2.0	1.0		2.0	4.5		
Marburg U	59.3	6.0	6.4	17.8	17.8	0.1	4.2	4.4	0.3	1.5	0.2	0.7		
Dortmund TU	58.8	0.3	2.0	0.7	1.1	0.8	3.9	5.4	3.8	0.2	28.7	11.1	0.8	
Brunswick TU	54.8	0.5	0.7	4.6	3.5	0.9	3.3	2.5	0.0	1.5	17.8	10.4	9.0	
Regensburg U	52.5	3.1	1.0	7.8	22.0		6.5	10.1	1.5	0.4		0.1		
Duisburg-Essen U	52.3	0.7	5.9	5.1	10.8	0.1	3.0	10.7	1.7	1.6	7.8	3.8	1.1	
Leipzig U	52.2	6.4	4.4	9.1	11.2	1.0	6.7	5.3	1.4	2.1	0.9	3.2	0.4	
Halle-Wittenberg U	46.9	8.8	3.5	14.8	5.5	2.4	3.9	4.3	0.2	1.6	1.5	0.4	0.0	
Bayreuth U	44.3	6.2	1.4	6.5	1.3	5.2	9.3	3.1	1.3	5.3	3.2	1.7		
Potsdam U	36.0	7.1	4.9	11.7	0.6	0.8	2.2	2.2	1.3	5.0	0.1	0.3		
Kaiserslautern TU	31.8			4.3	2.0		3.6	6.5	1.9	0.5	6.8	6.0	0.4	
Magdeburg U	25.9	0.4	0.7	1.2	10.0	0.1	0.5	0.4	1.4		7.0	4.2		
Chemnitz TU	25.9	0.1	1.9				2.0	1.0	1.3		13.3	6.2		
Paderborn U	24.2	1.3	1.0	0.1			0.9	2.0	3.2		4.3	11.3		
Rostock U	22.6	1.1	0.8	1.5	3.2	0.8	3.0	5.1		0.3	2.8	4.0		
Hohenheim U	20.8	0.1	0.6	2.4	1.8	11.2	1.0			2.6	0.6	0.4		
Lübeck U	20.6		0.3	2.7	13.0	0.1	0.4		0.3	0.0	0.1	3.7		
Mannheim U	20.0	0.3	15.9	0.0	0.6				0.6		0.1	2.4		
Oldenburg U	19.8	0.6	0.5	2.0	5.8	0.1	1.7	0.4	0.1	3.5	0.3	4.7	0.1	
Augsburg U	18.0	2.7	1.4	0.0	0.0		0.9	8.5	0.8	0.4	0.5	2.7		
Osnabrück U	17.9	1.0	2.4	6.4	2.8	0.2		3.3	0.1	0.4		1.2		
Siegen U	17.7	4.1	1.4	0.1			2.8	0.7	0.2		3.3	4.8	0.4	
Hamburg-Harburg TU	16.2	1.3					0.3	0.1			6.0	4.8	3.6	
Greifswald U	16.0	1.6	1.2	2.3	5.0	0.3	0.4	3.2	0.3	1.6	0.1			
Kassel U	14.8	0.5	2.5	0.7	0.2	1.0	0.4	0.6	0.2	0.3	5.1	1.4	2.0	

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Higher education institution	Total	HUM	SOC	BIO	MED	VAF	CHE	PHY	MAT	GEO	MEC[2]	CSE	CEA	INS[3]
Clausthal TU	14.4						2.8	0.6	0.3	0.3	9.7	0.6		
Ilmenau TU	14.2		0.2		0.3	0.1		0.6	0.3	0.1	4.9	7.8		
Trier U	12.2	7.9	3.0			0.2			0.1	0.7		0.2		
Freiberg TU	11.7	0.2			0.3	0.0	0.9	0.0	0.0	1.7	8.1	0.3	0.1	
Bamberg U	10.8	2.5	7.6		0.2					0.0	0.2	0.4		
Hannover TiHo	10.4			1.2	1.8	7.4	0.0				0.1			
Wuppertal U	9.3	1.4	1.0	0.2	0.1		1.4	1.2	1.3	0.5	0.9	1.0	0.4	
Bremen JU	8.1		2.8	1.5	0.3	0.0	0.7	0.7	0.3	0.4		1.3		
Weimar U	7.3	1.2								0.0	0.4	0.2	5.4	
Cottbus TU	6.7	0.6				0.9		0.1		0.8	2.9	0.6	0.8	
Munich UdBW	6.5	0.0	0.3	0.1			0.2	0.5	0.1	0.6	2.0	2.1	0.5	
Witten-Herdecke U	3.3	0.2		1.5	1.6									
Koblenz-Landau U	3.2	0.1	0.6			0.6	0.1			0.1		1.8		
Frankfurt/Oder U	3.0	2.4	0.6											
Hagen FernU	2.7	0.4	1.2									1.1		
Hamburg UdBW	2.1	0.2	0.6						0.0		1.1	0.2		
Erfurt U	2.1	0.7	1.5											
Passau U	2.1	0.4	0.4						0.0	0.1		1.1		
Karlsruhe HfG	0.9	0.9												
Eichstätt-Ingolstadt KathU	0.8	0.3							0.1	0.2		0.2	0.0	
Hildesheim U	0.6	0.1	0.5											
Karlsruhe HTW	0.6										0.4		0.1	
Lüneburg U	0.6		0.6											
Frankfurt/Main PhilThH	0.5	0.5												
Freiburg PH	0.5		0.5											
Berlin TFH	0.5								0.1	0.0	0.4			
Total reporting sample[1]	**5,064.4**	**469.9**	**293.5**	**598.4**	**1,024.3**	**98.3**	**342.3**	**450.8**	**146.9**	**229.5**	**614.6**	**384.1**	**72.4**	**339.4**
Other HEIs	**12.3**	**3.9**	**2.0**	**0.1**	**1.2**	**0.3**	**0.2**	**0.4**	**0.2**	**0.4**	**2.1**	**0.7**	**0.8**	**0.0**
HEIs overall	**5,076.7**	**473.9**	**295.6**	**598.6**	**1,025.5**	**98.6**	**342.4**	**451.2**	**147.1**	**229.9**	**616.8**	**384.7**	**73.2**	**339.4**
Based on: No. of HEIs	**159**	**103**	**89**	**64**	**68**	**56**	**65**	**66**	**68**	**66**	**78**	**77**	**40**	**9**

Notes:
HUM: Humanities
SOC: Social and behavioural sciences
BIO: Biology
MED: Medicine
VAF: Veterinary medicine, agriculture and forestry
CHE: Chemistry
PHY: Physics
MAT: Mathematics
GEO: Geosciences
MEC: Mechanical engineering
CSE: Computer science, system and electrical engineering
CEA: Construction engineering and architecture
INS: Institutional Strategies

[1] Only those HEIs which received more than € 0.5 million in DFG awards from 2005 to 2007.

[2] For the projects approved from 2006 to 2007 in the context of the Excellence Initiative, there is as yet no information available for the distribution of DFG awards between the three subject areas distinguished by the DFG, "mechanical and industrial engineering", "thermal and process engineering" and "materials science and engineering". For statistical purposes they are grouped together here and considered as a single subject area "mechanical engineering". Further information on the data basis used and the methodical approach can be derived from section A.3 in the appendix.

[3] Awards in the third funding line of the Excellence Initiative (Institutional Strategies) are transdisciplinary and are therefore shown separately here.

Data basis and source:
Deutsche Forschungsgemeinschaft (DFG): DFG awards 2005 to 2007.
Calculations by the DFG.

Table A-7:
DFG awards 2005 to 2007 in the humanities and social sciences by HEI per research field (in millions of euros)

Higher education institution	Total	ACU	HIS	FMT	LIN	LIT	CUL	THE	PHI	EDU	PSY	SOC	ECO	JUR	RGC[2)]
Berlin FU	67.6	4.6	5.1	5.4	2.4	6.1	3.7	0.0	1.7	0.6	1.5	4.4	2.1	0.2	29.8
Berlin HU	45.9	0.9	6.2	2.9	2.6	3.2	3.0	0.9	3.2	1.5	3.1	1.5	4.6	1.2	11.1
Münster U	41.7	1.6	5.0	1.0	0.3	1.1	1.0	3.9	1.0	0.7	1.6	1.3	0.5	1.0	21.8
Constance U	40.0	0.5	2.1	0.2	6.2	1.7	0.1		1.1		4.1	4.0	2.1	0.5	17.3
Heidelberg U	39.5	2.4	2.1	1.4	0.7	0.7	3.0	1.0	0.2	0.1	2.6	0.8	0.7	2.0	21.8
Munich LMU	35.1	6.2	2.8	1.4	1.9	4.2	1.0	0.9	1.4	0.9	3.3	2.5	5.1	1.0	2.7
Frankfurt/Main U	34.3	4.0	3.2	0.8	2.9	1.3	0.9	0.1	0.9	0.7	1.5	2.3	2.6	0.3	12.9
Tübingen U	33.0	5.4	3.2	0.4	5.9	1.5	3.1	1.9	0.7	0.7	4.8	0.6	1.9	1.3	1.6
Bielefeld U	30.0		7.3		3.1	0.7	0.1		0.5	1.3	1.2	3.5	1.3	1.1	9.8
Cologne U	23.2	3.6	1.1	2.5	0.7	1.7	4.9		0.9	0.2	3.7	0.7	2.8	0.6	
Jena U	20.1	1.9	4.7	1.0	0.5	1.8		0.4	0.5	0.3	5.0	2.3	1.3	0.2	
Hamburg U	16.9	0.3	1.3	0.9	5.1	0.4	1.7		0.1	1.4	0.9	1.2	0.2	1.6	1.7
Bonn U	16.4	0.4	0.7	0.2	0.6	0.7	0.4	1.0	0.2	0.0	0.1	0.3	4.7	0.5	6.5
Giessen U	16.2	0.8	4.4	0.4	1.0	1.6	0.2			0.1	3.5	0.5	0.3	0.2	3.2
Mannheim U	16.2	0.2	0.1			0.0				0.2	0.8	5.0	6.6		3.3
Göttingen U	13.8	1.1	2.9	0.4	0.1	0.4	0.5	2.3		0.8	3.0	1.5	0.8	0.0	
Freiburg U	12.7	1.4	5.0		1.8	1.4	0.6	0.1	0.3	0.2	0.8	0.4	0.4	0.3	
Bremen U	12.6	0.1	0.5		0.6	0.2		0.1		0.3	0.3	6.3	0.2	1.7	2.1
Marburg U	12.3	2.0	1.1	0.1	0.6	0.7	0.6	0.5	0.3		6.3	0.0	0.1	0.0	
Halle-Wittenberg U	12.3	2.8	1.2	0.4	0.4	0.6	2.5	0.8	0.2	0.7	0.5	1.1	0.1	1.0	
Saarbrücken U	12.2	0.1	0.6	0.0	5.3	0.1			0.1	0.0	1.8	0.1		0.2	3.7
Potsdam U	11.9	0.1	0.7	0.2	4.0	0.6	0.5	0.5	0.3	0.6	3.3	0.7	0.0	0.2	0.1
Bochum U	11.2	0.3	1.0	1.8	0.4	1.2	0.7	1.2	0.3	0.2	1.3	1.2	0.6	0.3	0.8
Trier U	11.0	1.6	4.4	0.3	0.4	1.0	0.0	0.0	0.1		1.7	1.0		0.3	
Leipzig U	10.8	0.7	1.5	1.3	1.0	0.1	1.0	0.6	0.2		2.9	1.5	0.0		
Mainz U	10.2	3.4	0.5	0.1	0.8	0.0	2.8	0.8	0.0	0.4	0.4	0.8	0.0		
Bamberg U	10.0	1.0	0.3	0.0	0.0	0.0	0.2	0.8		5.3	0.1	2.2	0.0		
Erlangen-Nuremberg U	10.0	0.2	0.9	0.5	2.3	1.4	0.0	1.2	0.7	0.1	0.9	0.7	0.2	0.9	
Dresden TU	9.7	0.8	3.1		0.7	1.0		0.1	0.4	0.1	1.0	2.2	0.3		
Kiel U	9.4	1.6	0.4	0.6	1.7	0.0	0.1	0.3	0.1	0.3	0.4	0.0	1.3	0.3	2.5
Würzburg U	7.6	0.3	0.8	0.4	0.0	0.9	0.6	1.1		0.2	2.9	0.1			0.3
Bayreuth U	7.6			0.2			3.4			0.1		0.3		0.6	2.9
Düsseldorf U	6.8		1.2	0.3	1.7	0.2	0.1				2.6	0.5		0.1	
Duisburg-Essen U	6.7	0.0	0.6		0.1	0.1				3.5	0.4	1.6	0.5		
Stuttgart U	6.6	0.1	0.1	0.0	3.8	0.3				0.3	0.1	0.3	0.4		1.1
Darmstadt TU	6.1		0.9		0.2	0.1			0.3	0.2	1.6	1.1		0.1	1.6
Siegen U	5.5		0.1	1.9		1.9		0.2	0.0	0.2		1.1	0.1		
Aachen TH	5.4	0.0	0.2	0.0	0.9	0.4	0.0	0.1	0.1		0.8	0.3	0.4		2.1
Berlin TU	5.2	0.0	1.8	0.1	0.1		0.1		0.0	0.1	0.2	1.1	0.8		0.9
Augsburg U	4.2	0.0	1.1	0.3	0.3	0.6		0.3	0.0	0.3	0.0	0.8	0.4		
Regensburg U	4.1	0.1	0.5	0.2	2.0			0.3	0.0	0.4	0.4		0.2		
Osnabrück U	3.5		0.2		0.2	0.7					2.1	0.0	0.0	0.3	
Frankfurt/Oder U	3.0		0.2		0.4	0.7	0.1						0.6		1.0
Kassel U	3.0		0.1	0.2	0.2				0.0	0.5	0.8	0.5	0.1	0.5	
Karlsruhe TH	2.9			0.5				0.1			0.4	0.0	2.0		
Bremen JU	2.8										0.9	0.8	0.1	0.0	1.0
Greifswald U	2.8	0.2	0.4	1.0		0.1				0.1	0.3	0.5	0.3		
Wuppertal U	2.4				0.9	0.3		0.2		0.3	0.5	0.2			
Dortmund TU	2.3				0.3					0.0	0.2	0.2	1.5		
Paderborn U	2.3		0.2	0.9	0.1	0.2				0.2	0.2		0.6		
Erfurt U	2.1	0.0	0.4					0.2		0.1		1.0	0.1	0.3	
Hannover U	2.1	0.1	0.1	0.4	0.1	0.3			0.2	0.1			0.7	0.2	
Chemnitz TU	2.1	0.1									0.4	0.9	0.6		
Rostock U	1.9		0.4	0.0	0.1	0.4	0.0	0.1		0.1	0.3	0.2	0.2		
Munich TU	1.8	0.0	0.3	0.4					0.0		0.2	0.2	0.5		0.1
Hagen FernU	1.6		0.1						0.2		0.0	1.2			
Hamburg-Harburg TU	1.3			1.3											

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Higher education institution	Total	ACU	HIS	FMT	LIN	LIT	CUL	THE	PHI	EDU	PSY	SOC	ECO	JUR	RGC[2]
Brunswick TU	1.2		0.4							0.2	0.5				0.1
Weimar U	1.2		0.0	0.0	0.1	1.1		0.0	0.0						
Oldenburg U	1.1		0.3			0.3			0.0		0.3	0.0	0.1	0.1	
Magdeburg U	1.1					0.4				0.0	0.6	0.0	0.1		
Karlsruhe HfG	0.9			0.9											
Hamburg UdBW	0.8		0.2								0.3	0.1	0.2	0.0	
Passau U	0.8				0.2	0.1	0.1					0.3	0.1	0.0	
Hohenheim U	0.7							0.1				0.3	0.3		
Koblenz-Landau U	0.7				0.1			0.0		0.2	0.3	0.1			
Cottbus TU	0.6	0.5	0.1	0.0											
Hildesheim U	0.6				0.1	0.0				0.5		0.0			
Lüneburg U	0.6									0.2		0.3	0.0		
Ulm U	0.6				0.1						0.2	0.1	0.1		
Frankfurt/Main PhilThH	0.5		0.2					0.3							
Freiburg PH	0.5									0.3	0.2				
Total reporting sample[1]	**761.5**	**51.8**	**84.3**	**33.2**	**65.9**	**44.4**	**37.1**	**22.5**	**16.2**	**25.4**	**80.4**	**65.2**	**51.8**	**19.2**	**164.0**
Other HEIs	**7.9**	**0.7**	**0.7**	**1.7**	**0.0**	**0.3**	**0.1**	**0.8**	**0.0**	**0.3**	**0.7**	**1.6**	**0.2**	**0.0**	**0.7**
HEIs overall	**769.4**	**52.5**	**85.0**	**34.9**	**65.9**	**44.7**	**37.2**	**23.3**	**16.3**	**25.7**	**81.1**	**66.8**	**52.0**	**19.2**	**164.7**
Based on: No. of HEIs	**124**	**51**	**62**	**58**	**51**	**54**	**35**	**43**	**40**	**54**	**63**	**71**	**59**	**37**	**30**

Notes:
ACU: Ancient cultures
HIS: History
FMT: Fine arts, music, theatre and media studies
LIN: Linguistics
LIT: Literary studies
CUL: Non-European languages and cultures, social and cultural anthropology, Jewish studies and religious studies
THE: Theology
PHI: Philosophy
EDU: Education sciences
PSY: Psychology
SOC: Social sciences
ECO: Economics
JUR: Jurisprudence
RGC: DFG Research Centres, Graduate Schools and Clusters of Excellence

[1] Only those HEIs which received more than € 0.5 million in DFG awards from 2005 to 2007 in the scientific discipline considered here.

[2] In the DFG statistics, awards in the first two funding lines of the Excellence Initiative (Graduate Schools and Clusters of Excellence) as well as for DFG Research Centres are only classified on the level of subject areas and are thus reported separately here.

Data basis and source:
Deutsche Forschungsgemeinschaft (DFG): DFG awards 2005 to 2007.
Calculations by the DFG.

Table A-8:
DFG awards 2005 to 2007 in the life sciences by HEI per research field (in millions of euros)

Higher education institution	Total	FBM	PSC	ZOO	MVI	MED	NEU	VAF	RGC[2)]
Munich LMU	112.8	33.8	9.6	2.3	10.7	25.1	11.1	5.1	15.2
Heidelberg U	89.5	22.9	2.1	3.5	10.2	28.9	12.9		9.0
Freiburg U	81.3	14.3	7.6	3.4	8.1	20.8	7.9	0.8	18.3
Würzburg U	76.8	12.9	5.2	4.6	11.1	20.9	10.9	0.3	10.7
Berlin HU	71.9	10.9	3.9	0.8	8.7	24.4	8.1	1.8	13.3
Göttingen U	70.3	14.9	10.7	2.5	3.3	12.6	4.5	8.5	13.3
Cologne U	69.6	13.3	6.0	3.8	4.1	14.2	5.7	0.9	21.4
Berlin FU	66.0	11.3	2.7	2.3	5.2	23.4	9.3	1.8	9.9
Hannover MedH	64.3	6.6			9.5	28.0	1.2	1.2	17.9
Tübingen U	63.1	5.4	10.8	1.6	6.5	13.5	13.7	1.0	10.7
Frankfurt/Main U	60.2	14.8	1.5	0.8	2.3	16.5	4.2		20.0
Munich TU	55.8	8.8	3.2	0.2	6.1	18.6	3.9	8.7	6.4
Erlangen-Nuremberg U	54.6	5.9	3.8	1.0	11.9	21.4	9.1	0.6	1.0
Giessen U	50.3	8.7	1.5	1.1	4.2	12.5	0.4	12.2	9.8
Kiel U	45.0	3.3	1.0	1.3	3.9	10.7	1.0	4.7	19.1
Bonn U	43.3	8.1	2.5	0.8	5.9	13.2	8.8	3.9	
Mainz U	41.6	3.3	1.5	1.6	6.9	24.6	3.4	0.1	0.3
Ulm U	41.0	5.9	1.6	1.4	2.8	24.0	2.0	0.2	3.1
Münster U	41.0	12.3	3.5	0.3	4.4	17.0	3.4	0.0	
Düsseldorf U	40.1	8.2	3.3	0.8	6.1	18.4	3.3	0.0	
Marburg U	35.7	10.6	4.0	3.2	8.4	7.9	1.5	0.1	
Dresden TU	31.9	5.1	0.8	0.1	1.2	9.7	0.2	1.2	13.5
Hamburg U	29.9	4.0	1.2	1.4	1.2	11.6	7.6	1.2	1.7
Regensburg U	29.7	6.0	0.5	1.2	3.8	15.3	2.9		
Aachen TH	26.4	4.2	0.6	0.4	0.8	15.0	3.1	0.6	1.8
Halle-Wittenberg U	22.7	8.7	5.8	0.4	1.1	4.2	0.3	2.4	
Bochum U	21.7	6.8	3.4	0.2	1.6	2.9	5.5	0.6	0.8
Leipzig U	21.3	7.7	0.6	0.6	0.5	6.3	4.3	1.0	0.3
Jena U	21.0	3.0	5.5	1.2	0.8	6.9	1.4	0.8	1.4
Saarbrücken U	20.1	6.6	0.8	0.0	1.6	10.1	0.9		
Constance U	18.9	3.9	1.9	5.0	3.6	1.6	0.5	0.4	1.9
Bielefeld U	16.8	5.8	3.1	1.3	0.1	0.0	1.9	0.2	4.4
Duisburg-Essen U	15.9	4.7		0.4	1.2	8.4	1.2	0.1	
Lübeck U	15.8	0.6		0.0	1.2	8.1	3.4	0.1	2.3
Hohenheim U	15.5	0.9	1.1	0.4	0.7	0.3	0.9	11.2	
Potsdam U	13.1	2.0	7.3	1.5		0.6		0.8	0.9
Bayreuth U	12.9	3.8	2.4	0.3	0.8	0.5		5.2	
Magdeburg U	11.3	1.1		0.0	3.0	2.0	4.8	0.1	0.1
Hannover TiHo	10.3	0.4		0.8	0.8	0.4	0.5	7.1	0.3
Osnabrück U	9.3	4.2	0.8	1.3	2.5		0.3	0.2	
Brunswick TU	9.0	2.4	1.8	0.4	2.1	1.2	0.2	0.9	0.1
Oldenburg U	7.9	1.2	0.3	0.6	0.2	0.1	5.6	0.1	
Greifswald U	7.6	2.1	0.0	0.2	1.9	2.7	0.4	0.3	
Karlsruhe TH	6.9	0.5	1.3		0.2	2.3	0.2		2.5
Kaiserslautern TU	6.2	1.9	1.3	1.1	0.5	0.2	1.3		
Darmstadt TU	6.1	1.7	2.4	0.8	1.0	0.1		0.2	
Stuttgart U	6.0	4.4	0.6	0.3	0.4	0.0	0.3	0.1	

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Higher education institution	Total	FBM	PSC	ZOO	MVI	MED	NEU	VAF	RGC[2)]
Rostock U	5.5	0.3	0.8	0.3	0.6	2.2	0.4	0.8	
Berlin TU	5.2	1.9	0.5	0.1	0.2	0.3	0.1	2.0	
Hannover U	4.6	0.1	1.0		0.1	0.8	0.1	2.6	
Bremen U	3.8	0.2	0.5	0.5	0.3	0.6	1.2	0.3	0.3
Witten-Herdecke U	3.1	1.5			0.1	1.4			
Dortmund TU	2.6	0.7				1.1		0.8	
Kassel U	1.9	0.6	0.1	0.0			0.2	1.0	
Bremen JU	1.8	1.5			0.1	0.2		0.0	
Cottbus TU	0.9							0.9	
Mannheim U	0.7	0.0				0.2	0.5		
Koblenz-Landau U	0.6							0.6	
Total reporting sample[1)]	**1,719.3**	**336.8**	**132.5**	**58.3**	**174.5**	**513.6**	**176.1**	**95.8**	**231.8**
Other HEIs	**3.4**	**0.3**	**0.3**	**0.0**	**0.2**	**1.0**	**0.9**	**0.6**	**0.0**
HEIs overall	**1,722.7**	**337.1**	**132.8**	**58.3**	**174.6**	**514.6**	**177.1**	**96.4**	**231.8**
Based on: No. of HEIs	**78**	**61**	**50**	**49**	**55**	**61**	**53**	**56**	**32**

Notes:
FBM: Foundations of biology and medicine
PSC: Plant science
ZOO: Zoology
MVI: Microbiology, virology and immunology
MED: Medicine
NEU: Neurosciences
VAF: Veterinary medicine, horticulture, agriculture, and forestry
RGC: DFG Research Centres, Graduate Schools and Clusters of Excellence

[1)] Only those HEIs which received more than € 0.5 million in DFG awards from 2005 to 2007 in the scientific discipline considered here.

[2)] In the DFG statistics, awards in the first two funding lines of the Excellence Initiative (Graduate Schools and Clusters of Excellence) and for DFG Research Centres are only classified on the level of subject areas and are thus reported separately here.

Data basis and source:
Deutsche Forschungsgemeinschaft (DFG): DFG awards 2005 to 2007.
Calculations by the DFG.

Table A-9:
DFG awards 2005 to 2007 in the natural sciences by HEI per research field (in millions of euros)

Higher education institution	Total	MOL	CSR	PTC	AMC	BFC	POL	CMP	OPT	PNF	SND	AST	MAT	ASO	GAP	GPG	GMC	GEO	WAT	RGC[2)]
Munich LMU	58.3	3.1	2.5	0.5		2.0	0.0	7.2	4.9	1.7	0.4	2.5	2.3	1.3	0.7	2.2	0.9	0.9	0.6	24.6
Bonn U	57.9	2.7	1.4	1.9	0.1	0.8		1.4	2.8	4.2	0.5	5.5	10.1	2.6	4.6	1.6	2.5	1.2	0.6	13.7
Hamburg U	49.6	1.6	0.7	2.0	0.4	0.6	0.0	12.4	2.3	4.3		1.6	0.5	7.6	1.1	1.1	1.4	0.3	0.5	11.1
Munich TU	48.7	3.5	2.3	3.0	1.0	0.8	0.7	6.9	0.5	4.3	0.2		1.9	0.2		1.1	0.2	0.0	0.5	21.5
Mainz U	44.5	2.4	1.1	2.9	1.7	0.3	3.6	7.8	7.1	5.7	0.5		0.9	4.1	1.8	0.1	1.1	0.9	0.3	2.4
Heidelberg U	39.0	5.1	0.3	3.8	0.3	1.1		1.7	1.5	1.5	0.2	4.5	3.2	2.6	0.4		1.7	0.6	1.1	9.3
Berlin FU	37.1	2.7	0.5	3.2	0.3	1.1	0.4	4.4	5.3	0.0	0.1	0.0	3.0	1.8	2.0	0.7	2.6	0.4	0.1	8.4
Karlsruhe TH	36.9	2.0	0.5	1.6		0.3	0.4	5.2		2.7			1.2	1.2	1.9	3.1	0.4	0.0	2.3	14.1
Bremen U	35.6	0.3	0.2	0.3		0.1	0.2	3.3	0.4	0.1	0.4		0.5	4.3	7.3	0.6	1.0	0.1	0.1	16.4
Münster U	34.8	7.0	4.8	1.6	1.1	0.7	0.0	3.3	0.0	0.3	0.3	0.6	7.8	0.7	1.7	0.8	3.2	0.1	0.4	0.4
Erlangen-Nuremberg U	33.2	5.6	1.6	2.0	0.1	0.3	1.9	3.1	2.0		0.1	0.4	1.8	0.2	1.2		0.0	0.1	0.2	12.7
Hannover U	32.9	1.2	1.9	0.2	0.2	0.6	0.0	2.8	7.2	0.2	0.0	0.0	0.5	0.4	0.5	2.5	1.2	0.5	0.8	12.2
Cologne U	31.3	2.0	0.6	1.6		0.0	0.2	7.0	3.1	0.3	1.3	2.6	2.1	1.6	1.4	0.2	0.9	2.8	0.9	2.6
Berlin TU	31.3	0.8	1.0	1.9	0.2	0.4	1.0	3.5	0.3		0.4	0.2	3.8		0.5	0.7	0.3	0.1	1.0	15.3
Berlin HU	31.0	2.4	0.4	1.8	0.5	1.1	0.9	4.3	0.9	2.4	1.0	0.0	4.4	0.1	1.9	0.4	0.0	2.3	0.5	5.7
Bochum U	30.7	2.2	2.8	1.5		0.3		6.9	3.6	0.9	0.2	2.2	1.7	0.3	1.9	1.9	2.8	0.1	0.2	1.2
Göttingen U	30.4	2.7	0.5	1.9	1.4	1.3	1.0	7.2	0.9	1.4		1.0	3.1	0.2	1.3	0.2	3.0	0.5	1.1	1.5
Frankfurt/Main U	28.8	1.1		1.8	6.0	0.0	0.2	3.0	0.7	0.4			1.0	2.3	1.8	0.7	2.4	1.2	0.2	6.0
Aachen TH	28.0	3.4	1.4	2.4	0.3	0.0	2.2	3.6	0.4	1.1			3.3	0.0	1.1	0.3	1.0	0.4	0.5	6.4
Stuttgart U	27.2	1.7	1.1	2.9	0.3	0.3	1.1	6.3	2.7	0.2	1.0	0.1	1.5	0.0		0.8	0.1	0.1	2.4	4.3
Darmstadt TU	23.2	0.6	1.2	0.6	0.5	0.3	0.5	1.0	0.2	4.8	0.8		2.3	0.6	0.5	0.3	0.5		0.0	8.4
Würzburg U	22.6	3.2	0.1	2.5	1.0	0.1	0.0	5.3	0.6	0.5	0.2	1.0	0.3	0.2	0.2		0.6	0.4		6.4
Jena U	20.1	2.3	0.3	1.5	0.2	0.5	0.3	0.7	3.6	0.6	0.0	2.0	1.0	0.6	0.5	0.6	3.4	1.0	0.2	0.8
Kiel U	20.1	0.7	1.3	0.7		0.2	0.3	1.6	0.9		0.2	0.3	0.2	1.4	2.5	2.8	1.4	0.5		5.2
Bayreuth U	18.9	1.3	0.7	1.3	0.1	0.3	5.7	1.9	0.2		1.0		1.3	1.0	0.1	0.0	1.2	1.5	1.0	0.5
Dresden TU	18.8	1.4	0.8	1.1	0.2	0.4	2.1	5.2	0.4		0.7	0.1	1.0	0.4		0.9	0.4	0.1	2.5	1.2
Regensburg U	18.5	2.5	0.5	3.0	0.2	0.2		8.2	0.6	1.0	0.2		1.5				0.1	0.3		
Freiburg U	18.3	1.2	0.5	0.6	0.1	0.7	4.5	0.9	2.7	1.1	0.2		2.8		0.4		0.4	1.2		1.0
Tübingen U	17.5	0.4	0.2	1.7	0.8	0.0		2.3	1.0	0.9	0.1	2.4	1.8	0.3	1.4	0.4	1.0		1.9	0.8
Bielefeld U	17.3	1.2	0.4	1.2	0.3	1.4	0.1	3.5		1.2			5.8					0.2		2.0
Duisburg-Essen U	17.0	0.8	0.3	1.4	0.1	0.3	0.1	7.6	1.5		1.7		1.7	0.3			0.0	0.2	1.1	
Constance U	15.9	0.2	0.9	0.2	0.1	0.2	0.4	10.7	0.1				0.5						1.6	1.2
Leipzig U	15.5	0.5	1.2	2.7	0.7	0.4	0.4	3.1		0.6		0.1	1.4	1.0	0.3	0.1	0.2	0.1	0.3	2.3
Düsseldorf U	15.4	1.4		2.3		0.1	1.4	3.3	5.8		0.3	0.0	0.6	0.1						
Dortmund TU	13.3	2.0	0.2	0.6	0.2	0.4	0.5	5.2		0.2			3.8					0.2		
Kaiserslautern TU	12.4	1.3	0.2	1.3	0.5	0.3		3.7	2.3				1.9	0.1		0.2	0.1			0.6
Ulm U	11.4	1.2	1.1	4.2		0.1	1.8	1.6	0.3	0.1			0.8							0.1
Augsburg U	10.7	0.4	0.3	0.0	0.3	0.0		6.5	0.2	0.0	0.4		0.8					0.4	0.0	1.3
Potsdam U	10.6	0.4	0.5	0.6	0.1		0.5	0.4	0.3	0.1	0.6	0.7	1.3	0.2	2.0	0.9	0.7	0.3	0.9	
Marburg U	10.4	2.0	0.6	0.2		1.0	0.4	3.7			0.7		0.3		0.0		0.0	1.4		
Halle-Wittenberg U	10.1	0.1	0.1	1.8	0.5	0.6	0.9	4.3					0.2	0.1	0.3		0.4	0.9		
Rostock U	8.4	0.2	0.2	0.3	0.7	1.2	0.3	3.3	1.4	0.2	0.2			0.3				0.0		
Brunswick TU	7.3	0.6	0.7	0.4	0.7	0.5	0.4	1.4	0.6			0.6	0.0	0.1	0.3	0.3	0.2		0.6	
Paderborn U	6.2	0.2		0.3		0.3	0.1	2.0	0.1				3.2							
Saarbrücken U	6.0	0.5	0.2	1.1	0.0	0.3		1.9	0.3		0.6		0.4		0.1					0.6
Giessen U	5.8	0.8	1.0	0.1	0.2			1.1	0.3	2.1			0.2		0.0			0.2		
Oldenburg U	5.7	0.7	0.7	0.2	0.0			0.1	0.1	0.2			0.1	2.6	0.2	0.1	0.3		0.3	
Greifswald U	5.4	0.0	0.1	0.3				1.3	1.9				0.3		0.2			1.4		
Wuppertal U	4.4	0.5		0.7	0.1	0.1		0.0	0.1	1.1			1.3	0.5						
Chemnitz TU	4.4	0.7	0.4	0.5			0.5	0.4			0.6		1.3							
Clausthal TU	4.1	0.6	0.8	0.5			0.9		0.6				0.3		0.0	0.1	0.2			
Osnabrück U	3.8							3.2			0.1		0.1	0.2	0.0	0.2				
Siegen U	3.7	1.1	1.0	0.1	0.5	0.0		0.3		0.4			0.2							
Hohenheim U	3.6	0.0	0.0	0.0		0.5								2.3	0.3			0.1		0.4
Freiberg TU	2.6	0.0	0.3	0.1	0.1		0.3	0.0					0.0	0.0	0.8	0.2	0.5	0.0	0.1	
Magdeburg U	2.4	0.1	0.1	0.2	0.0		0.0	0.2			0.2		1.0							0.5
Bremen JU	2.1	0.1	0.2	0.4				0.1		0.1	0.0	0.5	0.3				0.4			

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Higher education institution	Total	MOL	CSR	PTC	AMC	BFC	POL	CMP	OPT	PNF	SND	AST	MAT	ASO	GAP	GPG	GMC	GEO	WAT	RGC[2]
Kassel U	1.5	0.1		0.2			0.2	0.1	0.5				0.2			0.1		0.2	0.0	
Munich UdBW	1.5						0.2						0.1			0.4		0.0	0.2	0.5
Ilmenau TU	1.0							0.6					0.3	0.1						
Cottbus TU	0.9										0.1			0.3					0.6	
Trier U	0.8												0.1	0.3	0.3			0.0	0.1	
Lübeck U	0.8	0.2		0.1									0.1				0.0			0.4
Mannheim U	0.6												0.6							
Total reporting sample[1]	**1,167.9**	**85.1**	**42.7**	**73.9**	**22.4**	**22.5**	**36.1**	**198.1**	**73.0**	**47.1**	**15.8**	**28.9**	**95.7**	**44.5**	**43.7**	**26.7**	**38.9**	**23.1**	**25.6**	**224.0**
Other HEIs	**2.6**	**0.4**	**0.0**	**0.0**	**0.0**	**0.1**	**0.3**	**0.4**	**0.1**	**0.0**	**0.0**	**0.0**	**0.4**	**0.0**	**0.2**	**0.0**	**0.0**	**0.7**	**0.0**	**0.1**
HEIs overall	**1,170.6**	**85.5**	**42.7**	**73.9**	**22.4**	**22.6**	**36.4**	**198.5**	**73.1**	**47.1**	**15.8**	**28.9**	**96.1**	**44.5**	**43.9**	**26.7**	**38.9**	**23.8**	**25.6**	**224.0**
Based on: No. of HEIs	**86**	**62**	**52**	**58**	**41**	**49**	**45**	**61**	**47**	**36**	**36**	**24**	**68**	**42**	**40**	**35**	**41**	**48**	**38**	**40**

Notes:

MOL: Molecular chemistry
CSR: Chemical solid state research
PTC: Physical and theoretical chemistry
AMC: Analytical chemistry and method development
BFC: Biological and food chemistry
POL: Polymer research
CMP: Condensed matter physics
OPT: Optics, quantum optics and physics of atoms, molecules and plasmas
PNF: Particles, nuclei and fields
SND: Statistical physics and nonlinear dynamics
AST: Astrophysics and astronomy
MAT: Mathematics
ASO: Atmospheric science and oceanography
GAP: Geology and palaeontology
GPG: Geophysics and geodesy
GMC: Geochemistry, mineralogy and crystallography
GEO: Geography
WAT: Water research
RGC: DFG Research Centres, Graduate Schools and Clusters of Excellence

[1] Only those HEIs which received more than € 0.5 million in DFG awards from 2005 to 2007 in the scientific discipline considered here.

[2] In the DFG statistics, awards in the first two funding lines of the Excellence Initiative (Graduate Schools and Clusters of Excellence) and for DFG Research Centres are only classified on the level of subject areas and are thus reported separately here.

Data basis and source:
Deutsche Forschungsgemeinschaft (DFG): DFG awards 2005 to 2007.
Calculations by the DFG.

Table A-10:
DFG awards 2005 to 2007 in the engineering sciences by HEI per research field (in millions of euros)

Higher education institution	Total	PRO	MCM	PET	HTD	MEN	MRM	SYS	ELE	CSC	CEA	RGC[2)]
Aachen TH	155.7	19.9	7.2	9.3	17.7	17.9	8.6	5.5	4.0	8.3	7.9	49.4
Darmstadt TU	70.7	9.5	6.0	2.1	11.2	7.5	4.8	2.0	5.6	6.5	1.1	14.5
Karlsruhe TH	67.6	5.0	2.7	9.5	6.7	7.2	6.1	10.7	1.4	9.3	4.6	4.5
Stuttgart U	67.0	11.4	8.4	2.3	6.4	1.7	2.3	3.9	1.7	8.2	2.9	18.0
Munich TU	62.6	5.6	3.0	1.6	4.9	1.7	0.5	8.8	4.0	6.8	6.2	19.5
Erlangen-Nuremberg U	59.8	12.6	1.9	7.8	4.9	3.0	4.4	2.2	3.5	5.1	0.3	14.1
Hannover U	50.6	26.6	3.3	0.7	1.0	6.0	1.6	2.6	3.2	1.3	1.1	3.1
Dresden TU	46.9	2.1	12.6	0.6	5.7	1.8	5.9	2.6	2.4	4.5	7.4	1.4
Dortmund TU	40.6	17.9	1.8	3.3	1.4	4.3	0.0	0.7	1.1	9.3	0.8	
Brunswick TU	37.2	3.0	4.3	6.1	2.1	1.6	0.7	5.7	1.3	3.4	9.0	
Berlin TU	35.3	8.4	2.2	1.3	8.6	1.1	0.2	2.4	3.1	4.7	0.6	2.7
Bremen U	34.7	6.0	0.4	1.8		9.1	1.6	6.5	2.0	5.1	0.0	2.3
Bochum U	29.4	1.6	3.8	2.5	0.3	5.8	4.0	1.8	1.1	0.8	6.9	1.0
Saarbrücken U	23.7	0.6	0.5	0.1	0.3	1.5	1.3	1.0	0.2	7.0	0.3	10.9
Chemnitz TU	19.4	6.2	0.9		0.1	5.5	0.5	2.7	2.5	1.0		
Paderborn U	15.6	1.7	0.4	0.5	0.2	0.8	0.7	1.9	1.6	7.8		
Hamburg-Harburg TU	14.5		1.6	2.0	1.4	0.8	0.3	1.4	3.2	0.2	3.6	
Kaiserslautern TU	13.2	1.5	1.2	1.2	0.7	0.8	1.5	1.2	0.4	4.4	0.4	
Duisburg-Essen U	12.7	0.6	1.0	4.4	1.1	0.2	0.6	0.6	1.5	1.8	1.1	
Ilmenau TU	12.7	0.6	0.3		2.7	0.9	0.4	4.9	1.7	1.3		
Freiburg U	12.3	0.0	0.0	0.3	0.7	0.1	0.1	4.9	0.4	4.0		1.6
Magdeburg U	11.2	1.6	1.0	2.3	1.1	0.8	0.3	1.2	1.3	1.8		
Bielefeld U	10.8			0.5	0.0			0.3	0.2	2.6		7.3
Clausthal TU	10.3	1.2	0.5	1.1		3.3	3.6	0.0	0.1	0.4		
Freiberg TU	8.5	1.2	0.3	0.4	1.6	2.9	1.7			0.3	0.1	
Siegen U	8.4	0.4	0.6		0.2	1.3	0.8	2.2	1.1	1.4	0.4	
Kassel U	8.4	1.9	1.1		0.1	1.8	0.2	0.3	0.5	0.6	2.0	
Kiel U	7.1			0.2	0.1	1.2	1.0	0.1	1.3	1.5		1.7
Rostock U	6.8	0.0	0.1	0.8	1.4	0.1	0.3	0.6	0.8	2.6		
Tübingen U	6.8		0.1		0.6	0.4	0.1	0.8	0.1	2.9		1.6
Ulm U	6.5		0.0	0.0	0.3	0.1	1.7	0.3	2.1	1.9		0.1
Heidelberg U	6.2		0.1	0.3	1.0		0.1	0.4		0.7		3.7
Weimar U	6.1		0.3				0.2			0.2	5.4	
Jena U	5.6		0.1	0.3	0.3	0.5	0.4	1.0	0.1	2.7		0.1
Oldenburg U	5.1			0.3				0.5	0.1	4.2	0.1	
Bonn U	5.0			0.1	0.2	0.4	0.4	0.3	0.1	3.1	0.1	0.4
Bayreuth U	4.9		0.3	0.9	0.1	1.1	0.9	1.7				
Munich UdBW	4.6	0.2			0.8			0.6	0.9	0.7	0.5	1.0
Leipzig U	4.5	0.3		0.6				0.2		3.0	0.4	
Berlin HU	4.5	0.1	0.0	0.3	0.5	0.0	0.1	0.3	0.1	2.6	0.0	0.5
Cottbus TU	4.3	0.1	0.0	0.2	0.5	2.1			0.2	0.4	0.8	
Constance U	3.9						0.1			3.5		0.3
Lübeck U	3.8							0.3	0.4	2.8		0.3
Würzburg U	3.5						0.2	0.6	0.7	1.8		0.1
Augsburg U	3.1					0.5		0.2	0.2	2.2		
Munich LMU	2.9								0.1	2.8		
Mannheim U	2.5				0.1			0.2	0.1	2.1		
Münster U	2.4				0.3	0.1	1.0			1.1		
Göttingen U	2.4	0.1	0.0		0.2	0.7	1.2	0.2				
Hamburg U	2.3			0.2	0.3			0.9	0.1	0.8	0.1	
Cologne U	2.3			0.3	0.1		0.0	0.2	0.8	0.9		
Wuppertal U	2.3	0.0	0.1	0.3	0.2	0.3		0.7	0.1	0.1	0.4	
Berlin FU	2.1		0.0	0.0	0.9	0.0	0.1	0.4		0.7		
Halle-Wittenberg U	1.8			1.2	0.1	0.1		0.2		0.1	0.0	
Koblenz-Landau U	1.8							0.2		1.6		
Frankfurt/Main U	1.6						0.1		0.5	1.0		
Düsseldorf U	1.4			0.1			0.4	0.2		0.8		

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Higher education institution	Total	PRO	MCM	PET	HTD	MEN	MRM	SYS	ELE	CSC	CEA	RGC[2)]
Bremen JU	1.3							0.4	0.4	0.5		
Hamburg UdBW	1.3	0.1	0.2	0.2	0.6			0.1	0.0			
Osnabrück U	1.2							0.4		0.8		
Mainz U	1.2				0.3		0.9					
Passau U	1.1								0.2	0.9		
Hagen FernU	1.1							0.2	0.1	0.8		
Hohenheim U	1.0		0.5	0.1						0.4		
Marburg U	0.9			0.2						0.7		
Hannover MedH	0.8	0.1			0.2	0.1	0.2	0.2				
Karlsruhe HTW	0.6						0.4				0.1	
Bamberg U	0.5		0.2							0.4		
Total reporting sample[1)]	**1,069.1**	**148.2**	**69.0**	**67.7**	**90.2**	**96.9**	**62.1**	**90.6**	**58.5**	**161.3**	**64.5**	**160.1**
Other HEIs	**5.6**	**0.4**	**0.4**	**0.1**	**0.7**	**1.1**	**0.5**	**0.3**	**0.5**	**0.8**	**0.8**	**0.0**
HEIs overall	**1,074.7**	**148.6**	**69.3**	**67.9**	**90.8**	**98.0**	**62.6**	**90.9**	**59.0**	**162.1**	**65.3**	**160.1**
Based on: No. of HEIs	**97**	**38**	**44**	**44**	**51**	**47**	**50**	**59**	**53**	**68**	**39**	**25**

Notes:
PRO: Production technology
MCM: Mechanics and constructive mechanical engineering
PET: Process engineering and technical chemistry
HTD: Heat energy technology, thermal machines and drives
MEN: Materials engineering
MRM: Materials science and raw materials
SYS: System engineering
ELE: Electrical engineering
CSC: Computer science
CEA: Construction engineering and architecture
RGC: DFG Reserach Centres, Graduate Schools and Clusters of Excellence

[1)] Only those HEIs which received more than € 0.5 million in DFG awards from 2005 to 2007 in the scientific discipline considered here.

[2)] In the DFG statistics, awards in the first two funding lines of the Excellence Initiative (Graduate Schools and Clusters of Excellence) and for DFG Research Centres are only classified on the level of subject areas and are thus reported separately here.

Data basis and source:
Deutsche Forschungsgemeinschaft (DFG): DFG awards 2005 to 2007.
Calculations by the DFG.

Table A-11:
DFG awards 2005 to 2007 by HEI per funding programme (in millions of euros)

Higher education institution	Total	Individual Grants Programme	Research Training Groups	Research Units	Collaborative Research Centres	Priority Programmes	DFG Research Centres	Graduate Schools	Clusters of Excellence	Institutional Strategies
Aachen TH	257.0	67.1	8.9	6.0	56.0	17.9		3.2	56.5	41.5
Munich LMU	249.0	74.3	10.2	9.9	60.9	11.3		1.3	41.2	39.8
Heidelberg U	215.4	57.8	13.3	5.4	44.7	9.1		8.0	35.8	41.3
Munich TU	200.4	63.5	1.3	7.9	35.2	13.4		5.2	42.3	31.4
Berlin FU	194.4	48.8	6.5	11.7	47.6	10.0	1.9	11.1	35.1	21.7
Freiburg U	165.5	53.1	10.4	5.8	29.0	5.3	0.7	3.1	17.2	41.0
Karlsruhe TH	159.4	33.5	7.6	4.8	34.3	13.1	13.9	3.4	3.7	45.1
Erlangen-Nuremberg U	157.6	56.9	8.5	11.1	40.9	12.5		4.1	23.7	
Göttingen U	153.5	49.6	14.0	12.3	19.8	6.4	10.1	1.6	3.0	36.7
Berlin HU	153.4	47.5	14.5	7.0	47.1	6.6	3.3	6.2	21.1	
Cologne U	126.4	47.7	2.6	2.2	43.7	6.1	0.9	1.7	21.4	
Frankfurt/Main U	124.8	41.0	8.4	7.0	24.0	5.4			38.9	
Bonn U	122.6	47.0	5.3	9.0	30.7	10.0		4.3	16.3	
Tübingen U	120.4	48.7	9.6	8.8	31.3	7.2			14.8	
Münster U	119.9	47.9	5.5	1.3	35.9	7.0	0.4		21.8	
Constance U	119.7	20.8	5.0	5.3	24.6	2.4		3.4	17.3	40.9
Würzburg U	110.4	34.5	9.1	6.9	35.8	6.7	14.1	3.4		
Dresden TU	107.3	39.6	3.2	4.6	33.1	10.7	11.0	1.8	3.3	
Stuttgart U	106.7	32.6	5.1	6.2	31.7	7.8		3.7	19.7	
Darmstadt TU	106.1	35.3	9.6	5.0	22.7	9.1	0.9	3.2	20.4	
Hamburg U	98.7	36.5	9.1	6.3	25.1	7.2			14.6	
Mainz U	97.5	37.0	5.9	9.9	36.7	5.4		2.7		
Bochum U	93.0	31.7	4.1	5.4	42.2	5.7		3.9		
Hannover U	90.2	30.8	4.0	4.3	25.2	10.5			15.4	
Bremen U	86.7	18.3	2.8	2.9	29.5	12.1	11.9	4.0	5.2	
Kiel U	81.6	29.8	2.9	1.6	13.3	5.7		4.8	23.5	
Berlin TU	77.0	24.1	4.7	4.2	17.1	7.9	7.6	0.9	10.3	
Bielefeld U	74.9	23.3	7.1	1.6	17.4	2.1		3.5	19.9	
Giessen U	72.8	19.5	7.6	7.2	22.7	2.8		3.2	9.8	
Jena U	66.8	32.6	4.2	5.6	16.6	5.5		2.4		
Hannover MedH	65.9	17.9	3.0	7.4	17.9	1.8		2.2	15.8	
Düsseldorf U	63.6	18.6	4.4	6.8	27.8	6.0				
Saarbrücken U	61.9	21.5	5.2	2.9	13.0	4.1	0.4	2.8	12.0	
Ulm U	59.5	25.3	1.8	3.9	20.1	5.1		3.4		
Marburg U	59.3	24.8	5.7	10.6	14.6	3.7				
Dortmund TU	58.8	25.5	2.4	2.7	22.2	6.0				
Brunswick TU	54.8	23.1	2.4	5.0	16.9	7.2		0.2		
Regensburg U	52.5	27.4	4.5	6.8	10.1	3.8				
Duisburg-Essen U	52.3	21.1	5.6	7.4	12.6	5.5				
Leipzig U	52.2	27.0	7.0	6.6	4.0	5.0		2.6		
Halle-Wittenberg U	46.9	22.0	3.2	5.0	14.1	2.6				
Bayreuth U	44.3	21.0	1.7	6.0	7.7	4.5		3.4		
Potsdam U	36.0	21.2	2.1	2.2	6.0	3.7		0.1	0.9	
Kaiserslautern TU	31.8	17.1	6.7	1.2	0.7	5.6		0.6		
Magdeburg U	25.9	12.5	2.3	5.1	3.0	2.5	0.5	0.1		
Chemnitz TU	25.9	11.7	1.7	0.4	9.8	2.2				
Paderborn U	24.2	10.7	1.8	0.6	7.9	3.1				
Rostock U	22.6	12.1	3.9	0.5	3.5	2.6				
Hohenheim U	20.8	7.5	1.8	0.3	6.4	4.4	0.4			
Lübeck U	20.6	6.6	0.4	2.5	5.6	2.6		1.3	1.6	
Mannheim U	20.0	7.5	1.1	0.6	6.2	1.2		3.3		
Oldenburg U	19.8	7.3	2.2	3.3	5.2	1.9				
Augsburg U	18.0	6.4	1.1	0.4	5.5	3.2			1.3	
Osnabrück U	17.9	8.8	3.0	0.3	4.5	1.2				
Siegen U	17.7	8.8		1.8	5.6	1.5				

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Higher education institution	Total	Individual Grants Programme	Research Training Groups	Research Units	Collaborative Research Centres	Priority Programmes	DFG Research Centres	Graduate Schools	Clusters of Excellence	Institutional Strategies
Hamburg-Harburg TU	16.2	8.9	2.9	1.9		2.4				
Greifswald U	16.0	7.1	2.6	0.2	5.4	0.7				
Kassel U	14.8	8.5	0.4	0.3	2.4	3.2				
Clausthal TU	14.4	9.8	0.7	0.1	2.0	1.8				
Ilmenau TU	14.2	5.5		0.6	4.9	3.2				
Trier U	12.2	3.9	2.3	0.2	5.1	0.6				
Freiberg TU	11.7	8.2		0.6	0.4	2.6				
Bamberg U	10.8	2.4	2.8	5.2		0.4				
Hannover TiHo	10.4	5.6	1.1	0.4	2.6	0.4		0.3		
Wuppertal U	9.3	6.8	1.2	0.2	0.4	0.7				
Bremen JU	8.1	4.5		0.6	0.4	1.5		1.0		
Weimar U	7.3	4.3	1.1	0.1	1.2	0.7				
Cottbus TU	6.7	3.2			0.6	2.9				
Munich UdBW	6.5	3.7		0.2	1.0	0.1			1.5	
Witten-Herdecke U	3.3	3.1				0.2				
Koblenz-Landau U	3.2	2.8				0.4				
Frankfurt/Oder U	3.0	0.9	0.9			0.1		0.2	0.8	
Hagen FernU	2.7	2.3		0.3						
Hamburg UdBW	2.1	1.6			0.1	0.4				
Erfurt U	2.1	1.7	0.2			0.2				
Passau U	2.1	1.8				0.3				
Karlsruhe HfG	0.9		0.9							
Eichstätt-Ingolstadt KathU	0.8	0.8								
Hildesheim U	0.6	0.6								
Karlsruhe HTW	0.6	0.1				0.4				
Lüneburg U	0.6	0.5				0.0				
Frankfurt/Main PhilThH	0.5	0.3				0.2				
Freiburg PH	0.5	0.4				0.1				
Berlin TFH	0.5	0.2		0.3						
Total reporting sample[1)]	**5,064.4**	**1,743.8**	**303.2**	**288.4**	**1,252.3**	**357.5**	**78.3**	**115.7**	**585.9**	**339.4**
Other HEIs	**12.3**	**9.9**	**0.3**	**0.7**	**0.4**	**0.4**	**0.5**	**0.2**	**0.0**	**0.0**
HEIs overall	**5,076.7**	**1,753.7**	**303.5**	**289.0**	**1,252.7**	**357.9**	**78.8**	**115.9**	**585.9**	**339.4**
Based on: No. of HEIs	**159**	**150**	**68**	**75**	**70**	**84**	**16**	**40**	**33**	**9**

[1)] Only those HEIs which received more than € 0.5 million in DFG awards from 2005 to 2007.

Data basis and source:
Deutsche Forschungsgemeinschaft (DFG): DFG awards 2005 to 2007.
Calculations by the DFG.

Table A-12:
Participations in the DFG's Coordinated Programmes 2005 to 2007 by HEI per scientific discipline

Higher education institution	Total	Humanities and social sciences	Life sciences	Natural sciences	Engineering sciences
Munich LMU	55	9	30	15	1
Munich TU	52	3	24	13	12
Berlin FU	49	15	19	15	
Berlin HU	49	15	19	14	1
Heidelberg U	37	6	17	11	3
Berlin TU	35	3	10	17	5
Cologne U	33	3	17	13	
Bochum U	32	4	6	13	9
Tübingen U	32	9	13	10	
Bonn U	31	4	12	14	1
Aachen TH	30	1	6	6	17
Göttingen U	28		21	7	
Erlangen-Nuremberg U	26	1	11	4	10
Berlin Charité[1)]	25	2	22	1	
Darmstadt TU	25	1	6	8	10
Stuttgart U	25	1	3	11	10
Dresden TU	23	1	9	7	6
Hannover U	23		7	6	10
Karlsruhe TH	23	1	1	8	13
Mainz U	23	2	7	14	
Freiburg U	22		15	4	3
Giessen U	21	7	13	1	
Marburg U	21	2	16	3	
Frankfurt/Main U	20	5	10	5	
Würzburg U	20	1	16	3	
Düsseldorf U	18	1	10	7	
Bremen U	17	2	2	10	3
Duisburg-Essen U	17	2	3	9	3
Halle-Wittenberg U	17	7	7	3	
Hamburg U	17	4	6	7	
Jena U	17	4	8	5	
Potsdam U	17	4	7	6	
Dortmund TU	16	2	2	3	9
Hannover MedH	16		15	1	
Brunswick TU	15	1	5	4	5
Leipzig U	15	4	3	8	
Münster U	15	4	6	5	
Magdeburg U	14	1	5	4	4
Regensburg U	13	2	6	4	1
Kiel U	12	1	5	6	
Bayreuth U	11	3	4	3	1
Bielefeld U	11	2	4	3	2
Saarbrücken U	11	3	3	1	4
Constance U	10	4	3	3	
Schleswig-Holstein UK[1)]	9	2	6	1	
Mannheim U	8	5	2		1
Hannover TiHo	7		7		
Kaiserslautern TU	7		2	3	2
Ulm U	7		5	1	1
Augsburg U	6	1		5	
Greifswald U	6		4	2	
Hohenheim U	6		3	2	1
Lübeck U	6		6		
Munich UdBW	6	1		1	4
Chemnitz TU	5		1	1	3
Oldenburg U	5		3	1	1
Rostock U	5		2	3	

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Higher education institution	Total	Humanities and social sciences	Life sciences	Natural sciences	Engineering sciences
Bremen JU	4	3	1		
Kassel U	4		1		3
Osnabrück U	4		4		
Wuppertal U	4			2	2
Clausthal TU	3				3
Freiberg TU	3		1		2
Paderborn U	3			1	2
Frankfurt/Oder U	2	2			
Siegen U	2			1	1
Trier U	2	1	1		
Weimar U	2	1			1
Reporting sample[2)]	**1,155**	**163**	**483**	**339**	**170**
Other HEIs	**15**	**7**	**4**	**2**	**2**
HEIs overall	**1,170**	**170**	**487**	**341**	**172**
Based on: No. of HEIs	**83**	**55**	**64**	**59**	**40**

Notes:
The table is based on the following Coordinated Programmes of the DFG: Collaborative Research Centres, Research Units, DFG Research Centres, Graduate Schools and Clusters of Excellence. Further information on the data basis used and the methodical approach can be derived from section A.4 in the appendix.

[1)] The participation of university hospitals that are run jointly by different HEIs in the Coordinated Programmes of the DFG are reported separately here to avoid multiple counting. This applies to the University Medical Centre Schleswig-Holstein, which is linked to the universities of Lübeck and Kiel, as well as the Berlin Charité, which is run jointly by the Free University of Berlin and the Humboldt University of Berlin.

[2)] Only those HEIs which received more than € 0.5 million in DFG awards from 2005 to 2007 and which participated in two or more programmes along with other institutions during the specified period.

Data basis and source:
Deutsche Forschungsgemeinschaft (DFG): Participations in Coordinated Programmes from 2005 to 2007. Calculations by the DFG.

Table A-13:
Share of DFG awards allocated to women 2005 to 2007 by HEI per scientific discipline

Higher education institution	Total			Humanities and social sciences			Life sciences			Natural sciences			Engineering sciences		
	No.	of which women		No.	of which women		No.	of which women		No.	of which women		No.	of which women	
		No.	%		No.	%		No.	%		No.	%		No.	%
Aachen TH	480	40	8.3	23	3	12.8	142	22	15.4	133	7	5.1	181	8	4.6
Augsburg U	113	13	11.5	45	9	20.2	0	0	0.0	57	3	5.3	11	1	8.8
Bamberg U	63	16	25.4	57	15	26.5	1	0	0.0	1	0	0.0	4	1	23.1
Bayreuth U	214	26	12.1	40	8	20.3	69	7	10.2	87	7	7.9	18	4	21.7
Berlin FU	682	152	22.3	204	72	35.4	322	59	18.4	140	20	14.2	16	1	3.7
Berlin HU	632	130	20.6	190	46	24.0	294	63	21.6	120	16	13.5	28	5	16.6
Berlin TU	275	40	14.5	36	8	22.5	32	8	24.9	108	10	9.5	99	14	13.8
Bielefeld U	269	39	14.5	116	20	17.2	57	13	23.4	79	5	6.8	17	0	2.3
Bochum U	379	50	13.2	73	15	20.4	87	17	19.9	128	12	9.2	90	6	6.6
Bonn U	525	58	11.0	84	11	12.5	229	33	14.4	192	14	7.3	19	0	1.7
Bremen JU	49	9	18.4	16	6	37.5	9	1	11.1	16	2	12.6	8	0	0.0
Bremen U	274	52	19.0	55	12	22.6	23	8	33.8	126	23	18.3	71	9	12.7
Brunswick TU	201	30	14.9	10	5	50.0	42	12	28.4	41	4	9.8	109	9	8.5
Chemnitz TU	112	12	10.7	17	4	23.5	0	0	–	37	2	6.3	58	6	9.8
Clausthal TU	62	4	6.5	0	0	–	0	0	–	23	1	4.3	39	3	7.8
Cologne U	401	72	18.0	110	22	20.0	156	37	23.7	128	12	9.4	7	1	14.5
Constance U	234	44	18.8	105	31	29.6	60	10	16.7	54	2	3.7	15	1	6.6
Cottbus TU	39	2	5.1	3	1	33.3	6	0	0.0	6	0	0.0	24	1	4.2
Darmstadt TU	320	32	10.0	35	4	11.3	38	9	23.0	87	9	9.8	160	11	6.7
Dortmund TU	186	25	13.4	21	8	39.3	4	1	34.9	67	5	7.4	94	10	11.0
Dresden TU	399	47	11.8	46	12	26.3	93	16	17.0	88	7	7.5	173	13	7.3
Duisburg-Essen U	291	54	18.6	57	14	23.9	97	30	30.8	85	4	4.2	52	7	13.5
Düsseldorf U	276	51	18.5	54	17	31.7	164	27	16.5	47	5	11.3	12	2	14.4
Eichstätt-Ingolstadt KathU	10	2	20.0	4	2	50.0	0	0	–	5	0	0.0	1	0	0.0
Erfurt U	26	6	23.1	26	6	23.1	0	0	–	0	0	–	0	0	–
Erlangen-Nuremberg U	532	73	13.7	80	20	25.0	236	32	13.5	97	8	8.1	118	13	11.1
Frankfurt/Main U	434	93	21.4	168	50	29.7	155	38	24.2	102	5	4.4	9	1	10.8
Frankfurt/Oder U	26	7	26.9	26	7	26.9	0	0	–	0	0	–	0	0	–
Freiberg TU	67	7	10.4	3	0	0.0	2	0	0.0	28	4	14.2	34	3	8.8
Freiburg PH	7	1	14.3	7	1	14.3	0	0	–	0	0	–	0	0	–
Freiburg U	496	80	16.1	90	23	25.6	262	49	18.8	99	4	3.5	44	4	9.0
Giessen U	318	55	17.3	91	19	20.9	194	33	17.0	29	2	6.9	4	1	25.0
Göttingen U	585	91	15.6	109	24	22.1	310	46	14.9	151	21	13.6	15	0	1.7
Greifswald U	113	21	18.6	31	4	12.8	56	14	24.9	25	3	12.2	1	0	0.0
Hagen FernU	20	3	15.0	9	3	33.3	0	0	–	2	0	0.0	9	0	0.0
Halle-Wittenberg U	263	40	15.2	63	10	15.8	104	23	21.8	86	7	8.4	10	0	0.0
Hamburg U	473	91	19.2	119	41	34.3	174	32	18.2	169	18	10.7	11	0	3.7
Hamburg UdBW	18	0	0.0	7	0	0.0	0	0	–	1	0	0.0	10	0	0.0
Hamburg-Harburg TU	51	5	9.8	2	1	43.4	1	1	57.1	4	1	28.1	44	2	5.3
Hannover MedH	220	43	19.5	4	2	50.0	205	39	19.2	3	1	51.1	8	0	4.1
Hannover TiHo	60	20	33.3	0	0	–	58	19	33.4	0	0	–	2	1	30.8
Hannover U	233	32	13.7	15	3	20.0	37	11	30.0	89	10	10.9	92	8	8.9
Heidelberg U	636	100	15.7	125	32	25.3	320	51	16.0	172	16	9.3	20	1	6.4
Hildesheim U	9	1	11.1	9	1	11.1	0	0	–	0	0	–	0	0	–
Hohenheim U	122	23	18.9	7	2	27.3	104	20	18.8	8	1	6.5	3	1	33.3
Ilmenau TU	79	4	5.1	4	0	0.0	1	0	0.0	11	0	0.0	63	4	6.4
Jena U	390	67	17.2	132	22	16.7	123	27	21.7	112	15	13.0	24	4	15.9
Kaiserslautern TU	127	14	11.0	0	0	–	25	6	24.9	52	4	7.1	50	4	8.0
Karlsruhe TH	349	39	11.2	22	3	14.8	24	8	34.2	145	18	12.2	158	10	6.2
Kassel U	100	21	21.0	34	13	38.6	11	1	9.0	13	0	0.0	42	7	16.7
Kiel U	343	40	11.7	61	9	14.7	161	20	12.3	91	10	11.1	29	1	3.5
Koblenz-Landau U	22	2	9.1	9	1	11.1	1	1	100.0	3	0	6.3	9	0	0.0
Leipzig U	335	57	17.0	84	21	24.9	113	22	19.1	114	11	9.9	24	3	13.3

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Higher education institution	Total			Humanities and social sciences			Life sciences			Natural sciences			Engineering sciences		
	No.	of which women		No.	of which women		No.	of which women		No.	of which women		No.	of which women	
		No.	%		No.	%		No.	%		No.	%		No.	%
Lübeck U	120	21	17.6	2	1	22.2	98	21	20.9	7	0	0.0	12	0	0.0
Lüneburg U	8	2	25.0	8	2	25.0	0	0	–	0	0	–	0	0	–
Magdeburg U	153	17	11.1	12	2	16.9	75	12	16.0	14	0	0.0	52	3	5.8
Mainz U	425	69	16.2	88	21	24.0	177	32	17.9	152	13	8.8	8	3	34.9
Mannheim U	81	6	7.4	62	4	6.5	1	0	0.0	3	1	15.5	15	2	10.3
Marburg U	274	47	17.2	71	18	24.9	139	19	13.8	57	9	15.6	7	1	17.3
Munich LMU	742	133	17.9	208	48	23.1	354	67	18.9	162	17	10.5	19	1	5.3
Munich TU	528	67	12.7	19	3	15.5	224	43	19.4	144	11	7.9	140	9	6.6
Munich UdBW	29	1	3.4	2	1	50.0	1	0	0.0	5	0	0.0	21	0	0.0
Münster U	456	76	16.7	117	25	21.3	185	38	20.2	141	13	9.2	12	1	4.1
Oldenburg U	103	23	22.3	11	3	26.3	38	12	31.1	34	4	12.5	20	4	20.3
Osnabrück U	113	25	22.1	36	10	28.5	43	10	24.3	29	4	15.1	5	0	0.0
Paderborn U	113	13	11.5	20	8	38.5	1	0	0.0	32	2	6.2	60	4	5.8
Passau U	19	1	5.3	8	0	0.0	0	0	0.0	5	1	20.7	6	0	0.0
Potsdam U	176	37	21.0	66	19	28.9	44	8	18.5	62	10	15.5	5	0	7.3
Regensburg U	270	39	14.4	50	9	17.0	128	21	16.4	91	9	10.4	1	0	0.0
Rostock U	161	26	16.1	25	4	14.2	51	15	29.2	39	2	5.1	46	6	12.0
Saarbrücken U	200	31	15.5	48	13	27.0	71	14	20.1	32	4	11.6	48	0	0.0
Siegen U	81	8	9.9	30	5	16.7	0	0	0.0	14	1	7.2	37	2	5.4
Stuttgart U	311	28	9.0	37	5	13.7	25	5	19.8	95	8	8.1	154	10	6.7
Trier U	86	13	15.1	70	13	18.5	4	0	0.0	10	0	0.0	2	0	0.0
Tübingen U	588	91	15.5	201	38	18.9	266	49	18.5	99	2	2.0	22	2	9.1
Ulm U	256	37	14.5	7	1	14.6	169	30	17.8	55	3	6.1	25	3	10.5
Weimar U	37	5	13.5	7	1	14.3	0	0	–	0	0	0.0	30	4	13.4
Witten-Herdecke U	11	4	36.4	1	0	0.0	10	4	40.0	0	0	–	0	0	–
Wuppertal U	65	11	16.9	17	6	35.3	2	0	0.0	32	0	1.0	14	5	32.9
Würzburg U	450	78	17.3	62	18	28.6	276	53	19.1	98	7	7.2	14	1	3.6
Total reporting sample[1)]	**18,001**	**2,834**	**15.7**	**3,891**	**910**	**23.4**	**6,662**	**1,271**	**19.1**	**4,634**	**420**	**9.1**	**2,814**	**233**	**8.3**
HEIs overall	**18,159**	**2,862**	**15.8**	**3,970**	**930**	**23.4**	**6,681**	**1,273**	**19.1**	**4,656**	**422**	**9.1**	**2,852**	**237**	**8.3**
Based on: No. of HEIs	**166**	**105**		**131**	**91**		**82**	**59**		**89**	**63**		**99**	**64**	

Notes:
This analysis is based on data concerning the gender of researchers who participated in proposals for the Individual Grants Programme. In the case of Coordinated Programmes, the gender of spokespersons and their deputies and of project leaders and associated researchers is taken into account. In the case of proposals for DFG Research Centres and the first two funding lines of Excellence Initiative, the gender of the designated Principal Investigators forms the basis. The subject assigned to a proposal participant is defined in terms of the subject in which the proposal is decided. So-called equivalents are calculated for scientists who were active in several subjects from different scientific disciplines. For example, three proposals in scientific discipline A and one proposal in scientific discipline B result in 0.75 scientific discipline equivalents in A and 0.25 in scientific discipline B. Further information on the data basis used and the methodical approach can be derived from section A.1.2 in the appendix.

[1)] Only those HEIs which received more than € 0.5 million in DFG awards from 2005 to 2007 and which submitted five or more proposals in the specified period. Persons working at several institutions during the reporting period are counted multiple times, but only once in the total.

Data basis and source:
Deutsche Forschungsgemeinschaft (DFG): DFG awards 2005 to 2007.
Calculations by the DFG.

Table A-14:
DFG awards 2005 to 2007 by non-university research institutions per subject area (in millions of euros)

Institution	Main location	Total	HUM	SOC	BIO	MED	VAF	CHE	PHY	MAT	GEO	MEC[2)]	CSE	CEA
ACCESS	Aachen	2.0										2.0		
European Centre for Mechatronics (aps)	Aachen	2.0										2.0		
FhI for Laser Technology (ILT)	Aachen	3.3										2.7	0.6	
FhI for Production Technology (IPT)	Aachen	2.3										1.4	0.8	0.0
Institute of Plastics Processing (IKV)	Aachen	6.8						1.3				5.2	0.3	
Kerckhoff Clinic	Bad Nauheim	1.1				1.1								
MPI for Heart and Lung Research	Bad Nauheim	1.4			0.0	1.4								
Berlin-Brandenburg Academy of Sciences and Humanities (BBAW)	Berlin	2.1	1.9			0.1				0.2				
Federal Institute for Materials Research and Testing (BAM)	Berlin	3.8	0.2		0.1			0.9				1.5	0.4	0.7
Fritz Haber Institute of the Max Planck Society	Berlin	6.3			0.0			3.6	2.6	0.0		0.1		
German Archaeological Institute (DAI)	Berlin	9.3	9.3											
German Heart Institute Berlin (DHZB)	Berlin	1.4			0.0	1.4								
German Rheumatism Research Centre (DRFZ)	Berlin	4.8			0.2	4.6		0.0		0.0		0.0		
Helmholtz Centre Berlin (HZB)	Berlin	2.4			0.1			0.2	0.9	0.0		0.9	0.2	
Humanities Research Centres Berlin (GWZ)	Berlin	9.8	9.8	0.0										
Leibniz Institute for Molecular Pharmacology (FMP)	Berlin	5.2			3.0	1.7		0.5	0.0					
Leibniz Institute for Zoo and Wildlife Research (IZW)	Berlin	1.2			0.7		0.5							
Leibniz Institute of Freshwater Ecology and Inland Fisheries (IGB)	Berlin	1.1			0.1	0.0					1.0			
Max Born Institute for Nonlinear Optics and Short Pulse Spectroscopy (MBI)	Berlin	3.7						0.4	3.1				0.2	
Max Delbrück Centre for Molecular Medicine (MDC)	Berlin	16.3			4.0	12.3		0.0						
MPI for Human Development	Berlin	1.3		1.0		0.4								
MPI for Infection Biology	Berlin	2.1			0.0	2.1								
MPI for Molecular Genetics	Berlin	1.7			0.5	1.0	0.2			0.0		0.0		
MPI for the History of Science	Berlin	1.9	1.0	0.0						0.9				
Paul Drude Institute for Solid State Electronics (PDI)	Berlin	1.5						0.0	1.4			0.0	0.1	
Prussian Cultural Heritage Foundation	Berlin	2.8	2.8											
Robert Koch Institute (RKI)	Berlin	4.0			0.7	3.0	0.2						0.1	
Social Science Research Centre Berlin (WZB)	Berlin	1.9	0.0	1.9										
Weierstrass Institute for Applied Analysis and Stochastics (WIAS)	Berlin	4.1		0.0	0.0				0.3	3.4	0.1	0.4		
Zuse Institute Berlin (ZIB)	Berlin	3.3				0.2			0.1	0.6		0.1	2.2	
MPI for Mathematics	Bonn	1.6								1.6				
MPI for Radio Astronomy	Bonn	1.1						0.0	1.0				0.1	
Zoological Research Museum Alexander Koenig (ZFMK)	Bonn	1.6			1.6						0.1			
Research Centre Borstel (FZB)	Borstel	10.0			1.5	8.4		0.0						
Centre for Tropical Marine Ecology (ZMT)	Bremen	1.5			0.0						1.5			
Institute for Applied Beam Technology Bremen (BIAS)	Bremen	3.6										3.1	0.4	

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Institution	Main location	Total	HUM	SOC	BIO	MED	VAF	CHE	PHY	MAT	GEO	MEC[2)]	CSE	CEA
MPI for Marine Microbiology	Bremen	5.8			2.8	0.5					2.4			
Alfred Wegener Institute for Polar and Marine Research (AWI)	Bremerhaven	11.1			0.2						10.6	0.3		
Helmholtz Centre for Infection Research (HZI)	Brunswick	8.5			4.6	3.4	0.0	0.3				0.3		
Physikalisch-Technische Bundesanstalt (PTB)	Brunswick	7.6				0.1		0.1	1.7			4.0	1.7	
FhI for Machine Tools and Forming Technology (IWU)	Chemnitz	2.6										2.6		
German Aerospace Centre (DLR)	Cologne	10.1			0.0	0.3				0.1	1.8	5.9	1.9	
MPI for Plant Breeding Research	Cologne	5.7			5.7	0.0	0.0							
Leibniz Research Centre for Working Environment and Human Factors (IfADo)	Dortmund	1.9		1.8		0.0							0.1	
MPI of Molecular Physiology	Dortmund	3.9			3.4	0.1		0.3	0.0					
FhI for Ceramic Technologies and Systems (IKTS)	Dresden	1.2										1.2		
Leibniz Institute for Solid State and Materials Research Dresden (IFW)	Dresden	8.2						1.0	4.6		0.3	2.0	0.3	
Leibniz Institute of Polymer Research Dresden (IPF)	Dresden	5.9				0.2		4.4	0.2			1.1	0.0	0.0
MPI for Chemical Physics of Solids	Dresden	2.3						0.5	1.8		0.0			
MPI for the Physics of Complex Systems	Dresden	1.4						0.1	1.3					
MPI of Molecular Cell Biology and Genetics	Dresden	9.8			5.5	4.2								
Research Centre Dresden-Rossendorf (FZD)	Dresden	4.0				0.1		0.7	1.2	0.6	0.2	1.1	0.1	
Research Institute for the Biology of Farm Animals (FBN)	Dummerstorf	3.1					3.1							
Environmental Health Research Institute (IUF)	Düsseldorf	2.2				2.2								
MPI for Iron Research	Düsseldorf	2.9						0.2	0.3		0.1	2.3		
Research Centre Karlsruhe (FZK)	Eggenstein-Leopoldshafen	11.8			1.0	0.5	0.8	0.9	2.1		0.7	3.0	3.0	
Bavarian Laser Centre (BLZ)	Erlangen	1.4										1.4	0.0	
MPI for Brain Research	Frankfurt	3.2			0.2	3.0		0.0						
MPI of Biophysics	Frankfurt	6.7			6.3	0.2		0.0				0.1		
Peace Research Institute Frankfurt (HSFK)	Frankfurt	1.9		1.9										
Senckenberg Nature Research Society (SGN)	Frankfurt	2.8			0.2						2.6			
Society for Chemical Engineering and Biotechnology (DECHEMA)	Frankfurt	1.6						0.2				1.5		
FhI for Mechanics of Materials (IWM)	Freiburg	2.0					0.0		0.2			1.8		
MPI of Immunobiology	Freiburg	5.8			0.7	5.1								
European Organisation for Astronomical Research in the Southern Hemisphere (ESO)	Garching	1.1							1.1					
MPI for Astrophysics	Garching	8.1							8.0			0.1		
MPI for Extraterrestrial Physics	Garching	6.5							6.5					
MPI for Plasma Physics	Garching	2.0						0.0	1.9			0.1		
MPI of Quantum Optics	Garching	8.9						0.7	8.3					
Leibniz Institute of Plant Genetics and Crop Plant Research (IPK)	Gatersleben	3.7			2.9	0.3	0.6							
Research Centre Geesthacht (GKSS)	Geesthacht	4.9				0.2		0.4		0.0	2.4	1.9		
Leibniz Institute for Primate Research (DPZ)	Göttingen	1.9			1.4	0.1	0.3							
MPI for Biophysical Chemistry	Göttingen	11.0			6.6	1.2		3.1	0.2					
MPI for Dynamics and Self-Organisation	Göttingen	1.1			0.0			0.3	0.7			0.1		

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Institution	Main location	Total	HUM	SOC	BIO	MED	VAF	CHE	PHY	MAT	GEO	MEC[2)]	CSE	CEA
MPI of Experimental Medicine	Göttingen	4.1			1.4	2.6								
Friedrich Loeffler-Institute (FLI)	Greifswald	2.9			0.1	0.8	2.1							
Leibniz Institute of Agricultural Development in Central and Eastern Europe (IAMO)	Halle	1.3					1.3							
Leibniz Institute of Plant Biochemistry (IPB)	Halle	2.5			2.1			0.4						
MPI of Microstructure Physics	Halle	4.5						0.1	4.0			0.3		
Bernhard-Nocht-Institute for Tropical Medicine (BNI)	Hamburg	1.5			0.1	1.3		0.0						
German Electron Synchrotron (DESY)	Hamburg	2.8			0.1				2.6					
German Institute of Global and Area Studies (GIGA)	Hamburg	1.6	0.1	1.5										
Heinrich-Pette-Institute for Experimental Virology and Immunology (HPI)	Hamburg	2.3			0.4	1.9								
MPI for Meteorology	Hamburg	5.0									4.8	0.2		
Federal Institute for Geosciences and Natural Resources (BGR)	Hannover	2.5				0.2					2.4			
Institute of Integrated Production Hannover (IPH)	Hannover	1.8										1.8		
Laser Centre Hannover (LZH)	Hannover	4.6			0.0	0.4			0.6			2.4	1.1	
European Molecular Biology Laboratory (EMBL)	Heidelberg	7.1			6.1	1.0		0.1						
German Cancer Research Centre (DKFZ)	Heidelberg	16.1			3.8	11.7		0.0				0.4	0.1	
Heidelberg Academy of Sciences and Humanities (HAW)	Heidelberg	1.6	0.0								1.6			
MPI for Astronomy	Heidelberg	4.2							4.2					
MPI for Medical Research	Heidelberg	4.9			2.2	2.8		0.0	0.0			0.0		
MPI for Nuclear Physics	Heidelberg	5.1							4.6		0.5			
FhI for Applied Optics and Precision Engineering (IOF)	Jena	1.7										1.6	0.1	
Leibniz Institute for Age Research, Fritz Lipmann Institute (FLI)	Jena	4.3			3.8	0.5								
Leibniz Institute for Natural Product Research and Infection Biology (HKI)	Jena	2.6			0.6	1.3		0.2				0.6		
MPI for Biogeochemistry	Jena	1.6			1.4						0.1			
MPI for Chemical Ecology	Jena	1.6			0.9		0.1	0.6						
Research Centre Jülich (FZJ)	Jülich	12.6			0.9	0.8	0.3	0.6	3.2	0.1	1.3	5.1	0.4	
Institute for Composite Materials (IVW)	Kaiserslautern	2.9						0.7				2.2		
Leibniz Institute of Marine Sciences (IFM-GEOMAR)	Kiel	33.1			0.6						32.4			
Leibniz Institute of Atmospheric Physics (IAP)	Kühlungsborn	2.6									2.6			
Paul-Ehrlich-Institute (PEI)	Langen	1.4			0.3	0.9		0.2						
Helmholtz Centre for Environmental Research (UFZ)	Leipzig	3.9			1.5	0.1	0.6	0.1			1.0	0.1		0.5
Humanities Research Centre for the History and Culture of East Central Europe (GWZO)	Leipzig	5.2	5.2											
Leibniz Institute for Tropospheric Research (IfT)	Leipzig	3.5									3.4	0.1	0.1	
Leibniz Institute of Surface Modification (IOM)	Leipzig	2.6						0.7	1.2			0.3	0.3	
MPI for Evolutionary Anthropology	Leipzig	1.1	0.4		0.6						0.0			
MPI for Human Cognitive and Brain Sciences	Leipzig	2.8	0.2	1.0		1.6								
MPI for Mathematics in the Sciences	Leipzig	1.2				0.1			0.1	0.8		0.1	0.1	
Leibniz Institute for Neurobiology (IfN)	Magdeburg	2.1			0.5	1.5								
Directorate General Cultural Heritage Rhineland-Palatinate	Mainz	1.1	1.1											
Institute for Microtechnology Mainz (IMM)	Mainz	1.0							0.1				0.9	

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Institution	Main location	Total	HUM	SOC	BIO	MED	VAF	CHE	PHY	MAT	GEO	MEC[2)]	CSE	CEA
MPI for Chemistry, Otto Hahn Institute	Mainz	2.5						0.2			2.3			
MPI for Polymer Research	Mainz	6.4			0.2	0.3		3.3	2.1			0.4	0.1	
Central Institute of Mental Health (ZI)	Mannheim	5.4		1.4	0.1	3.9								
Centre for European Economic Research (ZEW)	Mannheim	1.6		1.6										
MPI for Terrestrial Microbiology	Marburg	2.3			1.2	0.9	0.2				0.1			
MPI for Bioinorganic Chemistry	Mülheim	1.4			1.1			0.3						
MPI for Coal Research	Mülheim	4.4			0.1			4.2	0.1					
Leibniz Centre for Agricultural Landscape Research (ZALF)	Müncheberg	1.1			0.1		0.8				0.1			
Bavarian Academy of Sciences and Humanities (BAdW)	Munich	4.6	1.0					0.2	3.1		0.2	0.1		
Bavarian Natural History Collections (SNSB)	Munich	2.0	0.1		1.0	0.0					0.9			
German Heart Centre Munich (DHM)	Munich	1.1				1.0							0.1	
Institute of Contemporary History (IfZ)	Munich	1.8	1.6											0.1
MPI for Physics, Werner-Heisenberg-Institute	Munich	4.5							4.5					
MPI of Psychiatry	Munich	1.2		0.2	0.0	1.0								
MPI for Molecular Biomedicine	Münster	2.4			2.2	0.2								
German Institute of Human Nutrition (DIfE)	Nuthetal	1.1			0.0	1.1								
German Research Centre for Environmental Health (HMGU)	Oberschleissheim	10.7			3.1	6.7	0.5	0.0		0.1	0.3			
MPI of Biochemistry	Planegg	13.4			11.1	2.0	0.0	0.0	0.2					
MPI of Neurobiology	Planegg	4.1			1.9	2.2	0.0							
Astrophysical Institute of Potsdam (AIP)	Potsdam	2.4							2.4					
Centre for Research on Contemporary History (ZZF)	Potsdam	5.3	5.3											
German Research Centre for Geosciences (GFZ)	Potsdam	11.3									11.3			
MPI for Gravitational Physics, Albert Einstein Institute	Potsdam	3.5							3.5	0.0				
MPI of Colloids and Interfaces	Potsdam	3.5				0.0		3.0	0.1	0.0		0.3		
MPI of Molecular Plant Physiology	Potsdam	3.7			3.3		0.4							
Leibniz Institute for Baltic Sea Research Warnemünde (IOW)	Rostock	2.8				0.1					2.7			
Leibniz Institute for Catalysis (LIKAT)	Rostock	2.1						1.9	0.0			0.2		
MPI for Informatics	Saarbrücken	10.4				0.1		0.1					10.3	
MPI for Software Systems	Saarbrücken	1.9											1.9	
MPI for Ornithology	Seewiesen	1.9			1.8	0.0					0.0		0.1	
Institute for Clinical Pharmacology at the Robert-Bosch-Krankenhaus (IKP)	Stuttgart	1.1				1.1								
MPI for Metals Research	Stuttgart	2.1							2.0			0.1		

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Institution	Main location	Total	HUM	SOC	BIO	MED	VAF	CHE	PHY	MAT	GEO	MEC[2]	CSE	CEA
MPI for Solid State Research	Stuttgart	3.6						0.6	2.7		0.1	0.1	0.1	
Regierungspräsidium Stuttgart, Landesamt für Denkmalpflege	Stuttgart	2.2	2.2											
MPI for Biological Cybernetics	Tübingen	6.9		0.0	0.0	5.5							1.3	
MPI for Developmental Biology	Tübingen	5.8			5.6	0.2		0.0						
Total reporting sample[1]		**622.6**	**42.4**	**12.3**	**114.3**	**115.2**	**12.0**	**37.7**	**90.8**	**8.3**	**91.9**	**66.7**	**29.6**	**1.3**
Other institutions		**72.2**	**15.2**	**11.6**	**3.1**	**8.0**	**3.2**	**2.0**	**3.9**	**0.9**	**4.1**	**13.2**	**5.4**	**1.6**
Institutions overall		**694.8**	**57.5**	**23.9**	**117.4**	**123.2**	**15.2**	**39.7**	**94.7**	**9.2**	**96.0**	**79.9**	**35.0**	**2.9**
Based on: No. of institutions		**392**	**87**	**49**	**90**	**107**	**36**	**67**	**60**	**22**	**59**	**98**	**60**	**16**

Notes:

HUM: Humanities
SOC: Social and behavioural sciences
BIO: Biology
MED: Medicine
VAF: Veterinary medicine, agriculture and forestry
CHE: Chemistry
PHY: Physics
MAT: Mathematics
GEO: Geosciences
MEC: Mechanical engineering[2]
CSE: Computer science, system and electrical engineering
CEA: Construction engineering and architecture

In this report, the term „non-university research institution" refers to the institutes of the research organisations FhS, HGF, MPS and WGL as well as other institutions such as hospitals, state research facilities or AiF institutes, excluding industry and commercial companies.

[1] Only institutions which received total awards of greater than one million euros from the DFG between 2005 and 2007.

[2] For the projects approved from 2006 to 2007 in the context of the Excellence Initiative, there is as yet no information available for the distribution of DFG awards between the three subject areas distinguished by the DFG, "mechanical and industrial engineering", "thermal and process engineering" and "materials science and engineering". For statistical purposes they are grouped together here and considered as a single subject area "mechanical engineering". Further information on the data basis used and the methodical approach can be derived from section A.3 in the appendix.

Data basis and source:
Deutsche Forschungsgemeinschaft (DFG): DFG awards 2005 to 2007.
Calculations by the DFG.

Table A-15:
DFG reviewers 2005 to 2007 by HEI per subject area

Higher education institution	Total	HUM	SOC	BIO	MED	VAF	CHE	PHY	MAT	GEO	MIE	TPE	MSE	CSE	CEA
Munich LMU	385	85.6	55.1	39.4	108.7	14.3	13.2	24.9	7.5	25.0		0.3	0.1	10.4	0.3
Bonn U	306	50.2	37.5	20.7	74.6	25.2	15.0	24.4	15.1	29.0		1.1	1.3	10.0	2.0
Munich TU	302	4.1	9.9	26.2	68.1	36.1	26.7	13.6	11.5	7.6	12.4	13.9	4.2	49.2	18.7
Heidelberg U	290	48.9	29.5	32.9	98.2	3.9	14.9	25.0	10.9	16.0		1.7		7.7	0.6
Tübingen U	290	91.9	31.8	32.3	75.2	4.0	10.9	9.1	4.5	19.2	0.1	0.5	1.4	8.6	0.5
Freiburg U	285	49.3	25.9	31.3	88.1	6.9	16.9	16.5	13.3	10.3	3.1	3.7	0.5	18.0	1.0
Berlin FU	278	72.4	40.1	27.4	69.0	10.1	14.4	12.6	8.7	15.8	0.4	0.9	1.0	4.5	0.8
Göttingen U	276	53.5	26.3	33.8	57.9	33.4	17.9	17.9	5.5	19.3		1.4	8.5	0.5	0.1
Erlangen-Nuremberg U	270	32.4	27.0	12.0	79.3	1.1	14.8	19.3	11.0	17.5	10.2	12.3	10.4	20.3	2.4
Frankfurt/Main U	255	58.4	43.7	27.7	65.7	1.5	7.6	12.3	1.6	25.1	0.5	1.0		9.9	
Cologne U	253	62.5	46.2	23.7	57.9	1.5	14.0	18.1	4.8	20.1		1.8	0.1	0.7	1.5
Münster U	251	58.1	34.3	20.5	60.6	3.1	19.7	12.6	9.8	21.6		1.0	4.5	4.3	1.0
Berlin HU	248	66.2	41.4	17.3	63.8	9.7	8.7	16.8	8.8	3.9	0.5	0.1	0.7	9.3	0.9
Hamburg U	246	50.1	34.8	22.7	49.1	7.6	12.8	23.5	7.5	26.6	1.3	0.1	1.9	6.4	1.5
Aachen TH	241	7.3	11.4	8.1	40.1	3.1	13.9	16.9	10.7	18.6	22.6	21.5	19.5	33.5	13.8
Bochum U	222	44.4	26.7	14.3	36.1	3.5	15.4	14.1	6.9	14.4	5.5	9.0	5.1	15.9	10.6
Dresden TU	209	16.3	17.4	8.9	33.8	9.3	9.2	13.8	4.7	10.8	14.8	8.9	15.9	26.2	19.0
Mainz U	204	42.3	24.7	14.8	62.4	3.4	13.5	11.9	6.5	18.3	2.1	1.1	1.0	2.0	
Kiel U	198	23.1	20.0	13.6	50.7	22.9	11.6	10.3	5.0	22.7	0.2	1.1	3.8	12.7	0.3
Würzburg U	196	23.9	17.1	27.9	74.5	2.7	11.0	12.2	4.7	11.8		0.9	2.0	7.3	
Duisburg-Essen U	188	12.5	23.6	10.4	54.9	1.2	14.7	15.4	13.0	8.7	7.3	8.0	2.5	12.1	3.8
Berlin TU	169	10.4	12.7	2.6	4.6	3.8	16.9	15.2	10.2	12.8	7.4	13.8	6.9	34.9	16.9
Stuttgart U	168	8.6	5.5	6.8	5.5	1.6	17.2	17.2	6.8	11.0	23.6	18.0	4.7	30.0	11.4
Marburg U	163	35.1	17.8	26.1	42.4	4.5	15.3	8.7	2.3	5.8	0.1	1.1	0.2	3.1	0.5
Karlsruhe TH	161	2.0	5.5	6.7	6.2	1.8	14.0	18.0	7.7	17.2	10.9	21.3	7.8	29.2	12.7
Leipzig U	159	40.7	18.4	10.7	45.6	6.5	9.1	2.8	4.7	5.7		2.5	0.4	9.3	2.8
Jena U	157	29.4	24.6	15.7	35.8	4.4	9.5	9.0	2.3	10.3	1.0	1.7	2.9	10.1	0.3
Giessen U	156	26.6	18.1	13.0	43.9	30.2	7.5	5.4	4.0	4.1	1.0	0.8	0.5	1.0	
Düsseldorf U	152	18.7	18.0	20.4	58.9	0.7	10.4	11.6	6.1	0.8		1.7	1.5	3.3	
Darmstadt TU	150	6.4	14.2	9.9	3.7	0.8	16.0	10.1	8.7	7.1	11.4	15.6	11.2	25.8	9.2
Regensburg U	145	22.1	20.5	15.9	52.3	0.4	12.1	12.6	5.8	1.0		0.1	1.4	0.4	0.3
Saarbrücken U	142	18.1	16.5	6.5	42.8	1.0	9.4	10.6	7.7	2.0	3.8	0.9	6.8	14.8	1.3
Halle-Wittenberg U	132	28.4	17.3	17.9	21.6	12.7	11.2	4.9	2.1	2.6	2.7	4.1	3.3	2.1	1.2
Bremen U	129	14.4	18.7	4.1	10.2		5.4	11.2	3.6	37.9	4.1	3.5	2.9	12.0	1.0
Hannover U	126	8.8	10.1	6.2	2.8	11.6	8.6	11.3	7.2	15.9	10.5	4.3	4.3	14.9	9.7
Bielefeld U	123	22.0	38.7	18.0	8.6	2.5	10.4	8.0	8.7	0.1		1.3	0.6	4.1	
Brunswick TU	117	2.0	5.2	11.6	6.4	1.1	10.4	6.1	8.1	6.6	9.0	11.1	5.4	18.4	15.6
Ulm U	111	0.3	0.6	14.3	51.1		7.7	9.4	5.4	1.3	0.4	1.3	3.7	15.6	
Dortmund TU	109	6.9	21.9	1.3	2.8	0.1	10.3	11.9	3.4	1.1	12.2	10.0	2.1	15.8	9.1
Constance U	102	19.8	26.0	13.9	15.3	0.4	4.7	7.6	3.2	5.0		0.5		5.7	
Bayreuth U	99	12.6	6.7	19.5	2.9	7.7	13.7	5.1	3.3	17.3		3.4	5.2	1.7	
Hannover MedH	95	1.0	0.5	9.1	81.9	1.0	0.5	0.1			0.1			0.8	
Kaiserslautern TU	83	0.1		6.5	9.1	1.2	8.9	8.6	6.2	2.3	3.6	6.5	1.4	18.8	9.8
Magdeburg U	82	2.4	15.7	2.0	22.3		2.8	2.3	6.7	0.3	6.0	7.7	3.0	10.6	0.3
Rostock U	82	8.0	7.5	5.5	14.3	7.2	8.3	6.9	3.3	1.0	1.4	6.3	2.6	7.2	2.5
Potsdam U	78	20.3	16.7	9.7	5.2	2.5	4.3	6.0	3.0	8.1				2.1	0.1
Osnabrück U	63	14.0	10.4	13.7	7.0	0.2	3.8	5.9	1.8	2.0		0.5		3.5	0.2
Greifswald U	62	11.8	12.2	7.3	18.1	1.3	2.9	2.4	2.0	3.8		0.2			
Kassel U	61	6.1	12.5	3.3	0.7	2.7	4.1	7.0	2.0	1.3	3.8	2.1	3.2	6.5	5.8
Wuppertal U	59	9.4	11.9	0.1	0.6		6.5	5.0	5.0	2.0	1.0	1.0	0.2	8.3	8.0
Paderborn U	58	9.0	4.0	1.0			3.8	3.7	3.8		7.9	5.5	0.9	18.1	0.3
Oldenburg U	57	4.1	8.1	6.9	5.8	0.4	6.6	2.8	1.0	5.1	2.3	4.2		9.1	0.7
Hohenheim U	55		5.9	8.8	5.6	26.6	1.3		1.0	2.8	0.5	1.0		0.1	1.5
Lübeck U	54	1.0	1.6	5.1	39.1	0.0	0.6		2.0					4.5	
Trier U	52	19.3	19.6	2.3	1.1				3.0	6.7					
Mannheim U	50	6.6	32.3		0.4	0.5			3.4	1.0			1.0	4.8	
Augsburg U	49	11.5	13.0	1.0			1.1	7.9	6.9	1.0			2.5	4.0	0.1
Siegen U	47	8.3	8.8	0.5	0.4	0.7	3.6	5.1	1.0	0.1	1.7	4.4	5.2	4.3	2.8

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Higher education institution	Total	HUM	SOC	BIO	MED	VAF	CHE	PHY	MAT	GEO	MIE	TPE	MSE	CSE	CEA
Freiberg TU	45	2.5	1.0		0.2	0.2	1.0	0.1	0.2	10.0	0.9	8.8	16.8	1.3	2.1
Chemnitz TU	44	2.0	8.0		0.5		3.8	4.5	6.7		9.8	1.1	4.7	2.9	
Clausthal TU	43				0.1		5.3	0.9	2.0	3.0	7.5	5.4	15.4	1.5	1.9
Hamburg-Harburg TU	41		1.0	1.0	0.9		1.8	0.1	2.0		4.1	9.6	3.6	10.2	6.6
Bamberg U	33	16.6	12.7		1.0					1.0				1.7	
Bremen JU	31	2.2	9.8	3.2	1.5	1.0	2.3	5.0	1.0	2.0				3.0	
Ilmenau TU	31		1.0		0.8		1.1	1.0			2.3	3.4	7.1	11.9	2.4
Munich UdBW	30	1.0	4.0						2.0	3.6	4.1	3.4	0.1	5.0	6.8
Hannover TiHo	25			7.0	4.7	12.4	0.8			0.1					
Erfurt U	23	12.3	10.3		0.5										
Cottbus TU	21	2.0				1.0	1.0	0.6		1.8	2.3	2.1	3.5	4.0	2.7
Passau U	20	5.2	7.5			0.3			2.0	2.0				3.0	
Hamburg UdBW	18	2.5	6.5				1.0				4.1	0.5	1.4	2.0	
Weimar U	18	2.0							1.0	2.0	0.5		0.3	0.3	11.9
Koblenz-Landau U	17	3.2	8.5	1.0	0.1	1.1				0.0		0.7		2.4	
Hagen FernU	13	3.0	6.0		1.0									3.0	
Eichstätt-Ingolstadt KathU	12	6.0	2.0						1.0	2.0				1.0	
Frankfurt/Oder U	9	4.6	4.4												
Witten-Herdecke U	9	1.5	0.5	0.9	6.1										
Lüneburg U	8	2.0	6.0												
Hildesheim U	7	3.0	3.9		0.1										
Hamburg HCU	5	0.7	0.6			0.1					0.1				3.5
Hannover HMT	5	2.0	2.2		0.5									0.3	
Cologne FH	5	1.0					1.0				1.0	1.0			1.0
Total reporting sample[1)]	**9,763**	**1,494.8**	**1,218.1**	**802.7**	**2,061.6**	**356.6**	**594.7**	**614.1**	**353.0**	**592.7**	**244.0**	**282.4**	**229.1**	**677.6**	**241.6**
Other HEIs	**114**	**24.2**	**34.0**	**0.5**	**3.3**	**5.0**	**2.5**	**1.3**	**4.0**	**2.0**	**5.5**	**5.2**	**5.3**	**5.7**	**15.5**
HEIs overall	**9,877**	**1,518.9**	**1,252.1**	**803.2**	**2,065.0**	**361.6**	**597.2**	**615.4**	**357.0**	**594.7**	**249.5**	**287.6**	**234.4**	**683.2**	**257.1**
Based on: No. of HEIs	**153**	**99**	**99**	**63**	**75**	**62**	**69**	**63**	**70**	**68**	**53**	**67**	**62**	**78**	**66**

Notes:

HUM: Humanities
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TPE: Thermal and process engineering
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CEA: Construction engineering and architecture

The subject assigned to a reviewer is defined in terms of the subject in which the evaluated proposal is decided. „Subject area equivalents" are calculated for reviewers who were active in several subjects from different subject areas. For example, three reviewed proposals in subject area A and one proposal in subject area B result in 0.75 subject area equivalents in A and 0.25 subject area equivalents in subject area B.
Further information on the data basis used and the methodical approach can be derived from section A.1.2 in the appendix.

[1)] Only HEIs where at least five DFG reviewers were active during the period from 2005 to 2007.

Data basis and source:
Deutsche Forschungsgemeinschaft (DFG): Reviewers of proposals submitted within the framework of the Individual Grants Programme and the Coordinated Programmes from 2005 to 2007.
Calculations by the DFG.

Table A-16:
DFG reviewers 2005 to 2007 by non-university research institution per subject area

Institution	Main location	Total	HUM	SOC	BIO	MED	VAF	CHE	PHY	MAT	GEO	MIE	TPE	MSE	CSE	CEA
Federal Institute for Materials Research and Testing (BAM)	Berlin	18				1.0		4.0				0.2	1.5	8.3	1.0	2.0
Fritz Haber Institute of the Max Planck Society	Berlin	6						2.0	2.8				1.0	0.1		
German Archaeological Institute (DAI)	Berlin	12	11.9													0.1
German Institute for Economic Research (DIW)	Berlin	5		4.0			1.0									
HELIOS Clinics	Berlin	7				6.0	1.0									
Helmholtz-Centre Berlin (HZB)	Berlin	8						1.5	1.8			0.1		4.4	0.3	
Humanities Research Centres Berlin (GWZ)	Berlin	5	4.0	1.0												
Leibniz Institute for Molecular Pharmacology (FMP)	Berlin	9			3.7	2.2		3.1								
Leibniz Institute for Research on Evolution and Biodiversity (MfN)	Berlin	9			3.5	0.5					5.0					
Leibniz Institute for Zoo and Wildlife Research (IZW)	Berlin	8			4.7	2.0	1.3									
Max Born Institute for Nonlinear Optics and Short Pulse Spectroscopy (MBI)	Berlin	7						3.0	3.7						0.3	
Max Delbrück Centre for Molecular Medicine (MDC)	Berlin	21			7.0	12.5	1.5									
MPI for Molecular Genetics	Berlin	9			5.6	3.2	0.2									
Prussian Cultural Heritage Foundation	Berlin	9	8.0												1.0	
Robert Koch Institute (RKI)	Berlin	10			1.0	6.0	2.0	1.0								
Social Science Research Centre Berlin (WZB)	Berlin	11	1.0	10.0												
German Humanities Institutes Abroad (DGIA)	Bonn	7	6.7	0.2			0.1					0.1				
Research Centre Borstel (FZB)	Borstel	14			1.3	10.3	0.5	1.0	0.5				0.5			
Foundation Institute for Material Engineering (IWT)	Bremen	5										2.1	1.0	0.9	1.0	
MPI for Marine Microbiology	Bremen	9			1.5	3.3	0.6	0.1			3.5					
Alfred Wegener Institute for Polar and Marine Research (AWI)	Bremerhaven	27			6.8	2.0					18.3					
Helmholtz Centre for Infection Research (HZI)	Brunswick	15			4.3	8.0	1.7	1.0								
Johann Heinrich von Thünen-Institute (vTI)	Brunswick	12			0.3		10.7				1.0					
Julius Kühn-Institute (JKI)	Brunswick	7			2.0		5.0									
Physikalisch-Technische Bundesanstalt (PTB)	Brunswick	10				2.0			3.8		0.2	1.0			3.0	
German Aerospace Centre (DLR)	Cologne	30						1.0	2.8		7.5	1.2	9.1	5.5	2.9	
MPI for Plant Breeding Research	Cologne	11			8.8		2.2									
MPI for the Study of Societies	Cologne	5		5.0												
Institute for Analytical Sciences (ISAS)	Dortmund	6			1.0			3.8	0.3				0.3	0.3	0.2	
Leibniz Research Centre for Working Environment and Human Factors (IfADo)	Dortmund	9		4.0		4.7	0.3									
MPI of Molecular Physiology	Dortmund	6			3.7	1.5		0.8								
Leibniz Institute for Solid State and Materials Research Dresden (IFW)	Dresden	8						1.4	1.7					2.9	2.0	
Leibniz Institute of Polymer Research (IPF)	Dresden	9				0.3		6.5	0.3			1.1		0.8		
MPI of Molecular Cell Biology and Genetics	Dresden	16			10.7	4.8	0.2	0.3								
Research Centre Dresden-Rossendorf (FZD)	Dresden	14				1.0		2.0	6.1		1.0		1.0	1.4	1.5	

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Institution	Main location	Total	HUM	SOC	BIO	MED	VAF	CHE	PHY	MAT	GEO	MIE	TPE	MSE	CSE	CEA
Research Institute for the Biology of Farm Animals (FBN)	Dummerstorf	10			0.3	3.3	6.3									
Environmental Health Research Institute (IUF)	Düsseldorf	6			1.4	4.4								0.2		
MPI for Iron Research	Düsseldorf	8						0.3	0.7			0.5		6.5		
Research Centre Karlsruhe (FZK)	Eggenstein-Leopoldshafen	25			2.8	0.7	2.0	2.3	2.0		4.2	2.0	3.0	2.0	3.0	0.9
German Institute for International Educational Research (DIPF)	Frankfurt	5	0.5	4.5												
MPI for Brain Research	Frankfurt	6			0.2	5.8										
Senckenberg Nature Research Society (SGN)	Frankfurt	9			4.5						4.5					
FhI for Mechanics of Materials (IWM)	Freiburg	6			0.2			0.7	0.7			1.0	0.2	3.3		
MPI of Immunobiology	Freiburg	7			1.5	4.9	0.6									
MPI for Extraterrestrial Physics	Garching	6			1.0				4.7		0.3					
Leibniz Institute of Plant Genetics and Crop Plant Research (IPK)	Gatersleben	15			9.1	0.5	5.4									
Research Centre Geesthacht (GKSS)	Geesthacht	12				0.3		3.5			2.0	0.3		5.0		1.0
German Primate Centre (DPZ)	Göttingen	7		1.2	3.8	1.2	0.8									
MPI for Biophysical Chemistry	Göttingen	16			9.0	4.5		2.5								
MPI for Dynamics and Self-Organisation	Göttingen	6				1.0		2.3	2.2	0.1			0.3	0.1		
Friedrich Loeffler-Institute (FLI)	Greifswald	15			0.2	0.9	13.9									
Leibniz Institute of Plant Biochemistry (IPB)	Halle	8			5.7	0.4	1.1	0.8								
MPI of Microstructure Physics	Halle	7				0.2			2.5				0.1	4.2		
Bernhard Nocht Institute for Tropical Medicine (BNI)	Hamburg	6			0.5	5.3	0.2									
German Electron Synchrotron (DESY)	Hamburg	6							5.8					0.3		
Heinrich Pette-Institute (HPI)	Hamburg	6			1.9	4.1										
MPI for Meteorology	Hamburg	5									5.0					
Federal Institute for Geosciences and Natural Resources (BGR)	Hannover	15				1.0	1.0				13.0					
European Molecular Biology Laboratory (EMBL)	Heidelberg	20			15.2	4.8										
German Cancer Research Centre (DKFZ)	Heidelberg	59		0.7	12.8	43.8	1.0	0.7								
MPI for Medical Research	Heidelberg	6			2.0	2.9		0.5	0.6							
MPI for Nuclear Physics	Heidelberg	8						0.3	7.3		0.3					
Leibniz Institute for Age Research, Fritz Lipmann Institute (FLI)	Jena	11			5.7	4.3		1.0								
Leibniz Institute for Natural Product Research and Infection Biology (HKI)	Jena	8			2.5	4.0	0.6	0.8								
MPI for Biogeochemistry	Jena	5			2.4		0.8				1.9					
MPI for Chemical Ecology	Jena	9			6.6	1.1	0.9	0.4								
Research Centre Jülich (FZJ)	Jülich	46			1.8	7.0	3.0	6.1	9.1	0.5	5.3	1.0	2.7	8.2	1.3	0.0
Institute for Composite Materials (IVW)	Kaiserslautern	5						2.5				1.8		0.7		0.1
Max Rubner-Institute	Karlsruhe	5				1.0	3.0	1.0								
MPI for Solar System Research	Katlenburg-Lindau	6							5.2		0.8					
Leibniz Institute of Marine Sciences (IFM GEOMAR)	Kiel	39			7.1	0.5					31.4					

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Institution	Main location	Total	HUM	SOC	BIO	MED	VAF	CHE	PHY	MAT	GEO	MIE	TPE	MSE	CSE	CEA
Helmholtz Centre for Environmental Research (UFZ)	Leipzig	21		1.0	5.9		2.3				11.8					
MPI for Evolutionary Anthropology	Leipzig	9	2.0	1.0	3.3	2.7										
MPI for Human Cognitive and Brain Sciences	Leipzig	5		2.0		3.0										
MPI for Chemistry, Otto Hahn Institute	Mainz	10				0.1		1.9	1.2		6.8					
MPI for Polymer Research	Mainz	9			0.5	0.1		6.2	1.3			0.5	0.5		0.0	
Central Institute of Mental Health (ZI)	Mannheim	10	0.7	1.3		8.0										
MPI for Terrestrial Microbiology	Marburg	9			3.3	3.6	1.0				1.1					
MPI for Bioinorganic Chemistry	Mülheim	5			1.8	0.3		2.6	0.3							
MPI for Coal Research	Mülheim	5			0.1	0.1		4.5					0.1	0.3		
Bavarian Academy of Sciences and Humanities (BAdW)	Munich	5	1.0						2.0		1.0		0.3		0.7	
Bavarian Natural History Collections (SNSB)	Munich	7			5.4						1.6					
German Institute of Human Nutrition (DIfE)	Nuthetal	10			0.5	8.4	1.0	0.1								
German Research Centre for Environmental Health (HMGU)	Oberschleissheim	33			8.7	17.2	3.5	0.0		1.0	1.5		0.5		0.5	
MPI of Biochemistry	Planegg	22			13.0	6.0		2.6					0.1		0.3	
Astrophysical Institute of Potsdam (AIP)	Potsdam	9							8.0		1.0					
Centre for Research on Contemporary History (ZZF)	Potsdam	5	4.0	1.0												
German Research Centre for Geosciences (GFZ)	Potsdam	21	0.3			0.1	1.2				19.1					0.3
MPI of Colloids and Interfaces	Potsdam	10			0.6	2.2		6.2	0.1				0.4	0.5		
MPI of Molecular Plant Physiology	Potsdam	7			6.0		1.0									
MPI for Art History, Bibliotheca Hertziana	Rome	5	5.0													
Leibniz Institute for Baltic Sea Research Warnemünde (IOW)	Rostock	13			2.0	1.1					9.9					
MPI for Ornithology	Seewiesen	5			5.0											
MPI for Metals Research	Stuttgart	10			0.2			1.6	3.0					5.0	0.0	
MPI for Solid State Research	Stuttgart	9			0.1			3.8	4.2					0.7	0.1	
Robert Bosch Foundation	Stuttgart	6	2.0			4.0										
MPI for Developmental Biology	Tübingen	8			5.2	1.8			1.0							
Total reporting sample[1)]		**1,081**	**47.1**	**36.9**	**226.0**	**237.4**	**78.8**	**87.9**	**85.5**	**1.6**	**159.2**	**12.8**	**22.6**	**61.6**	**19.1**	**4.5**
Other institutions		**536**	**86.5**	**66.0**	**37.1**	**125.7**	**16.3**	**17.0**	**40.0**	**9.2**	**34.2**	**22.4**	**7.5**	**24.6**	**39.2**	**10.2**
Institutions overall		**1,617**	**133.6**	**102.9**	**263.1**	**363.1**	**95.1**	**105.0**	**125.6**	**10.8**	**193.4**	**35.1**	**30.1**	**86.3**	**58.3**	**14.7**
Based on: No. of institutions		**415**	**81**	**70**	**96**	**155**	**57**	**62**	**51**	**11**	**59**	**39**	**31**	**48**	**62**	**24**

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[1)] Only institutions where at least five DFG reviewers were active during the reporting period from 2005 to 2007.

Data basis and source:
Deutsche Forschungsgemeinschaft (DFG): Reviewers of proposals submitted within the framework of the Individual Grants Programme and the Coordinated Programmes from 2005 to 2007.
Calculations by the DFG.

Table A-17:
Members of DFG Review Boards by HEI per scientific discipline

Higher education institution	Total	Humanities and social sciences	Life sciences	Natural sciences	Engineering sciences
Berlin FU	24	12	8	4	
Dresden TU	24	3	8	3	10
Tübingen U	23	11	11	1	
Göttingen U	20	5	10	5	
Munich TU	19		8	3	8
Heidelberg U	18	5	11	2	
Munich LMU	16	5	6	5	
Münster U	16	3	7	6	
Aachen TH	14		3	1	10
Berlin HU	14	2	7	5	
Bonn U	14	6	7	1	
Hamburg U	14	5	6	3	
Würzburg U	14	2	9	3	
Erlangen-Nuremberg U	13	3	5	1	4
Freiburg U	13	2	9		2
Bochum U	12	6	4	1	1
Karlsruhe TH	11	1		4	6
Stuttgart U	11			3	8
Berlin TU	10	2	1	1	6
Cologne U	10	4	5	1	
Halle-Wittenberg U	10	3	5	2	
Kiel U	10	3	4	3	
Leipzig U	10	3	5	2	
Hannover U	9		1	4	4
Greifswald U	8	3	5		
Mainz U	8	2	5	1	
Brunswick TU	7	1	1	1	4
Darmstadt TU	7	1			6
Duisburg-Essen U	7	1	3		3
Frankfurt/Main U	7	4	3		
Giessen U	7	2	4	1	
Marburg U	7	1	4	2	
Bremen U	6	2		3	1
Jena U	6	3	3		
Magdeburg U	6		1	2	3
Bielefeld U	5	1	1	3	
Chemnitz TU	5			2	3
Hannover MedH	5		5		
Oldenburg U	5		2	3	
Constance U	4	3		1	
Dortmund TU	4	1		1	2
Freiberg TU	4			1	3
Kassel U	4		1	1	2
Mannheim U	4	4			
Regensburg U	4	1	2	1	
Bayreuth U	3		1	2	
Cottbus TU	3			1	2
Düsseldorf U	3	1	2		
Ilmenau TU	3				3
Lübeck U	3		3		
Rostock U	3		2		1
Saarbrücken U	3		3		
Augsburg U	2	1			1
Hannover TiHo	2		2		
Hohenheim U	2	1	1		
Passau U	2	2			
Potsdam U	2	1		1	

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Higher education institution	Total	Humanities and social sciences	Life sciences	Natural sciences	Engineering sciences
Ulm U	2		1		1
Wuppertal U	2				2
Bamberg U	1	1			
Clausthal TU	1				1
Erfurt U	1	1			
Hagen FernU	1	1			
Hamburg UdBW	1				1
Hamburg-Harburg TU	1				1
Kaiserslautern TU	1		1		
Paderborn U	1				1
Siegen U	1				1
Trier U	1	1			
Weimar U	1				1
Witten-Herdecke U	1		1		
HEIs overall[1)]	**516**	**126**	**197**	**91**	**102**
Based on: No. of HEIs	**71**	**44**	**46**	**40**	**31**

[1)] Beyond the German HEIs considered here, another three Review Board members are working at HEIs outside Germany.

Data basis and source:
Deutsche Forschungsgemeinschaft (DFG): Elected members of DFG Review Boards for the term of office 2008 to 2011.
Calculations by the DFG.

Table A-18:
Members of DFG Review Boards by non-university reserach institution per scientific discipline

Institution	Main location	Total	HUM	LIF	NAT	ENG
Institute of Plastics Processing (IKV)	Aachen	1				1
MPI for Heart and Lung Research	Bad Nauheim	1		1		
Federal Institute for Materials Research and Testing (BAM)	Berlin	2				2
Fritz Haber Institute of the Max Planck Society	Berlin	1			1	
German Archaeological Institute (DAI)	Berlin	1	1			
Leibniz Institute for Molecular Pharmacology (FMP)	Berlin	1		1		
Leibniz Institute for Zoo and Wildlife Research (IZW)	Berlin	1		1		
Max Delbrück Centre for Molecular Medicine (MDC)	Berlin	1		1		
MPI for Human Development	Berlin	1	1			
Social Science Research Centre Berlin (WZB)	Berlin	1	1			
Weierstrass Institute for Applied Analysis and Stochastics (WIAS)	Berlin	1			1	
German Humanities Institutes Abroad (DGIA)	Bonn	1	1			
MPI for Marine Microbiology	Bremen	1		1		
Helmholtz Centre for Infection Research (HZI)	Brunswick	1		1		
Johann Heinrich von Thünen-Institute (vTI)	Brunswick	1		1		
Physikalisch-Technische Bundesanstalt (PTB)	Brunswick	2		1	1	
FhI for Machine Tools and Forming Technology (IWU)	Chemnitz	1				1
German Aerospace Centre (DLR)	Cologne	3			1	2
Federal Environment Agency (UBA)	Dessau	1			1	
FhI for Material Flow and Logistics (IML)	Dortmund	1				1
Research Institute for Regional and Urban Development (ILS)	Dortmund	1				1
Leibniz Institute for Solid State and Materials Research (IFW)	Dresden	1			1	
Leibniz Institute of Polymer Research (IPF)	Dresden	3			2	1
MPI of Molecular Cell Biology and Genetics	Dresden	1		1		
Research Centre Dresden-Rossendorf (FZD)	Dresden	1			1	
Research Institute for the Biology of Farm Animals (FBN)	Dummerstorf	1		1		
Research Centre Karlsruhe (FZK)	Eggenstein-Leopoldshafen	2			1	1
FhI for Mechanics of Materials (IWM)	Freiburg	1				1
German Research Centre for Food Chemistry (DFA)	Garching	1			1	
Leibniz Institute of Plant Genetics and Crop Plant Research (IPK)	Gatersleben	1		1		
German Primate Centre (DPZ)	Göttingen	1		1		
MPI for Biophysical Chemistry	Göttingen	2		2		
MPI of Experimental Medicine	Göttingen	1		1		
MPI of Microstructure Physics	Halle	1			1	
European Molecular Biology Laboratory (EMBL)	Heidelberg	1		1		
German Cancer Research Centre (DKFZ)	Heidelberg	2		2		
MPI for Astronomy	Heidelberg	1			1	
Leibniz Institute for Age Research, Fritz Lipmann Institute (FLI)	Jena	1		1		
Leibniz Institute for Natural Product Research and Infection Biology (HKI)	Jena	1		1		
Research Centre Jülich (FZJ)	Jülich	1			1	
Leibniz Institute of Marine Sciences (IFM GEOMAR)	Kiel	2			2	
Helmholtz Centre for Environmental Research (UFZ)	Leipzig	1		1		
Leibniz Institute for Regional Geography (IfL)	Leipzig	1			1	
Leibniz Institute for Tropospheric Research (IfT)	Leipzig	1			1	
Leibniz Institute for Neurobiology (IfN)	Magdeburg	1		1		
MPI for Polymer Research	Mainz	1			1	
Central Institute of Mental Health (ZI)	Mannheim	1		1		
Institut für deutsche Sprache (IDS)	Mannheim	1	1			
Deutsches Museum (DM)	Munich	1	1			
German Institute of Human Nutrition (DIfE)	Nuthetal	1		1		
German Research Centre for Environmental Health (HMGU)	Oberschleissheim	3		3		

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Institution	Main location	Total	HUM	LIF	NAT	ENG
MPI of Biochemistry	Planegg	1		1		
MPI for Evolutionary Biology	Plön	1		1		
German Research Centre for Geosciences (GFZ)	Potsdam	2			2	
MPI of Colloids and Interfaces	Potsdam	1			1	
MPI of Molecular Plant Physiology	Potsdam	1		1		
MPI for Art History, Bibliotheca Hertziana	Rome	1	1			
Leibniz Institute for Baltic Sea Research Warnemünde (IOW)	Rostock	1			1	
Leibniz Institute for Catalysis (LIKAT)	Rostock	1			1	
MPI for Informatics	Saarbrücken	2				2
MPI for Developmental Biology	Tübingen	1		1		
Institutions overall		**75**	**7**	**31**	**24**	**13**
Based on: No. of institutions		**61**	**7**	**27**	**21**	**10**

Notes:

HUM: Humanities and social sciences LIF: Life sciences NAT: Natural sciences ENG: Engineering sciences

Data basis and source:
Deutsche Forschungsgemeinschaft (DFG): Elected members of DFG Review Boards for the term of office 2008 bis 2011.
Calculations by the DFG.

Table A-19:
Reporting logic derived from the federal government's planning system for R&D project funding

Funding field	Funding priority		Funding area	Scientific discipline
Humanities; economics and social sciences	V0	Humanities; economics and social sciences	Humanities and social sciences	Humanities and social sciences
Biotechnology	K0	Biotechnology	Biotechnology	Life sciences
R&D in the health sector	G0	R&D in the health sector	R&D in the health sector	
Space research and space technology	D1	National funding for space research and space technology	Astronomy and astrophysics[1)]	Natural science
Geosciences and raw material supplies	O1	Geosciences (especially deep drillings)	Geosciences	
Marine and polar research; marine technology	C1	Marine and polar research		
	C2	Marine technology		
Sustainable development	F7	Global change (including peace-building research)		
Large-scale equipment for basic research	B0	Large-scale equipment for basic research	Large-scale equipment for basic research	
Energy research and energy technology	E1	Coal and other fossil fuels	Energy research and technology	Engineering sciences
	E2	Renewable energy and energy conservation		
	E3	Nuclear energy research (excluding decommissioning of nuclear facilities)		
	E4	Decommissioning of nuclear facilities; risk sharing		
Information technology (including multimedia and production engineering)	I1	Computer science	Information technology	
	I2	Basic information technologies		
	I3	Application of microsystems (including application of microelectronics; microperipherals)		
	I4	Production engineering		
	I5	Multimedia		
Aeronautical research and hypersonic technology	M0	Aeronautical research and hypersonic technology	Aeronautical and space research (excluding astronomy and astrophysics)	
Space research and space technology	D1	National funding for space research and space technology		
Materials research; physical and chemical technologies	L1	Materials research; materials for emerging technologies	Materials research, physical and chemical technologies	
	L2	Physical and chemical technologies		
Reserach and technology for mobility and transport	N0	Reserach and technology for mobility and transport	Regional sustainability, structural engineering and mobility	
Regional planning and urban development; building research	P2	Building research and technology; reserach and technology for preserving the architectural heritage; road building research		
Sustainable development	F1	Socio-ecological research; regional sustainability		
	F2	Sustainable production; cleaner environmental technology	Cleaner environmental technology and sustainable production	

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Funding field	Funding priority		Funding area	Scientific discipline
Educational research	S1	Vocational training research	Further areas	Further areas
	S2	Other educational research		
R&D in the field of nutrition	Q0	R&D in the field of nutrition		
R&D in agriculture, forestry and fishery	R0	R&D in agriculture, forestry and fishery		
R&D to improve working conditions	H0	R&D to improve working conditions		
Innovation and improved basic conditions	T2	Improving the transfer of technology and knowledge		
Non R&D relevant education expenditures – non scientific expenditures	Y2	Non R&D relevant expenditures for vocational training		
	Y3	Other non R&D relevant education expenditures		
Supporting organisations; reorganisation of research in the acceding territory; investments in the construction of HEI facilities and special programmes relating predominantly to HEIs	A6	Special programmes relating predominantly to HEIs		
	A7	Promotion of top class universities		
Structural/innovative (generic) measures and other generic activities	W1	Structural/innovative (generic) measures		
	W2	Other generic activities		

[1)] Apart from the topics listed here, the funding area of astronomy and astrophysics also includes the field of "solar system research" within the scope of the funding area "space research and space technology".

Table A-20:
Direct R&D project funding by the federal government 2005 to 2007 by HEI per funding area (in millions of euros)

Higher education institution	Total	HUM	BIO	MED	AST	GEO	LEB	ENE	INF	ASR	MAT	RSM	ENV	OTH
Dresden TU	67.8	0.3	1.5	10.9	0.6	0.9	4.2	5.1	14.0	1.0	3.7	8.8	3.4	13.6
Aachen TH	65.9		2.4	8.3	2.2	1.7	8.1	8.4	11.2	2.1	6.3	7.9	5.5	1.8
Munich TU	49.9	0.3	8.4	3.7	0.2	1.5	7.1	5.3	9.3	1.9	4.0	1.8	2.1	4.2
Hamburg U	46.3	0.2	3.1	8.1	0.4	9.7	14.7	1.0	0.7	0.2	2.2	2.8	1.1	2.1
Heidelberg U	44.8		11.8	10.7	1.1	0.8	15.5	0.8	0.8	0.4	0.9	1.3	0.3	0.3
Munich LMU	44.6	0.3	11.1	13.3		5.4	5.2	0.4	4.7	0.2	3.6			0.5
Stuttgart U	41.5		3.7	0.2	0.5	1.0	0.2	12.1	7.2	2.3	4.9	5.4	2.9	1.2
Bonn U	40.1	0.0	6.5	6.3	0.4	12.4	6.7	0.0	0.3	0.9	0.1	4.6	1.3	0.5
Karlsruhe TH	39.2		1.0	0.4		1.0	5.0	3.2	12.2	0.4	2.7	11.0	0.3	2.1
Freiburg U	37.6		8.2	11.6		0.4	5.6	0.4	3.0	0.8	4.0	0.4	2.3	0.9
Göttingen U	37.1	1.0	10.8	11.5	0.2	1.8	3.3	0.5	2.3	0.2	0.3	1.1	1.7	2.4
Cologne U	36.2	0.2	6.2	10.8	2.6	7.6	2.4	0.3	0.9	0.2	3.9	0.4	0.1	0.6
Berlin FU	35.6	0.8	12.3	8.2	2.1	1.4	1.9	0.3	1.7	1.2	3.2	0.8	0.1	1.7
Berlin HU	33.7	0.6	12.2	9.7		0.5	1.8	0.7	3.9	1.2	0.7	0.7	0.3	1.4
Kiel U	32.9	0.1	16.2	3.5	1.7	3.8	1.0	1.6	0.7	0.6	0.5	1.4	0.6	1.2
Jena U	32.9	0.7	2.2	7.5	1.0	1.0	0.4	1.5	0.5	1.2	3.5	0.2	1.6	11.6
Bochum U	32.9		5.9	6.9	0.3	0.6	4.6	2.2	3.7	0.5	1.4	4.6	0.6	1.6
Münster U	32.3		3.9	6.9	5.7	0.1	5.0	0.3	2.9	1.1	3.8	0.3	0.4	2.0
Berlin TU	31.0	0.0	0.9	0.9	0.2	3.1	1.7	2.1	8.8	3.0	0.6	5.9	2.1	1.5
Tübingen U	27.6		8.5	7.0	1.9	2.5	2.1	0.1	1.0	0.9	0.9	2.4	0.1	0.2
Brunswick TU	27.4	0.1	3.7		1.7	1.3	0.5	2.2	4.6	3.5	3.6	3.5	1.8	0.9
Darmstadt TU	26.9	0.1	0.3	0.1		0.6	3.3	2.4	10.4	1.3	2.1	4.2	1.6	0.3
Bremen U	26.8		0.8	1.4	1.4	7.8	0.0	1.1	2.3	9.0	0.9	0.6	1.1	0.5
Greifswald U	23.3		4.2	10.8		0.2	0.5			0.1	0.0	0.5	0.0	7.1
Erlangen-Nuremberg U	23.3		3.7	5.6	0.0		5.6	0.8	3.5	1.3	2.0	0.2	0.3	0.3
Frankfurt/Main U	22.7		3.7	5.8		1.6	5.3	0.1	2.9	0.0	3.0			0.5
Hannover U	22.7	0.2	0.2	0.1	0.2	2.7		5.1	7.8	1.4	1.6	2.7	0.2	0.5
Leipzig U	21.2	0.8	4.1	6.1		0.5	0.7		1.7		0.1	1.3	0.1	5.7
Mainz U	20.1		2.6	3.4	1.4	2.9	7.4	0.6	0.3	0.1		0.4		1.0
Marburg U	19.6	0.2	6.0	4.5		0.4	0.4		1.3	0.3	5.0	0.3		1.1
Würzburg U	18.9	0.1	8.9	2.7		2.3	2.6	0.2	0.7	0.3	0.7	0.2		0.0
Dortmund TU	18.3	0.1	0.0			0.6	3.8	0.2	5.6	0.0	0.7	0.3	0.5	6.4
Freiberg TU	17.2					0.8	0.1	6.6		0.1	0.2	1.2	5.4	2.8
Magdeburg U	16.4		1.8	8.4		0.0	0.1	0.7	0.9	0.4	0.4		0.1	3.8
Rostock U	16.2	0.0	1.8	1.1		3.0	1.7	0.3	0.7		0.3	1.6	0.1	5.5
Duisburg-Essen U	16.0		2.2	3.5		0.7	0.4	1.9	3.2	0.3	0.5	0.9	0.1	2.2
Giessen U	15.5	0.7	6.6	1.1		1.0	3.1		0.3	0.7	0.7	0.2	0.0	1.0
Bielefeld U	15.3	1.7	8.1	1.6		0.6	0.3	0.0	1.1		1.2	0.0	0.2	0.4
Saarbrücken U	13.4		3.8	0.6			1.3	0.5	3.8		2.2	1.0	0.2	0.1
Ilmenau TU	13.3		0.2	0.1			0.1	1.1	2.6	1.5	1.2	0.4	0.4	5.7
Potsdam U	12.9	0.1	4.9	0.3	0.2	1.8	0.4	0.3	1.7		1.4	0.8		1.1
Hamburg-Harburg TU	12.3		0.0	0.1		1.9		2.4	0.5	3.4	0.3	1.7	0.9	1.1
Düsseldorf U	12.3		2.6	6.0		0.2		0.4	0.8	0.2	1.2		0.0	0.8
Ulm U	12.1		2.5	4.6		1.0	0.1	0.4	0.5	1.0	1.4		0.2	0.3
Halle-Wittenberg U	12.0	0.3	1.3	6.8			0.1	0.4	0.2	0.2	0.8	0.8	0.3	0.8
Kassel U	11.4	0.8	0.6	0.1		0.7	0.3	0.5	4.3		0.4	2.2	0.1	1.5
Hannover MedH	10.3		1.7	6.7					0.2	0.2	1.5			
Chemnitz TU	10.3	0.2	0.1				0.3	0.9	4.7		0.3	0.4		3.5
Lübeck U	9.6		1.5	6.2					0.9		1.0			
Kaiserslautern TU	9.5		0.3	1.6		0.3	0.8	0.0	1.3		3.9	1.0	0.1	0.2
Cottbus TU	9.4					1.8	0.1	1.4	0.3	0.6	1.0	1.9	1.6	0.6
Hohenheim U	9.3	0.1	1.5			1.2		0.1	0.1	0.7		2.4	1.7	1.6
Paderborn U	8.4						0.3	0.5	5.0	0.0	1.0	0.1	1.1	0.3
Wuppertal U	7.7		0.0			0.0	3.8	0.4	1.1	0.1	0.6	0.6	0.3	0.7
Regensburg U	7.6		2.2	2.0		0.0	0.5		1.7	0.1	0.3	0.0		0.7

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Higher education institution	Total	HUM	BIO	MED	AST	GEO	LEB	ENE	INF	ASR	MAT	RSM	ENV	OTH
Clausthal TU	6.5				0.1	0.6	0.2	0.6	0.2		0.3	2.9	0.9	0.8
Siegen U	5.6			0.0	0.3	0.5	2.0	0.1	1.8	0.1	0.5	0.1		0.3
Oldenburg U	4.9		0.0			1.3	0.0	0.4	0.7	0.2		1.6		0.6
Augsburg U	4.7	0.2						0.3	0.3		3.7	0.2		
Aachen FH	4.4		0.0					0.6				0.6	0.0	3.2
Zittau-Görlitz H	4.4		0.1					1.9	0.4			0.0		1.9
Munich UdBW	4.2				0.4	0.3			0.1	2.5		0.4	0.1	0.4
Münster FH	3.4			0.0					0.4		0.2	0.1		2.7
Osnabrück U	3.4		0.9	0.3		0.8			0.5	0.0	0.5	0.4		0.0
Lüneburg U	3.2					0.2		0.4	0.3		0.2	1.3	0.7	0.3
Anhalt H	2.9		0.0									0.2		2.7
Constance U	2.9		0.4	0.1			0.0	1.0	0.1		1.1			0.1
Aalen H	2.8										0.7		1.0	1.1
Zwickau FH	2.8							0.5	0.2					2.1
Erfurt FH	2.5											0.1		2.5
Oldenburg FH	2.3	0.0				1.0						0.2		1.2
Bremen H	2.3			0.1		0.3						0.2	0.3	1.4
Wismar HTWG	2.2					0.4							0.3	1.5
Hannover TiHo	2.1	0.2	1.4	0.3									0.1	0.1
Osnabrück FH	2.0			0.6					0.1			0.2		1.1
Hamburg HAW	2.0	0.1						0.2			0.0			1.7
Total reporting sample[1)]	**1,431.2**	**10.8**	**221.7**	**239.1**	**26.9**	**98.5**	**142.5**	**83.9**	**172.3**	**49.9**	**99.6**	**101.4**	**48.8**	**135.8**
Other HEIs	**70.0**	**2.3**	**1.9**	**0.8**	**0.0**	**2.9**	**1.7**	**2.6**	**5.0**	**1.2**	**1.2**	**4.2**	**2.7**	**43.4**
HEIs overall	**1,501.2**	**13.1**	**223.6**	**239.9**	**26.9**	**101.3**	**144.2**	**86.5**	**177.3**	**51.1**	**100.8**	**105.6**	**51.6**	**179.1**
Based on: No. of HEIs	**190**	**45**	**70**	**57**	**25**	**72**	**59**	**72**	**88**	**56**	**68**	**86**	**65**	**174**

Notes:

HUM: Humanities and social sciences
BIO: Biotechnology
MED: R&D in the health sector
AST: Astronomy und astrophysics
GEO: Geosciences
LEB: Large-scale equipment for basic research
ENE: Energy research and technology
INF: Information technology
ASR: Aeronautical and space research
MAT: Materials research, physical and chemical technologies
RSM: Regional sustainability, structural engineering and mobility
ENV: Cleaner environmental technology and sustainable production
OTH: Other funding areas

[1)] Only HEIs which received more than 2 million euros from 2005 to 2007 as part of the federal government's direct R&D project funding.

Data basis and source:
Federal Ministry of Education and Research (BMBF): Direct R&D project funding by the federal government 2005 to 2007 (project database PROFI).
Calculations by the DFG.

Table A-21:
Direct R&D project funding by the federal government 2005 to 2007 by non-university reserach institution per funding area (in millions of euros)

Institution	Main location	Total	HUM	BIO	MED	AST	GEO	LEB	ENE	INF	ASR	MAT	RSM	ENV	OTH
ACCESS	Aachen	4.6							0.3	0.3	2.1	1.9			
AMO	Aachen	2.6								1.6		1.0		0.0	
FhI for Laser Technology (ILT)	Aachen	6.6			0.2					1.0	1.3	3.4		0.7	
FhI for Molecular Biology and Applied Ecology (IME)	Aachen	3.7		2.3								0.3	0.8		0.3
FhI for Production Technology (IPT)	Aachen	5.4								5.1					0.2
Research Institute for Operations Management (FIR)	Aachen	4.1								3.1			0.1	0.2	0.8
Federal Institute for Materials Research and Testing (BAM)	Berlin	3.3					0.1		1.8		0.4	0.1	0.6	0.3	0.1
Ferdinand-Braun-Institute for Hyperfrequency Technology (FBH)	Berlin	8.3								4.7		2.3			1.3
FhI for Computer Architecture and Software Technology (FIRST)	Berlin	6.9			0.3					6.5	0.1				
FhI for Open Communication Systems (FOKUS)	Berlin	3.7								3.7					
FhI for Production Systems and Design Technology (IPK)	Berlin	2.7								2.1				0.1	0.5
FhI for Reliability and Microintegration (IZM)	Berlin	18.6							0.7	15.4	0.2	1.2		0.4	0.7
FhI for Software and Systems Engineering (ISST)	Berlin	4.0					0.4			3.1			0.4		
FhI for Telecommunications, Heinrich Hertz Institute (HHI)	Berlin	11.7								11.7		0.0			
German Institute of Urban Affairs (Difu)	Berlin	2.3			0.1								2.0		0.2
German Rheumatism Research Centre (DRFZ)	Berlin	2.1		0.8	1.3										
Helmholtz Centre Berlin (HZB)	Berlin	5.9						1.1	3.6	0.6	0.3	0.2		0.1	
Leibniz Institut for Molecular Pharmacology (FMP)	Berlin	2.6		0.4	0.3										1.9
Leibniz Institute of Freshwater Ecology and Inland Fisheries (IGB)	Berlin	2.3					0.3						1.1		0.8
Max Born Institute for Nonlinear Optics and Short Pulse Spectroscopy (MBI)	Berlin	3.0						2.0				1.0			
Max Delbrück Center for Molecular Medicine (MDC)	Berlin	11.9		6.0	1.1										4.8
MPI for Molecular Genetics	Berlin	15.6		15.4	0.2										
Robert Koch-Institute (RKI)	Berlin	2.4		0.6	1.8										0.0
Zuse Institute Berlin (ZIB)	Berlin	3.9		0.6				0.2		3.0		0.0	0.0	0.1	
Reserach Centre Borstel (FZB)	Borstel	2.1		0.7	0.7							0.6			0.1
Centre for Tropical Marine Ecology (ZMT)	Bremen	2.4					2.4								
FhI for Manufacturing Technology and Applied Materials Research (IFAM)	Bremen	4.3		0.1			0.1			0.8	0.2	1.2	0.4	0.5	1.1
FhI for Medical Image Computing (MEVIS)	Bremen	2.2			0.9					1.2		0.2			
Alfred Wegener Institute for Polar and Marine Research (AWI)	Bremerhaven	10.0		0.1			7.7		1.0	0.8	0.3				
FhI for Surface Engineering and Thin Films (IST)	Brunswick	4.4							0.1	1.2		3.1			
FhI for Wood Research (WKI)	Brunswick	2.1		0.4										1.6	0.2
Helmholtz Centre for Infection Research (HZI)	Brunswick	20.4		7.9	12.1								0.2		0.3
Johann Heinrich von Thünen-Institute (vTI)	Brunswick	6.0	0.4	0.8			0.5		0.1		0.0		0.1	1.3	2.8
Julius Kühn-Institute (JKI)	Brunswick	6.1	0.1	2.8											3.2
Physikalisch-Technische Bundesanstalt (PTB)	Brunswick	2.2			0.5					0.9		0.8			

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Institution	Main location	Total	HUM	BIO	MED	AST	GEO	LEB	ENE	INF	ASR	MAT	RSM	ENV	OTH
FhI for Machine Tools and Forming Technology (IWU)	Chemnitz	3.3			0.0					2.3		0.2		0.2	0.6
Saxon Textile Research Institute	Chemnitz	3.2								0.1			0.4	0.7	2.0
German Aerospace Centre (DLR)	Cologne	43.0		0.8	0.3		2.6		9.3	2.5	16.3	0.8	7.2	3.1	0.1
Hochschulbibliothekszentrum North Rhine-Westfalia	Cologne	2.2								2.2					
MPI for Plant Breeding Research	Cologne	2.7		2.5											0.3
Centre for Graphic Data Processing	Darmstadt	2.6					0.3			2.2					0.0
FhI for Computer Graphics Research (IGD)	Darmstadt	6.5								6.0					0.5
Helmholtz Centre for Heavy Ion Research (GSI)	Darmstadt	7.5						5.1	1.7	0.7					
Institute for Textile and Process Engineering (ITV)	Denkendorf	2.9		0.3						0.4		1.0	0.0	1.2	
Federal Environment Agency (UBA)	Dessau	2.0			0.5								1.3	0.2	
FhI for Material Flow and Logistics (IML)	Dortmund	2.1							0.1	1.0	0.1		0.3	0.1	0.4
FhI for Ceramic Technologies and Systems (IKTS)	Dresden	3.1					0.1		0.6	0.3		1.9			0.2
FhI for Electron Beam and Plasma Technology (FEP)	Dresden	2.1							0.3			1.2		0.2	0.4
FhI for Material and Beam Technology (IWS)	Dresden	3.1								2.2		0.4			0.4
FhI for Photonic Microsystems (IPMS)	Dresden	7.0								6.5		0.5			
Institute of Air Handling and Refrigeration	Dresden	2.1							1.7	0.2					0.2
Leibniz Institute of Polymer Research (IPF)	Dresden	4.2							0.2	0.1		2.8		0.7	0.4
MPI for Molecular Cell Biology and Genetics	Dresden	5.1		2.8								1.0			1.4
Research Centre Dresden-Rossendorf (FZD)	Dresden	6.3						0.9	3.3			0.8	0.2	0.2	0.9
Research Data Centre of the Federal Statistical Office and the Statistical Offices of the Länder	Düsseldorf	3.3	3.2												0.0
Fachinformationszentrum Karlsruhe (FIZ KA)	Eggenstein-Leopoldshafen	2.4								2.4					
Research Centre Karlsruhe (FZK)	Eggenstein-Leopoldshafen	24.7		0.4			0.0	6.5	1.9	3.8	0.3	1.4	5.6	1.5	3.4
Institute for Solar Energy Research (ISFH)	Emmerthal	7.0							7.0						
FhI for Integrated Circuits (IIS)	Erlangen	7.0			0.1					5.3	1.5		0.1		
FhI for Integrated Systems and Device Technology (IISB)	Erlangen	2.3								2.0	0.3				
German Institute for International Educational Research (DIPF)	Frankfurt	3.2													3.2
German National Library	Frankfurt	2.8								2.8					
Innovations for High Performance Microelectronics (IHP)	Frankfurt	6.2		0.4					0.1	5.6	0.2				
Institute for Biomedical Research, Georg-Speyer-Haus	Frankfurt	2.5		2.1	0.4										
Institute for Social-Ecological Research (ISOE)	Frankfurt	3.9											3.8	0.1	
FhI for Applied Solid State Physics (IAF)	Freiburg	3.7								3.2		0.5			
FhI for Mechanics of Materials (IWM)	Freiburg	7.4			0.0				1.5	2.6		1.8	0.1	0.3	1.0
FhI for Physical Measurement Techniques (IPM)	Freiburg	2.8		0.4		0.4			0.1	0.5	0.1	1.0	0.1		0.2
FhI for Solar Energy Systems (ISE)	Freiburg	33.7							33.3	0.3		0.1	0.0		
Institute for Applied Ecology	Freiburg	3.5					0.1		0.1			0.0	3.1	0.2	
Bavarian Regional Office for Agriculture	Freising	2.9	0.1	0.7					0.2					0.4	1.6

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Institution	Main location	Total	HUM	BIO	MED	AST	GEO	LEB	ENE	INF	ASR	MAT	RSM	ENV	OTH
MPI for Extraterrestrial Physics	Garching	14.7				12.3		0.2		0.1	2.0				
Leibniz Institute of Plant Genetics and Crop Plant Research (IPK)	Gatersleben	9.1		8.1	0.2										0.8
Research Centre Geesthacht (GKSS)	Geesthacht	8.3		0.6			2.2	0.9			0.3	3.3	0.2	0.9	
MPI for Biophysical Chemistry, Karl Friedrich Bonhoeffer Institute	Göttingen	2.3		1.4	0.6			0.0				0.3			
Sociological Research Institute (SOFI)	Göttingen	2.0	1.1							0.2					0.7
Friedrich Loeffler-Institute (FLI)	Greifswald	5.1	4.4		0.7										
Bernhard Nocht Institute for Tropical Medicine (BNI)	Hamburg	2.4		1.8	0.4										0.1
German Electron Synchrotron (DESY)	Hamburg	2.9						0.4		2.5					
MPI for Meteorology	Hamburg	2.6					1.5			0.9			0.2		
Federal Institute for Geosciences and Natural Resources (BGR)	Hannover	11.3					1.7		6.5				2.7	0.3	
Laser Centre Hannover (LZH)	Hannover	4.4								1.4		2.9		0.1	
Leibniz Institute for Applied Geophysics (LIAG)	Hannover	3.9					0.0		2.9				0.6	0.3	
European Molecular Biology Laboratory (EMBL)	Heidelberg	6.8		5.2				1.4				0.1			
German Cancer Research Centre (DKFZ)	Heidelberg	26.8		21.9	3.9							0.9			0.1
MPI for Astronomy	Heidelberg	5.0				4.9		0.0							
Institute for Bioprocessing and Analytical Measurement Techniques	Heilbad Heiligenstadt	2.3		0.1	0.0					0.6		0.9	0.3	0.2	0.2
FhI for Silicon Technology (ISIT)	Itzehoe	4.3		0.2						4.1					
FhI for Applied Optics and Precision Engineering (IOF)	Jena	6.2								0.9		5.2		0.0	0.1
Institute of Photonic Technology	Jena	6.4		0.0			0.1	0.1	0.9	1.5		3.2			0.6
Leibniz Institute for Age Research, Fritz Lipmann Institute (FLI)	Jena	3.4		3.2	0.0										0.2
Leibniz Institute for Natural Product Research and Infection Biology (HKI)	Jena	2.1		1.4	0.0		0.2			0.3					0.2
Thuringian Regional Office for Agriculture (TLL)	Jena	3.9	0.1												3.8
Research Centre Jülich (FZJ)	Jülich	47.7	0.4	1.5	4.4		1.8	2.3	17.0	7.1	0.6	9.9	0.8	1.7	0.3
FhI for Experimental Software Engineering (IESE)	Kaiserslautern	9.2								9.2					
FhI for Technical and Industrial Mathematics (ITWM)	Kaiserslautern	2.3		0.1				0.1		1.4		0.3	0.2	0.3	
German Research Centre for Artificial Intelligence (DFKI)	Kaiserslautern	25.0					0.6			22.9	0.1				1.4
Institute for Composite Materials (IVW)	Kaiserslautern	3.1								0.4	0.0	2.7			
German Technical and Scientific Association for Gas and Water (DVGW)	Karlsruhe	4.8											4.8		
FhI for Information and Data Processing (IITB)	Karlsruhe	6.8					0.5	0.0		1.1			5.0		0.3
FhI for Systems and Innovation Research (ISI)	Karlsruhe	3.9	0.1	0.2			0.3		0.4	1.8			0.2		0.8
Max Rubner-Institute	Karlsruhe	2.6	0.6	1.3	0.3					0.2					0.3
Research Centre Computer Science	Karlsruhe	4.4					0.0			3.7			0.4		0.2
FhI for Wind Energy and Energy System Technology (ISET)	Kassel	7.8							7.8						0.0
MPI for Solar System Research	Katlenburg-Lindau	18.9				18.8					0.1				
Leibniz Institute for Science and Mathematics Education (IPN)	Kiel	4.6													4.6
Leibniz Institute of Marine Sciences (IFM GEOMAR)	Kiel	10.2					9.7		0.3						0.3
Research and Development Centre at the Kiel University of Applied Sciences	Kiel	2.3							2.2	0.1					
Helmholtz Centre for Environmental Research (UFZ)	Leipzig	7.4		0.3			2.5					0.3	3.3	0.6	0.4

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Institution	Main location	Total	HUM	BIO	MED	AST	GEO	LEB	ENE	INF	ASR	MAT	RSM	ENV	OTH
FhI for Factory Operation and Automation (IFF)	Magdeburg	7.9		0.2						5.9	0.2			0.0	1.6
Institute for Automation and Communication (IFAK)	Magdeburg	3.5					0.7			0.9			1.9		0.0
Leibniz Institute for Neurobiology (IfN)	Magdeburg	2.1		0.4	1.0										0.8
MPI for Dynamics of Complex Technical Systems	Magdeburg	2.1		1.8					0.1			0.0			0.1
Institute for Microtechnology Mainz (IMM)	Mainz	2.3			0.0				0.0	1.7		0.5	0.0		
Central Institute of Mental Health (ZI)	Mannheim	10.0		1.6	8.4										
Leibniz Centre for Agricultural Landscape Research (ZALF)	Müncheberg	3.7		0.0			0.3						2.0	0.8	0.6
Fraunhofer Society, Headquarters (FhG)[1)]	Munich	5.3													5.3
German Youth Institute (DJI)	Munich	2.3			0.1										2.2
Institute for Socio-Scientific Research (ISF)	Munich	2.8								1.1					1.7
German Institute of Human Nutrition (DIfE)	Nuthetal	2.6		2.4											0.2
FhI for Environmental, Safety and Energy Technology (UMSICHT)	Oberhausen	6.2		0.2			0.2		2.3			0.5	0.4	1.5	1.1
German Research Centre for Environmental Health (HMGU)	Oberschleissheim	28.8	0.0	21.5	0.6			3.1	0.0				0.5	2.2	1.0
Oldenburg Research and Development Institute for Information Technology Tools and Systems (OFFIS)	Oldenburg	4.0								3.8					0.1
FhI for Chemical Technology (ICT)	Pfinztal	10.6		2.3					0.5	0.2		3.6	0.0	2.5	1.5
MPI of Biochemistry	Planegg	7.9		6.6	0.4							0.8			
Astrophysical Institute of Potsdam (AIP)	Potsdam	3.3				1.3		1.1		0.8					
FhI for Applied Polymer Research (IAP)	Potsdam	10.9			0.0				0.7	1.4		5.3		0.1	3.4
German Research Centre for Geosciences (GFZ)	Potsdam	13.1					5.3	0.2	5.5		0.8		1.2		
Leibniz Institute for Agricultural Engineering Potsdam-Bornim (ATB)	Potsdam	4.0							0.2	0.2			0.2	1.5	1.9
MPI for Gravitational Physics, Albert Einstein Institute	Potsdam	11.4				10.8				0.6					
MPI of Molecular Plant Physiology	Potsdam	5.2		5.2											
Potsdam Institute for Climate Impact Research (PIK)	Potsdam	2.7					2.2		0.0	0.1			0.3	0.1	
Natural and Medical Sciences Institute at the University of Tuebingen	Reutlingen	6.4		4.2	0.1					0.9		1.3			
Centre for Life Science Automation	Rostock	5.6													5.6
Institute Warnemünde at the HEI Wismar	Rostock	5.7					0.6		5.0		0.1				
Leibniz Institute for Baltic Sea Research Warnemünde (IOW)	Rostock	2.8					2.4		0.5						
Leibniz Institute for Catalysis (LIKAT)	Rostock	5.9		0.0						0.4		4.3			1.2
Thuringian Institute of Textile and Plastics Research	Rudolstadt	2.2								0.1		0.5		0.4	1.2
FhI for Non-Destructive Testing (IZFP)	Saarbrücken	6.5					0.4		1.2	0.9	0.2	0.5	1.9	1.3	0.2
MPI for Informatics	Saarbrücken	5.5		0.6						4.9					
FhI for Algorithms and Scientific Computing (SCAI)	Sankt Augustin	2.1					0.8			1.1			0.2		
FhI for Applied Information Technology (FIT)	Sankt Augustin	3.7								3.7					
FhI for Intelligent Analysis and Information Systems (IAIS)	Sankt Augustin	3.5								3.0			0.4		0.0
FhI for Biomedical Engineering (IBMT)	St. Ingbert	6.4		2.4	0.9					1.5		0.8		0.0	0.8
Centre for Solar Energy and Hydrogen Research (ZSW)	Stuttgart	11.1							10.0	0.1	0.4	0.2			0.4
FhI for Building Physics (IBP)	Stuttgart	4.7							4.2				0.2	0.2	0.2
FhI for Industrial Engineering (IAO)	Stuttgart	9.1		1.3						5.8		0.0	0.1	0.7	1.1
FhI for Interfacial Engineering and Biotechnology (IGB)	Stuttgart	7.1		1.6						0.3		2.6	2.6		

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Institution	Main location	Total	HUM	BIO	MED	AST	GEO	LEB	ENE	INF	ASR	MAT	RSM	ENV	OTH
FhI for Manufacturing Engineering and Automation (IPA)	Stuttgart	6.7		0.3			0.6		0.3	3.0		0.1	0.6	0.5	1.3
Institute for Microelectronics Stuttgart (IMS)	Stuttgart	6.9								6.9	0.0				
MPI for Solid State Research	Stuttgart	5.8						0.0	0.3	2.8		2.7			
State Capital Stuttgart	Stuttgart	2.0							1.6				0.4		
Steinbeis Foundation (StW)	Stuttgart	3.1		0.0					1.1	0.9	0.4	0.0		0.3	0.4
Fraunhofer Research Institution Polymeric Materials and Composites (PYCO)	Teltow	2.3								0.7	0.5	0.5		0.1	0.6
Offshore Wind Energy Foundation	Varel	5.0							5.0						
Federal Statistical Office (DESTATIS)	Wiesbaden	2.3	2.3												
Wuppertal Institute for Climate, Environment and Energy	Wuppertal	2.2		0.1			0.1		0.2				0.8	1.0	
Bavarian Centre for Applied Energy Research (ZAE Bayern)	Würzburg	6.5							6.0	0.2		0.3			0.1
FhI for Silicate Research (ISC)	Würzburg	7.2							1.3	0.3		5.2	0.4		
Total reporting sample[2)]		**1,019.0**	**13.0**	**148.8**	**42.7**	**48.5**	**49.6**	**25.7**	**153.1**	**236.7**	**29.6**	**92.6**	**60.8**	**31.6**	**86.4**
Other institutions		**306.1**	**11.7**	**28.8**	**12.2**	**6.2**	**19.7**	**3.2**	**18.8**	**32.2**	**2.2**	**19.6**	**35.0**	**25.2**	**91.3**
Institutions overall		**1,325.2**	**24.7**	**177.7**	**54.9**	**54.7**	**69.2**	**28.9**	**171.9**	**268.9**	**31.7**	**112.2**	**95.8**	**56.8**	**177.7**
Based on: No. of institutions		**980**	**71**	**134**	**108**	**12**	**111**	**31**	**119**	**190**	**41**	**117**	**200**	**129**	**339**

Notes:

HUM: Humanities and social sciences
BIO: Biotechnology
MED: R&D in the health sector
AST: Astronomy und astrophysics
GEO: Geosciences
LEB: Large-scale equipment for basic research
ENE: Energy research and technology
INF: Information technology
ASR: Aeronautical and space research
MAT: Materials research, physical and chemical technologies
RSM: Regional sustainability, structural engineering and mobility
ENV: Cleaner environmental technology and sustainable production
OTH: Other funding areas

In this report, the term „non-university research institution" refers to the institutes of the research organisations FhS, HGF, MPS and WGL as well as other institutions such as hospitals, state research facilities or AiF institutes, excluding industry and commercial companies.

[1)] The funds reported here mainly involve funding for activities by the FhS Headquarters which are suportive of R&D projects run by the Fraunhofer Institutes (e.g. support for company spin-offs).

[2)] Only HEIs which received more than 2 million euros from 2005 to 2007 as part of the federal government's direct R&D project funding.

Data basis and source:
Federal Ministry of Education and Research (BMBF): Direct R&D project funding by the federal government 2005 to 2007 (project database PROFI).
Calculations by the DFG.

Table A-22:
R&D funding by the federal government in the programmes IGF and PRO INNO 2005 to 2007 by HEI

Higher education institution	Total	IGF	PRO INNO II
Aachen TH	21.2	19.9	1.3
Munich TU	13.2	12.8	0.5
Dresden TU	13.1	9.4	3.7
Stuttgart U	9.2	7.5	1.7
Darmstadt TU	7.5	7.0	0.5
Hannover U	7.2	6.3	0.9
Karlsruhe TH	5.7	3.5	2.2
Chemnitz TU	5.6	3.9	1.7
Brunswick TU	5.1	4.4	0.7
Clausthal TU	4.4	4.0	0.4
Freiberg TU	4.1	3.6	0.5
Erlangen-Nuremberg U	4.0	3.5	0.5
Berlin TU	3.7	2.8	0.8
Magdeburg U	3.5	2.6	0.9
Paderborn U	3.2	3.2	
Duisburg-Essen U	3.1	3.0	0.2
Dortmund TU	2.9	2.9	0.0
Kassel U	2.5	2.5	0.0
Hamburg-Harburg TU	2.3	1.9	0.5
Hohenheim U	2.1	2.0	0.1
Ilmenau TU	2.0	1.5	0.5
Kaiserslautern TU	1.8	1.7	0.1
Bochum U	1.8	1.6	0.2
Freiburg U	1.7	1.0	0.7
Weimar U	1.6	0.9	0.7
Rostock U	1.5	0.9	0.6
Bremen U	1.4	1.0	0.4
Berlin HU	1.4	0.1	1.3
Jena U	1.3	0.6	0.7
Hamburg U	1.0	1.0	0.1
Anhalt H	0.9	0.3	0.6
Munich UdBW	0.9	0.7	0.2
Leipzig U	0.7	0.4	0.3
Oldenburg U	0.7	0.6	0.1
Münster U	0.7	0.6	0.1
Halle-Wittenberg U	0.6	0.3	0.3
Ostwestfalen-Lippe H	0.6	0.4	0.3
Dresden HTW	0.6	0.5	0.1
Zwickau FH	0.6		0.6
Göttingen U	0.6	0.5	0.1
Gelsenkirchen FH	0.6		0.6
Wildau TFH	0.6		0.6
Jena FH	0.6		0.6
Cottbus TU	0.5	0.4	0.2
Total reporting sample[1)]	**148.5**	**121.5**	**27.0**
Other HEIs	**15.7**	**4.8**	**10.9**
HEIs overall	**164.2**	**126.3**	**37.9**
Based on: No. of HEIs	**131**	**82**	**117**

[1)] Only HEIs which received more than € 0.5 million during the specified period in the context of the Federal Ministry of Economics and Technology's (BMWi) programmes IGF and PRO INNO II, which are administered by the German Federation of Industrial Cooperative Research Associations (AiF).

Data basis and source:
Federation of Industrial Cooperative Research Associations (AiF): Funding for the promotion of innovation competence in medium-sized enterprises (PRO INNO II) and for collaborative industrial research (IGF) 2005 to 2007.
Calculations by the DFG.

Table A-23:
R&D funding in the Sixth EU Framework Programme by HEI per funding area (in millions of euros)

Higher education institution	Total	Citizens	Health	Food	Environ-ment	Nano MatPro	Energy and Transport	Info-tech	Aero-nautics and space	Other funding areas
Stuttgart U	54.3		1.8	0.4	3.4	6.1	9.5	17.2	4.0	11.8
Aachen TH	43.1		2.0	0.2	2.0	8.9	4.9	14.9	3.3	6.9
Munich LMU	42.3	0.9	19.2	5.1	0.8	2.0	0.7	4.6		9.0
Munich TU	41.1		7.3	2.7	0.9	5.7	1.3	9.2	3.1	11.0
Karlsruhe TH	36.8		0.3		1.2	3.8	1.7	19.5	6.1	4.1
Heidelberg U	36.5	0.1	14.9	0.3	2.2	1.7	0.2	2.7		14.3
Tübingen U	34.4	0.2	16.6	0.4	2.3	1.9		2.8		10.3
Freiburg U	27.2		10.9		1.4	1.6		7.9	0.2	5.4
Berlin TU	25.7		0.4	1.1	1.4	1.8	3.6	10.8	2.2	4.4
Dresden TU	24.5	0.0	4.6		0.6	0.3	1.7	11.4	1.6	4.3
Frankfurt/Main U	24.1	0.4	10.4	0.3	1.4	1.0	0.2	2.0		8.4
Berlin FU	22.0	2.4	7.5	1.5	1.5	0.9	1.0	2.2		5.1
Bonn U	20.3	0.1	6.3	2.7	1.4	0.2		2.1	0.1	7.2
Hannover U	19.9	0.2	0.2	0.2	1.2	3.2	0.4	7.8	2.1	4.4
Bochum U	19.2		4.4	0.2		2.5		5.3		6.9
Bremen U	18.7	1.3		3.7	3.9	1.2		6.0	0.9	1.7
Berlin HU	18.1	0.2	6.8	1.2	0.9	2.0		0.9		6.1
Hamburg U	18.0	0.7	4.2		1.9	1.7	0.1	2.0	0.2	7.1
Mainz U	17.7	0.4	3.4	1.3	0.3	2.6		2.0		7.8
Göttingen U	17.7	0.0	6.7	1.1	1.8	0.2		2.9		5.1
Cologne U	17.7	0.4	8.9		0.3	0.5		3.9		3.8
Münster U	17.1	0.3	5.8	0.1		2.6		3.6		4.6
Darmstadt TU	16.0	0.5	0.7			3.5	0.4	5.8	2.3	2.8
Saarbrücken U	15.5		3.9			4.2		4.9	1.2	1.4
Erlangen-Nuremberg U	15.3		4.6	0.6	0.5	1.2	0.9	3.0	0.6	3.9
Kassel U	14.0	0.2	0.5	1.3	1.7	1.4	0.2	6.0		2.6
Ulm U	13.2		5.5	0.1		1.9		2.9		2.8
Würzburg U	12.9	0.1	4.5			1.3	2.1	3.4		1.6
Jena U	12.0	0.1	1.6	1.2	0.5	1.6		1.2		5.8
Duisburg-Essen U	11.4	0.4	1.7		0.6	0.5	0.3	4.0		3.8
Giessen U	11.0	0.4	5.8	0.0	0.1	0.5	0.1	0.4		3.7
Hannover MedH	10.8		9.1			0.6	0.5			0.7
Brunswick TU	9.6		1.2		0.6	0.6	0.6	3.1	1.3	2.1
Marburg U	9.5	0.3	5.4	0.2	0.5	0.6	0.3	0.3		2.0
Kiel U	9.5	0.1	2.3	0.0	0.3	0.2	0.2	2.1		4.4
Paderborn U	9.1					0.0	1.1	6.1	0.5	1.3
Düsseldorf U	8.9	0.2	2.8	0.3		0.7		2.2		2.7
Lübeck U	8.5		5.9			0.2		1.4		1.1
Bielefeld U	8.5	2.5	0.2	1.0	0.3			2.5		2.0
Hamburg-Harburg TU	7.6				1.4		2.3	1.1	1.8	1.0
Bayreuth U	7.5	0.4	0.2	0.3	0.7	0.3		0.8	0.4	4.4
Leipzig U	7.1		0.3	0.2		2.5		0.3		3.8
Regensburg U	6.9		3.3	0.1	0.0			1.5		2.1
Kaiserslautern TU	6.7		1.8	0.3		1.0	0.2	1.3		2.3
Rostock U	6.7	0.1	2.4	0.2		0.6	0.8			2.6
Dortmund TU	6.5	0.8			0.1	2.7	0.4	0.9		1.6
Osnabrück U	5.9	1.3			3.0	0.2		0.8		0.6
Oldenburg U	5.7	0.6			0.5	0.9	0.1	2.1	0.7	0.8
Constance U	5.6	0.7	1.1	0.2		0.2	2.1	0.3		1.1
Mannheim U	5.6	1.8						0.4		3.4
Koblenz-Landau U	5.5							5.5		0.0
Ilmenau TU	4.7					2.2		1.9		0.6
Potsdam U	4.7		0.9		0.3	0.2		0.5		2.8
Magdeburg U	4.4			0.3		1.1	0.2	1.0	0.3	1.5
Hannover TiHo	4.4		0.3	1.7						2.4

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Higher education institution	Total	Citizens	Health	Food	Environ-ment	Nano MatPro	Energy and Transport	Info-tech	Aero-nautics and space	Other funding areas
Hohenheim U	3.8			1.2	0.9			0.9		0.9
Augsburg U	3.7					1.1		1.9		0.7
Chemnitz TU	3.6	0.2				0.2		3.0		0.1
Wuppertal U	3.5	0.0						0.1	0.5	2.9
Greifswald U	2.8		2.2		0.2			0.2		0.3
Clausthal TU	2.8					1.3	0.2	0.5	0.1	0.8
Halle-Wittenberg U	2.7		1.3	0.5	0.2					0.6
Saarbrücken HTW	2.4							2.4		
Siegen U	2.4	0.2				0.1		1.6	0.0	0.4
Munich UdBW	2.2	0.1					0.6	0.4	1.2	
Total reporting sample[1)]	**917.5**	**18.5**	**212.0**	**32.4**	**43.2**	**85.8**	**38.7**	**220.2**	**34.8**	**232.0**
Other HEIs	**30.4**	**1.0**	**0.5**	**0.4**	**2.2**	**4.1**	**4.3**	**8.5**	**0.3**	**9.2**
HEIs overall	**947.9**	**19.5**	**212.4**	**32.8**	**45.4**	**89.8**	**43.0**	**228.6**	**35.1**	**241.2**
Based on: No. of HEIs	**125**	**45**	**49**	**38**	**47**	**63**	**45**	**78**	**27**	**97**

[1)] Only HEIs which received more than two million euros in the EU's Sixth Framework Programme.

Data basis and source:
EU Office of the BMBF: German participations in the Sixth EU Framework Programme from 2002 (project data as of 02.06.2008).
Calculations by the DFG.

Table A-24:
R&D funding in the Sixth EU Framework Programme by non-university research institution per funding area (in millions of euros)

Institution	Main location	Total	Citizens	Health	Food	Environ-ment	Nano MatPro	Energy and Transport	Info-tech	Aeronau-tics and space	Other funding areas
AMO	Aachen	2.0					0.7		1.3		
FhI for Laser Technology (ILT)	Aachen	2.5					0.5		1.5	0.4	0.2
FhI for Molecular Biology and Applied Ecology (IME)	Aachen	4.0		3.9		0.0					
FhI for Production Technology (IPT)	Aachen	4.3					2.8				1.6
Institute for Interactive Materials Research (DWI)	Aachen	2.1					1.7				0.4
Research Institute for Operations Management (FIR)	Aachen	2.3					0.5		1.8		0.1
Federal Highway Research Institute (BASt)	Bergisch Gladbach	5.0						4.0	1.0		0.1
Ecologic Institute	Berlin	2.4	0.3			0.4				0.0	1.6
Federal Institute for Materials Research and Testing (BAM)	Berlin	6.5				0.4	1.6	2.3	0.4	0.6	1.3
Federal Institute for Risk Assessment (BfR)	Berlin	2.3		0.3	2.0						
FhI for Computer Architecture and Software Technology (FIRST)	Berlin	3.7		0.3					1.7		1.7
FhI for Open Communication Systems (FOKUS)	Berlin	11.7							10.5	0.4	0.9
FhI for Production Systems and Design Technology (IPK)	Berlin	5.7					2.3	0.2	2.6		0.6
FhI for Reliability and Microintegration (IZM)	Berlin	5.0					0.7		3.9	0.1	0.3
FhI for Telecommunications, Heinrich Hertz Institute (HHI)	Berlin	9.9					1.3		8.6		
Fritz Haber Institute of the Max Planck Society	Berlin	3.8					2.2				1.6
German Institute for Economic Research (DIW)	Berlin	2.6	0.7			0.2		0.5			1.2
German Rheumatism Research Centre (DRFZ)	Berlin	2.7		2.2							0.5
Helmholtz Centre Berlin (HZB)	Berlin	9.1						1.8			7.3
Max Born Institute for Nonlinear Optics and Short Pulse Spectroscopy (MBI)	Berlin	3.5					0.5		0.5		2.5
Max Delbrück Centre for Molecular Medicine (MDC)	Berlin	12.5		10.7							1.8
MPI for Infection Biology	Berlin	6.3		5.2					0.2		0.9
MPI for Molecular Genetics	Berlin	10.1		7.9		0.2					2.0
Robert Koch-Institute (RKI)	Berlin	3.4		2.0	0.7						0.8
Transport Technology Systems Network (FAV)	Berlin	3.3						2.8	0.6		
Zuse Institute Berlin (ZIB)	Berlin	2.7						0.3	2.3		0.1
MPI for Radio Astronomy	Bonn	3.2									3.2
FhI for Manufacturing Technology and Applied Materials Research (IFAM)	Bremen	2.6					1.8	0.1		0.3	0.5
Institute for Applied Systems Technology Bremen (ATB)	Bremen	2.0					0.8	0.3	0.4		0.5
Institute for Production und Logistics Bremen (BIBA)	Bremen	2.8					1.0		1.5		0.3
MPI for Marine Microbiology	Bremen	4.9				2.2					2.7
Alfred Wegener Institute for Polar and Marine Research (AWI)	Bremerhaven	8.3		0.1		5.4				0.5	2.2
Centre for Technology Transfer at the HEI Bremerhaven (ttz)	Bremerhaven	7.2			3.0	0.2		0.4			3.7

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Institution	Main location	Total	Citizens	Health	Food	Environment	Nano MatPro	Energy and Transport	Info-tech	Aeronautics and space	Other funding areas
Helmholtz Centre for Infection Research (HZI)	Brunswick	9.5		3.9	0.7	0.6	0.1				4.1
Johann Heinrich von Thünen-Institute (vTI)	Brunswick	3.0		0.3	0.2	0.8	0.4	0.4			0.9
Julius Kühn-Institute (JKI)	Brunswick	4.1		0.3	1.6	0.1	0.1	0.1			1.9
Physikalisch-Technische Bundesanstalt (PTB)	Brunswick	2.2					0.6		0.3		1.3
European Transonic Windtunnel (ETW)	Cologne	2.7								2.7	
German Aerospace Centre (DLR)	Cologne	76.8		0.5		4.7	3.8	6.6	10.6	43.7	6.9
MPI for Plant Breeding Research	Cologne	2.4		0.3	0.7						1.4
Society for Plant Safety and Reactor Safety (GRS)	Cologne	2.9									2.9
FhI for Computer Graphics Research (IGD)	Darmstadt	13.3					0.0		11.3	1.3	0.6
FhI for Secure Information Technology (SIT)	Darmstadt	3.9					0.1		3.8		
FhI for Structural Durability and System Reliability (LBF)	Darmstadt	4.2					2.7	1.5			
Helmholtz Centre for Heavy Ion Research (GSI)	Darmstadt	20.2									20.2
Institute for Textile and Process Engineering (ITV)	Denkendorf	3.5					2.4				1.1
Institute for Analytical Sciences (ISAS)	Dortmund	2.4		0.0			1.5		0.5		0.4
Leibniz Institute for Solid State and Materials Research (IFW)	Dresden	5.6					1.2	0.2	0.4		3.9
Leibniz Institute of Polymer Research (IPF)	Dresden	2.4		0.2			1.7				0.5
MPI of Molecular Cell Biology and Genetics	Dresden	9.6		8.8							0.8
Research Centre Dresden-Rossendorf (FZD)	Dresden	7.3		0.5			0.7				6.1
Association of German Engineers (VDI)	Düsseldorf	3.2					0.8	0.1	0.2		2.1
Research Centre Karlsruhe (FZK)	Eggenstein-Leopoldshafen	39.2	0.3	2.5	0.1	1.5	4.9	3.7	2.0	0.8	23.4
FhI for Integrated Circuits (IIS)	Erlangen	6.4		0.4			0.7		5.4		
FhI for Integrated Systems and Device Technology (IISB)	Erlangen	12.9					0.1	0.3	8.2		4.2
Society for Chemical Engineering and Biotechnology (DECHEMA)	Frankfurt	3.3		0.2		1.3	1.8				0.1
FhI for Applied Solid Physics (IAF)	Freiburg	2.2					0.2		1.9		0.1
FhI for Solar Energy Systems (ISE)	Freiburg	8.5						7.1	0.9		0.5
MPI of Immunobiology	Freiburg	2.4		1.0							1.4
Tumor Biology Centre	Freiburg	2.1		2.1							
FhI for Process Engineering and Packaging (IVV)	Freising	2.4			0.5		0.9				1.0
European Organisation for Astronomical Research in the Southern Hemisphere (ESO)	Garching	15.3									15.3
MPI for Plasma Physics	Garching	4.8					2.7				2.1
MPI of Quantum Optics	Garching	5.2							1.4		3.8
Research Centre Geesthacht (GKSS)	Geesthacht	6.1				0.6	2.0	1.1	0.1	0.5	1.8
Leibniz Institute for Primate Research (DPZ)	Göttingen	5.3		2.5							2.8
MPI for Biophysical Chemistry, Karl-Friedrich-Bonhoeffer-Institute	Göttingen	12.7		5.6			1.3				5.9
MPI of Experimental Medicine	Göttingen	5.1		4.8							0.3
Friedrich-Loeffler-Institute (FLI)	Greifswald	6.0		0.7	2.5	0.1	0.1	0.1			2.5
Bernhard Nocht Institute for Tropical Medicine (BNI)	Hamburg	3.8		1.0							2.8
Centre of Maritime Technologies (CMT)	Hamburg	2.0						1.8	0.1		0.1

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Institution	Main location	Total	Citizens	Health	Food	Environ-ment	Nano MatPro	Energy and Transport	Info-tech	Aeronau-tics and space	Other funding areas
German Electron Synchrotron (DESY)	Hamburg	15.6		0.0			0.3				15.2
Hamburg Ship Model Basin	Hamburg	4.1						3.0			1.1
MPI for Meteorology	Hamburg	3.5				2.8				0.4	0.2
FhI for Toxicology and Experimental Medicine (ITEM)	Hannover	2.2		1.4		0.4		0.1			0.2
Laser Centre Hannover (LZH)	Hannover	4.9					3.0	0.2	0.6	0.3	0.9
European Molecular Biology Laboratory (EMBL)	Heidelberg	64.1		35.0	0.7	0.2	0.3		1.9		26.1
German Cancer Research Centre (DKFZ)	Heidelberg	25.8		14.0	1.2						10.6
FhI for Silicon Technology (ISIT)	Itzehoe	6.0		0.6			1.5		3.8		
Institute of Photonic Technology	Jena	2.7					0.2	0.6	1.0	0.9	0.0
MPI for Biogeochemistry	Jena	5.7				3.7					2.0
Research Centre Jülich (FZJ)	Jülich	37.4		1.1		3.0	2.8	6.6	3.8	0.3	19.7
FhI for Experimental Software Engineering (IESE)	Kaiserslautern	2.8							2.3		0.5
German Research Centre for Artificial Intelligence (DFKI)	Kaiserslautern	16.9							16.9		
Institute for Composite Materials (IVW)	Kaiserslautern	2.8					0.8	1.2		0.8	
FhI for Information and Data Processing (IITB)	Karlsruhe	9.3					0.1	1.6	7.6		
FhI for Systems and Innovation Research (ISI)	Karlsruhe	6.0	0.7	0.1	0.2	0.9	1.1	0.9	0.3		1.8
Research Centre Computer Science	Karlsruhe	4.4					0.2		4.2		0.0
FhI for Wind Energy and System Technology (ISET)	Kassel	5.3						4.7			0.6
Leibniz Institute of Marine Sciences (IFM-GEOMAR)	Kiel	8.4		0.2		4.2				0.8	3.2
Paul-Ehrlich-Institute (PEI)	Langen	2.2		1.4	0.4		0.2				0.1
Helmholtz Centre for Environmental Research (UFZ)	Leipzig	16.9			0.2	9.6	0.2				6.8
FhI for Factory Operation and Automation (IFF)	Magdeburg	4.7					1.2		2.0	0.4	1.3
Institute for Microtechnology Mainz (IMM)	Mainz	6.3					3.1	1.9	1.0		0.4
MPI for Chemistry, Otto Hahn Institute	Mainz	4.0				3.1					0.9
MPI for Polymer Research	Mainz	4.9			0.3		1.6				3.0
Central Institute of Mental Health (ZI)	Mannheim	2.4		1.8							0.7
Centre for European Economic Research (ZEW)	Mannheim	2.2	0.2			0.2	0.0	0.1			1.6
Leibniz Institute for the Social Sciences (GESIS)	Mannheim	2.4	0.4								2.0
Centre for Innovation and Technology NRW (ZENIT)	Mülheim	2.5						0.0			2.5
Leibniz Centre for Agricultural Landscape Research (ZALF)	Müncheberg	3.9	0.1		0.0	3.2					0.7
Broadcast Technology Institute	Munich	3.3							3.3		
European Patent Office (EPA)	Munich	3.1		0.0					0.2		2.8
German Institute of Human Nutrition (DIfE)	Nuthetal	4.8		1.7	2.8						0.3
German Research Centre for Enviromental Health (HMGU)	Oberschleissheim	28.2		13.8	1.8	0.7	0.4				11.6
Oldenburg Research and Development Institute for Information Technology Tools and Systems (OFFIS)	Oldenburg	9.5						0.2	8.0	1.0	0.4
FhI for Chemical Technology (ICT)	Pfinztal	3.0					1.7	0.9			0.4
MPI of Biochemistry	Planegg	9.4		8.8							0.7
German Research Centre for Geosciences (GFZ)	Potsdam	11.3				0.9		7.7	0.9		1.8

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Institution	Main location	Total	Citizens	Health	Food	Environ-ment	Nano MatPro	Energy and Transport	Info-tech	Aeronau-tics and space	Other funding areas
MPI of Colloids and Interfaces	Potsdam	4.0		0.3			1.4		0.4		1.9
MPI of Molecular Plant Physiology	Potsdam	6.4		2.2	2.9						1.3
Potsdam Institute for Climate Impact Research (PIK)	Potsdam	4.4				3.4					1.0
Leibniz Institute for New Materials (INM)	Saarbrücken	2.9					2.0		0.8		0.1
MPI for Informatics	Saarbrücken	2.1							2.1		
FhI for Algorithms and Scientific Computing (SCAI)	Sankt Augustin	4.4							4.0		0.4
FhI for Applied Information Technology (FIT)	Sankt Augustin	10.1							10.0		0.1
FhI for Intelligent Analysis and Information Systems (IAIS)	Sankt Augustin	13.9					1.1		11.4		1.3
FhI for Biomedical Engineering (IBMT)	St. Ingbert	9.2		1.5			5.7		1.2		0.8
Centre for Solar Energy and Hydrogen Research (ZSW)	Stuttgart	3.6						3.6			0.1
FhI for Industrial Engineering (IAO)	Stuttgart	5.9					0.9	0.2	3.6		1.1
FhI for Interfacial Engineering and Biotechnology (IGB)	Stuttgart	2.5		0.3			0.6		0.0		1.6
FhI for Manufacturing Engineering and Automation (IPA)	Stuttgart	12.8		0.0			8.4	0.4	2.7		1.2
MPI for Metals Research	Stuttgart	2.3					0.9	0.3			1.1
MPI for Solid State Research	Stuttgart	4.3					2.8	0.6	0.4		0.6
Steinbeis Foundation (StW)	Stuttgart	7.6		0.9			1.3	0.9	1.0		3.4
MPI for Biological Cybernetics	Tübingen	2.6							2.0		0.5
MPI for Developmental Biology	Tübingen	6.4		5.7							0.7
FhI for Silicate Research (ISC)	Würzburg	5.3					2.1		2.0	0.4	0.8
Total reporting sample[1)]		**949.2**	**2.8**	**159.1**	**22.5**	**54.9**	**95.1**	**71.5**	**185.0**	**56.6**	**301.8**
Other institutions		**224.2**	**7.7**	**18.6**	**9.9**	**12.5**	**21.1**	**25.7**	**38.2**	**3.6**	**87.0**
Institutions overall		**1,173.4**	**10.5**	**177.6**	**32.4**	**67.4**	**116.2**	**97.2**	**223.2**	**60.2**	**388.7**
Based on: No. of institutions		**673**	**47**	**93**	**44**	**69**	**125**	**122**	**156**	**43**	**423**

Notes:
In this report, the term "non-university research institution" refers to the institutes of the research organisations FhS, HGF, MPS and WGL as well as other institutions such as hospitals, state research facilities or AiF institutes, excluding industry and commercial companies.

[1)] Only institutions which received more than two million euros in the Sixth EU Framework Programme.

Data basis and source:
EU Office of the BMBF: German participations in the Sixth EU Framework Programme from 2002 (project data as of 02.06.2008).
Calculations by the DFG.

Table A-25:
Research visits by AvH guest researchers 2003 to 2007 by HEI per subject area

Higher education institution	Total	HUM	SOC	BIO	MED	VAF	CHE	PHY	MAT	GEO	MIE	TPE	MSE	CSE	CEA
Munich LMU	250	80	29	22	15	5	36	37	11	14			1		
Berlin FU	209	110	12	8	6	4	34	24	7	3		1			
Berlin HU	209	84	29	13	13	3	14	22	19	8				4	
Heidelberg U	167	38	13	14	8		34	36	10	12	1	1			
Munich TU	167	1		14	9	5	56	39	12		2	6	3	19	1
Bonn U	152	39	19	11	5	3	17	35	10	9		1		2	1
Freiburg U	118	38	17	14	10	1	9	11	6	2	1			8	1
Göttingen U	117	24	6	5	9	10	37	14	3	4			5		
Tübingen U	117	53	7	11	10	2	11	5	4	9		1	2	2	
Cologne U	111	48	16	5	5		10	14	9	2		1	1		
Frankfurt/Main U	110	25	10	6	7		8	40	6	6				2	
Erlangen-Nuremberg U	104	7	3	1	11		28	23	6	7		8	4	6	
Bochum U	99	19		4	2		30	21	1	9	1	2	4	3	3
Aachen TH	91	2	1	2	2		34	11	3	2	5	8	13	7	1
Hamburg U	89	19	7	11	5	1	10	25	3	4				4	
Münster U	89	18	5	5	6		29	9	7	6		1	3		
Berlin TU	85	21	4	1	1		16	13	8	2	3	2	2	8	4
Stuttgart U	83	2	1	3			9	15	6	9	10	14	2	10	2
Bayreuth U	79	24	1	6		4	15	8	3	14		2		1	1
Darmstadt TU	75	2	1	2			8	15	8		10	5	14	10	
Würzburg U	74	11	3	12	7	1	20	13	4	3					
Karlsruhe TH	69	1		1	2	1	18	17	5	8		6	4	4	2
Mainz U	59	13	2	3	3		14	18	1	5					
Dresden TU	57	6	2	9			10	11	4	2	1	3	6	2	1
Hannover U	56	4		3	2		11	15	2	7	3	3	1	2	3
Marburg U	55	15	1	6	5		10	7	8	2		1			
Regensburg U	55	4	5	6	3		13	20	4						
Giessen U	54	3	11	4	5	5	4	9	10	3					
Bielefeld U	53	5	4	4			8	10	19			1		2	
Kiel U	50	2	7	8		2	11	4	4	8				3	1
Ulm U	50			3	3		13	19	2			2	3	5	
Leipzig U	49	18	4	4	2	1	11	5	3						1
Constance U	47	18	3	5			16	5							
Duisburg-Essen U	42	3	3	1	2		6	10	4		4		2	7	
Jena U	41	8	1	3	2		10	6	4	3			2	1	1
Saarbrücken U	41	10	3	3	3		9	3	4				1	5	
Düsseldorf U	34	5		2	4		7	12	3					1	
Brunswick TU	33			3		1	12	8		2	2	1			4
Kaiserslautern TU	33				1		6	11	4		2	3	3	3	
Potsdam U	33	7	1	2			3	6	3	6	1			3	1
Dortmund TU	31		1	3			11	8	3		1	2	2		
Halle-Wittenberg U	30	10	2	2		3	6	1	2	2		1		1	
Augsburg U	28	6					6	14	2						
Bremen U	28	1	1	1	2		4	1	3	9	2	1	1	2	
Hohenheim U	20		2	5	2	10						1			
Rostock U	20	2	1		1	1	8	4	1			1			1
Magdeburg U	19		2		4			2	7		2		1	1	
Osnabrück U	18	1	1	9	1			1	2	2			1		
Oldenburg U	17	3	2		1		2	3	1	3			1	1	
Wuppertal U	17	2					5	4	2					3	1
Chemnitz TU	16	1					9	2	2		2				
Clausthal TU	15						2	5	1	2	1		2	1	1
Hamburg-Harburg TU	14							1			1	7	3	1	1
Trier U	14	9	3						1	1					
Freiberg TU	13						3		1	3	2		2		2
Kassel U	13	1	1			3		2	3				1		2
Greifswald U	12	3	2	3	2		2								

>> Continued on next page

Higher education institution	Total	HUM	SOC	BIO	MED	VAF	CHE	PHY	MAT	GEO	MIE	TPE	MSE	CSE	CEA
Paderborn U	12	1					1	4	4		1	1			
Siegen U	11						4				2		2	3	
Mannheim U	10	2	5		1				2						
Frankfurt/Oder U	8	4	4												
Ilmenau TU	8							2	2			1	1	2	
Bremen JU	7		1	1			3					1		1	
Erfurt U	7	4	2						1						
Bamberg U	6	5	1												
Passau U	5	4							1						
Total reporting sample[1)]	**3,905**	**846**	**262**	**264**	**182**	**66**	**723**	**680**	**271**	**193**	**60**	**89**	**93**	**140**	**36**
Other HEIs	**50**	**16**	**4**	**3**	**1**	**4**	**2**	**2**	**0**	**0**	**5**	**4**	**2**	**5**	**2**
HEIs overall	**3,955**	**862**	**266**	**267**	**183**	**70**	**725**	**682**	**271**	**193**	**65**	**93**	**95**	**145**	**38**
Based on: No. of HEIs	**94**	**68**	**52**	**49**	**40**	**22**	**56**	**57**	**57**	**36**	**27**	**33**	**33**	**39**	**23**

Notes:

HUM: Humanities
SOC: Social and behavioural sciences
BIO: Biology
MED: Medicine
VAF: Veterinary medicine, agriculture and forestry
CHE: Chemistry
PHY: Physics
MAT: Mathematics
GEO: Geosciences
MIE: Mechanical and industrial engineering
TPE: Thermal and process engineering
MSE: Materials science and engineering
CSE: Computer science, system and electrical engineering
CEA: Construction engineering and architecture

[1)] Only HEIs which received at least five visits from AvH-funded guest researchers.

Data basis and source:
Alexander von Humboldt Foundation (AvH): Research visits by AvH guest researchers from 2003 to 2007.
Calculations by the DFG.

Table A-26:
DAAD-funded researchers from abroad 2005 to 2007 by HEI per subject area

Higher education institution	Total	HUM	SOC	BIO	MED	VAF	CHE	PHY	MAT	GEO	MEC	CSE	CEA
Berlin HU	176	55	37	15	5	25	4	12	12	7	3	1	
Berlin FU	173	82	40	17	2	7	1	5	11	8			
Kassel U	107	12	57	5	3	13	2	2			7	1	5
Göttingen U	93	16	15	12	6	29	8	2	2	3			
Leipzig U	90	49	10	2	3	10	8	4	1	1	1	1	
Munich LMU	90	38	16	1	11	2	9	4	1	8			
Tübingen U	83	29	10	10	9		8	7	2	6	1	1	
Berlin TU	75	9	7	1		3	5	6	8	2	18	9	7
Freiburg U	73	24	6	8	11	7	5	3		2	3	4	
Bonn U	71	30	7	8	1	11	4	1	4	4	1		
Heidelberg U	70	24	8	6	14	1	6	3		8			
Giessen U	66	11	13	7	5	14	3	8	1	4			
Cologne U	65	21	19	4	7		2	3	2	5	2		
Hohenheim U	60			5	3	43	4		1	2	2		
Bochum U	59	11	9		3		5	7	2	3	7	9	3
Dresden TU	58	2	3	2	1	7	6	7	3	3	18	3	3
Hamburg U	55	14	14	10	2	3	4	3	1	3	1		
Munich TU	55	1	1	7	1	12	3	6	4	3	8	3	6
Erlangen-Nuremberg U	54	11	6	2	4	1	10	6	2		6	6	
Frankfurt/Main U	54	15	12	5	3		3	7	2	5	1	1	
Jena U	52	10	5	7	3	2	8	6	3	5	1	2	
Münster U	52	17	8	10	4		6	2	1	4			
Hannover U	51	5	2	5	1	5	4	2	1	5	9	8	4
Potsdam U	50	7	13	4			7	8	7	4			
Aachen TH	49	1	1		2	2	4	7	1	3	19	6	3
Duisburg-Essen U	47	11	7		2		2	4	5		12	4	
Karlsruhe TH	47		2	2			6	5	3	9	13	3	4
Stuttgart U	45	4	2	1			4	8	2	4	11	3	6
Rostock U	40	2	2	4	1	13	8	1	5		4		
Halle-Wittenberg U	39	8	3	8		7	4	2	1	2	4		
Kiel U	39	1	9	7	2	8	1		2	6	1	1	1
Bremen U	37	6	14		1	2	2	3	2	2	3	2	
Darmstadt TU	37		5				3	1	1	4	13	5	5
Magdeburg U	37	2	7		3	1		6	5		9	4	
Mainz U	35	9	6	1	3	1	2	4	2	7			
Würzburg U	35	9	3	6	6	1	5	1	1	2		1	
Saarbrücken U	34	8	8	1			5	3	2		2	5	
Brunswick TU	32	3	1	1	2	2	5	2	3	2	7		4
Constance U	32	5	9	3	1		7	7					
Bielefeld U	31	8	7	5		1	2	1	4		1	2	
Marburg U	28	12	4	4	3		2	1		2			
Bayreuth U	27	7	2	2	1	4	4	2		1	3	1	
Dortmund TU	25	1	1	1		1	6	2	2		2	3	6
Kaiserslautern TU	25	1		1		1	4	4	10		3		1
Regensburg U	25	4	10	2	1	1	5	1	1				
Trier U	20	9	6			2			3				
Hamburg-Harburg TU	17						1	1	1		7	6	1
Ilmenau TU	9	1	1				1				3	3	
Frankfurt/Oder U	6	1	5										
Passau U	6		5	1									
Karlsruhe HTW	5				1		1			2	1		
Total reporting sample[1)]	**2,641**	**606**	**438**	**203**	**131**	**242**	**209**	**180**	**127**	**141**	**207**	**98**	**59**
Based on: No. of HEIs	**51**	**45**	**47**	**40**	**36**	**33**	**47**	**44**	**41**	**35**	**36**	**28**	**15**

Notes

HUM: Humanities
SOC: Social and behavioural sciences
BIO: Biology
MED: Medicine
VAF: Veterinary medicine, agriculture and forestry
CHE: Chemistry
PHY: Physics
MAT: Mathematics
GEO: Geosciences
MEC: Mechanical engineering
CSE: Computer science, system and electrical engineering
CEA: Construction engineering and architecture

[1)] For DAAD-funded researchers, subject-specific data was available for 51 HEIs, which had a total expenditure of at least one million euros per year according to the DAAD funding statement.

Data basis and source:
German Academic Exchange Service (DAAD): Researchers from abroad funded between 2005 and 2007.
Calculations by the DFG.

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> Deutsche Forschungsgemeinschaft (DFG): DFG awards 1996 to 2007, participation in Coordinated Programmes (Collaborative Research Centres, Research Units, DFG Research Centres, Graduate Schools and Clusters of Excellence) 2005 to 2007, DFG reviewers 2005 to 2007, and members of DFG Review Boards for the period 2008 to 2011.

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