Universities and their Role in German Research Landscape

DIES-Seminar „German-Iranian Cooperation in Research“
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The German Research Landscape
Facts I Structures I Financing

Departement of Chemistry, University of Marburg
Facts and Figures (2015)

More than 1,000 publicly funded research institutions

Research expenditures: 88.8 bn euros = 2.98% GDP

652,000 people in the R&D sector

Bilateral, European and multilateral cooperation with more than 155 countries
Research expenditures by sector in 2015 (%)

- Industry: 69%
- Universities: 17%
- Non-profit public and private institutions: 14%

Total: € 88.8 bn.

Source: Federal Statistical Office
Publicly financed research expenditures

Publicly financed research expenditures in Germany (in bn euros)

Source: Federal Statistical Office

+ 44%
Pillars of the German research sector

Non-university research institutes

Universities (HEIs)

Industrial research
Universities

Funding
- Federal states (Länder)
- German Research Foundation (DFG)
- Federal Ministry of Education and Research (BMBF)
- Other Federal Ministries
- European Commission
- Alexander von Humboldt-Stiftung (AvH)
- German Academic Exchange Service (DAAD)

Partners
- Universities of Applied Sciences
- Max Planck Society
- Helmholtz Association
- Fraunhofer
- Leibniz Association
- Industry
Universities

- Foundation of tomorrow’s science
- Based on the unity of research and teaching
- Generating knowledge and communicating new findings
- Providing all levels of academic education
Universities

- Research in all subjects and appropriate study programmes
- Academic education of physicians, pharmacists, judges and teachers
- Academic education in arts and music
Universities

- 105 universities
- Almost 250,000 international students and 29,000 international doctoral candidates
- Principle of uniting learning, instruction and research
**Universities**

<table>
<thead>
<tr>
<th>Universities</th>
<th>Universities of Applied Sciences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Programme levels</td>
<td>Bachelor  Master  Doctorate  Bachelor  Master</td>
</tr>
<tr>
<td>Fields of study</td>
<td>all</td>
</tr>
<tr>
<td>Fields of study</td>
<td>Engineering (75% of German engineers are educated at FH/HAW), business, social and health sciences</td>
</tr>
<tr>
<td>Degree programmes</td>
<td>theory-oriented, based on fundamental research, unity of teaching and research</td>
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<tr>
<td>Degree programmes</td>
<td>Application-oriented, based on applied research; include a practical semester (internship)</td>
</tr>
<tr>
<td>Requirement for professorship</td>
<td>Doctorate/PhD  Habilitation  Doctorate/PhD</td>
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<tr>
<td>Requirement for professorship</td>
<td>Min. three years industry experience  Doctorate/PhD Min. three years industry experience</td>
</tr>
<tr>
<td>Average number of teaching lessons per week</td>
<td>8-10  18</td>
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Universities

Universities (HEI)
- Excellence Strategy
- Higher Education Pact

Non-University Research Institutions
- Pact for Research and Innovation
Higher Education Pact 2020

- Federal and “Länder” govts. = additional funding for needs-based study programmes
- 2016-2023: 760,033 additional spaces for beginning students
- 22% overhead allowances for research projects
- Quality Pact for Teaching
Excellence Strategy

Federal- and state-funded research programme

- Duration: starting 2017 (open ended)
- Total funding volume: from 2018 on annually 533 m euros
- Focus: university research activities
- Cooperation with research institutions, universities of applied sciences and companies
Excellence Strategy: Funding structures

Excellence Universities

- Permanent support for universities with 2-3 Clusters of Excellence

Clusters of Excellence

- Project funding for internationally competitive areas of research
Excellence Strategy: Results
Excellence Strategy versus Higher Education Pact

**Excellence Strategy**
Volume of funding: 533 million €
Recipients: universities and non-university research institutions

**Higher Education Pact 2020**
Volume of funding: 3.5 bn € (2018)
Recipients: universities and universities of applied sciences (stately funded and private)
Non-university research institutions

- Federal Institutions
- Universities
- Länder Institutions
- Basic research
- Max Planck Society
- Academies
- Research Infrastructures
- Applied research
- Fraunhofer-Gesellschaft
- Helmholtz Association
- Leibniz Association
- Industry Research Associations (AiF)
- Companies/Industrial Research
- Networks and Clusters
- Public funding
- Private funding
The Big Four

<table>
<thead>
<tr>
<th>Institution</th>
<th>Institutes</th>
<th>Budget</th>
<th>Researchers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max Planck Society</td>
<td>84 institutes</td>
<td>2.3 bn euros</td>
<td>14,036</td>
</tr>
<tr>
<td>Helmholtz Association</td>
<td>18 research centres</td>
<td>4.4 bn euros</td>
<td>38,733 (staff in total)</td>
</tr>
<tr>
<td>Fraunhofer-Gesellschaft</td>
<td>69 institutes</td>
<td>2.1 bn euros</td>
<td>24,458 (staff in total)</td>
</tr>
<tr>
<td>Leibniz Association</td>
<td>88 institutes</td>
<td>1.8 bn euros</td>
<td>9,485</td>
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</table>
Universities

German Centres for Health Research (DZG)

- German Cancer Consortium
- German Centre for Cardiovascular Research
- German Center for Diabetes Research
- **German Center for Infection Research (DZIF)**
- **German Center for Lung Research (DZL)**
- German Center for Neurodegenerative Diseases
Websites and databases

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