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Helmholtz Association

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San Francisco • Destination Europe • 12-13 December 2013
POSITIVE RESEARCH FUNDING ENVIRONMENT

R&D budget reached €79.5 billion ($109.3 billion)

3% GDP in 2012

Government increased its R&D budget by 60% since 2005

Successful in attracting EU funding: e.g. 2nd place for ERC grants
RESEARCH LANDSCAPE

More than **800** public-funded research institutions:

- 392 higher education institutions (HEI)
- 257 institutes/centres within **4 non-university research organizations**
- 40 federal research institutions (e.g. Robert Koch Institute)
- 130 state (Länder) research institutes/centers

**Funding organizations:**

- German Research Foundation (**DFG**) – national research funding agency
- German Academic Exchange Service (**DAAD**) – individual scholarships
- **Alexander von Humboldt Foundation** - individual scholarships & prizes, alumni network

**Foundations:** Robert Bosch Stiftung; VolkswagenStiftung; Landesstiftung Baden-Württemberg; Bertelsmann-Stiftung
## NON-UNIVERSITY RESEARCH ORGANISATIONS

<table>
<thead>
<tr>
<th>Organisation</th>
<th>Budget (Billion €)</th>
<th>Staff (Thousands)</th>
<th>Units (Centres/Institutes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Helmholtz Association</td>
<td>3.3*</td>
<td>31,8</td>
<td>18</td>
</tr>
<tr>
<td>Fundamental research in six strategic programs (science &amp; technology)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Max Planck Society</td>
<td>1.7</td>
<td>13,3</td>
<td>87</td>
</tr>
<tr>
<td>Scientist-driven fundamental research (science &amp; humanities)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Fraunhofer-Gesellschaft</td>
<td>1.8</td>
<td>15,8</td>
<td>66</td>
</tr>
<tr>
<td>Application-oriented research (science &amp; humanities)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Leibniz Association</td>
<td>1.3</td>
<td>13,2</td>
<td>86</td>
</tr>
<tr>
<td>Interdisciplinary research of supra-regional importance (science &amp; humanities, incl. in museums &amp; libraries)</td>
<td></td>
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<td></td>
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</tbody>
</table>

Source: GWK Monitoring Report 2013 Joint Initiative for Innovation & Research

1 Staff in working hours (full-time equivalent)

*excl. project sponsorships, project management agencies and other revenues

Status: 2012
HELMHOLTZ ASSOCIATION: RESEARCH AREA HEALTH
www.helmholtz.de

- Max Delbrück Center for Molecular Medicine (MDC) Berlin-Buch
- Helmholtz Centre for Infection Research (HZI), Braunschweig
- German Cancer Research Centre (DKFZ), Heidelberg
- Helmholtz Zentrum München – German Research Center for Environmental Health (HMGU)
- German Centre for Neurodegenerative Diseases, Bonn & other locations (DZNE)
- Forschungszentrum Jülich
- Helmholtz-Zentrum Geesthacht
- Helmholtz Centre for Environmental Research (UFZ)
- GSI Helmholtz Centre for Heavy Ion Research
- Helmholtz-Zentrum Dresden-Rossendorf
GERMAN CENTRES FOR HEALTH RESEARCH

- Ministry (BMBF) invests EUR 700 Million (ca $965 Million) till 2015
- 6 centers (national networks)
MAX DELBRÜCK CENTER for MOLECULAR MEDICINE (MDC), BERLIN-BUCH

64 research groups
incl. 10 current ERC grants

1635 staff (incl. guests)

350 PhD students
(46% international)

www.mdc-berlin.de
MDC: BENCHMARKING

With regard to the quality of published papers, the MDC is

• ranked as the best German research institution
  (Excellence Rate Report, SCImago Research Group, 2011)

• 14th among the top 20 life science institutes worldwide in the field of molecular biology/ genetics
  (Thomson Reuters, 2010)

<table>
<thead>
<tr>
<th>Institution</th>
<th>Papers</th>
<th>Citations</th>
<th>Citations per paper</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Cold Spring Harbour Lab</td>
<td>669</td>
<td>63,570</td>
<td>95.02</td>
</tr>
<tr>
<td>2 MIT</td>
<td>1,995</td>
<td>163,596</td>
<td>82.00</td>
</tr>
<tr>
<td>3 Salk Institute for Biological Studies</td>
<td>707</td>
<td>49,996</td>
<td>70.72</td>
</tr>
<tr>
<td>4 European Molecular Biology Lab</td>
<td>1,435</td>
<td>94,736</td>
<td>66.02</td>
</tr>
<tr>
<td>5 Memorial Sloan-Kettering Cancer Center</td>
<td>1,099</td>
<td>71,250</td>
<td>64.83</td>
</tr>
<tr>
<td>6 Wellcome Trust Sanger Institute</td>
<td>790</td>
<td>50,997</td>
<td>64.55</td>
</tr>
<tr>
<td>7 Rockefeller University</td>
<td>1,332</td>
<td>83,307</td>
<td>62.54</td>
</tr>
<tr>
<td>8 Dana Farber Cancer Institute</td>
<td>673</td>
<td>41,627</td>
<td>61.85</td>
</tr>
<tr>
<td>9 Massachusetts General Hospital</td>
<td>1,447</td>
<td>86,773</td>
<td>59.97</td>
</tr>
<tr>
<td>10 Cancer Research UK</td>
<td>752</td>
<td>44,343</td>
<td>58.97</td>
</tr>
<tr>
<td>11 Caltech</td>
<td>846</td>
<td>45,887</td>
<td>54.24</td>
</tr>
<tr>
<td>12 Harvard University</td>
<td>8,525</td>
<td>460,807</td>
<td>54.05</td>
</tr>
<tr>
<td>13 University of Texas Southwestern Medical Center</td>
<td>1,768</td>
<td>95,517</td>
<td>54.03</td>
</tr>
<tr>
<td>14 Max Delbrück Center for Molecular Medicine</td>
<td>674</td>
<td>36,335</td>
<td>53.91</td>
</tr>
<tr>
<td>15 Stanford University</td>
<td>3,029</td>
<td>159,610</td>
<td>52.69</td>
</tr>
<tr>
<td>16 Howard Hughes Medical Institute</td>
<td>660</td>
<td>34,534</td>
<td>52.32</td>
</tr>
<tr>
<td>17 University of California Berkeley</td>
<td>2,252</td>
<td>116,461</td>
<td>51.71</td>
</tr>
<tr>
<td>18 The Scripps Research Institute</td>
<td>1,462</td>
<td>75,383</td>
<td>51.56</td>
</tr>
<tr>
<td>19 Fred Hutchinson Cancer Research Center</td>
<td>1,141</td>
<td>58,184</td>
<td>50.99</td>
</tr>
<tr>
<td>20 University of California San Francisco</td>
<td>3,266</td>
<td>165,732</td>
<td>50.74</td>
</tr>
</tbody>
</table>
RECENT DEVELOPMENTS: Medical Systems Biology

Berlin Institute for Medical Systems Biology (BIMSB), since 2008

- Joint project with the Humboldt University/Charité
- New building on the HU Campus Nord (Berlin city center)
- Expected 300 new staff, 25 groups, €20 M pa
- MDC-NYU PhD Exchange Program

Recent paper highlight

The lab of Nikolaus Rajewsky et al. have shown that circRNAs are a large class of animal RNAs with often tissue/developmental stage specific expression (Memczak et al., Nature 2013). Furthermore they have shown that circRNAs can function to bind miRNAs, therefore effectively interfering with miRNA-mediated regulation.

http://www.nature.com/nature/journal/v495/n7441/full/nature11928.html
http://www.nature.com/news/circular-rnas-throw-genetics-for-a-loop-1.12513
http://www.the-scientist.com/?articles.view/articleNo/34544/title/Circular-RNA-Surprise/
http://www.nature.com/emboj/journal/v32/n7/full/emboj201353a.html
http://www.nature.com/scibx/journal/v6/n10/index.html
http://www.nature.com/nrm/journal/v14/n4/full/nrm3557.html
http://www.nature.com/nrg/journal/v14/n4/full/nrg3464.html
RECENT DEVELOPMENTS: BIH

Berlin Institute of Health (BIH), since 2013

- Charité-Universitätsmedizin Berlin & MDC
- Systems Medicine
- Large collaborative grants,
- Personal fellowships for PhDs and MDs
EU-Life: a new European alliance of 13 Partners

Mission and Goals:

- To promote excellence in research
- To promote integration among European research institutes in life sciences
- To develop and share best practice in research, research management and training
- To attract and integrate talents, and to favor mobility within Europe

Common Jobs Page: [www.eu-life.eu/jobs](http://www.eu-life.eu/jobs)
COMING TO RESEARCH IN GERMANY
SCENARIO I: German early-career post-doc

Finding an open position:

• www.academics.de
• http://www.euraxess.de/portal/job_search_in.html
• http://www.helmholtz.de/en/working_at_helmholtz/job_vacancies/
• http://www.jobvector.de/en/
• GAIN meetings, German Scholar Organization, LinkedIn
COMING TO RESEARCH IN GERMANY

SCENARIO I: German early-career post-doc

Relevant fellowships to consider:

- **European/ international funders:** HFSP, EMBO, FEBS, M. Sklodowska-Curie Fellowships
- **State- or institution-specific schemes:** Helmholtz post-doc fellowships, Postdoctoral Fellowship for Leading Early Career Researchers of the Baden-Wuerttemberg Stiftung, EMBL EIPOD program, Humboldt Post-Doc Fellowships, TU Berlin International Post-Doc Initiative – IPODI (for female scientists)
- **Special schemes to attract German scientists back to Germany:** DAAD “Rückgewinnung deutscher Wissenschaftler aus dem Ausland”, AvH „Feodor Lynen-Rückkehrstipendium“, DFG Research Fellowships
COMING TO RESEARCH IN GERMANY
SCENARIO II: International post-doc to establish own group

Finding a potential host institute/researcher:
• Search engines for hosts and research institutes:
  http://www.euraxess.de/portal/search_engines_for_hosts.html

Relevant fellowships to consider:
• European funders: ERC starting/ consolidator grant
• German funders: DFG Emmy Noether Program, DFG Heisenberg-Programm, Max Planck Research Groups, Helmholtz Junior Research Groups, AvH Sofja Kovalevskaja Award
SOME FELLOWSHIP DATABASES

- http://www.scholarshipportal.eu/#basic
- http://ec.europa.eu/euraxess/index.cfm/jobs/index
- http://www.e-fellows.net/extranet/stipendien-datenbank
- http://www.stipendienlotse.de/
WELCOME TO GERMANY!