



Helmholtz Office Moscow
Dr. Bertram Heinze

HERMANN VON HELMHOLTZ (1821-1894)



Hermann von Helmholtz
(31 August 1821 –
8 September 1894)

- Universal scholar with a sense for the practical
- Ophthalmoscope for examining the retina
- Three-component theory of colour vision
- Explained the principals of tone colour through harmonics; resonance theory of hearing
- First law of thermodynamics on the conservation of energy
- Founding President of the Physikalisch-Technische Reichsanstalt

15 RESEARCH CENTRES



- Alfred Wegener Institute for Polar and Marine Research (AWI)
- Deutsches Elektronen-Synchrotron (DESY)
- German Cancer Research Centre (DKFZ)
- German Aerospace Centre (DLR)
- Research Centre Jülich (FZJ)
- Forschungszentrum Karlsruhe (FZK)
- GeoForschungsZentrum Potsdam (GFZ)
- GKSS-Forschungszentrum Geesthacht (GKSS)
- National Research Centre for Environment and Health (GSF)
- Gesellschaft für Schwerionenforschung (GSI)
- Hahn-Meitner Institute (HMI)
- Helmholtz Centre for Infection Research (HZI)
- Institut für Plasmaphysik (IPP, associated member)
- Max Delbrück Centre for Molecular Medicine (MDC)
- UFZ Centre for Environmental Research Leipzig-Halle (UFZ)

The Helmholtz Association was founded in 1995 as an umbrella organisation of 15 national research centres all established after 1950.

FACTS AND FIGURES

- 15 research centres with 250 institutes
- 25,000 staff
- 8,500 scientists and engineers (excluding junior staff such as doctoral students)
- 3,250 doctoral students
- Budget: 2.2 billion euros



- Helmholtz Centre
- Branch of a Helmholtz Centre
- Helmholtz Head Office

HELMHOLTZ ASSOCIATION FINANCES

Total budget: 2.2 billion euros

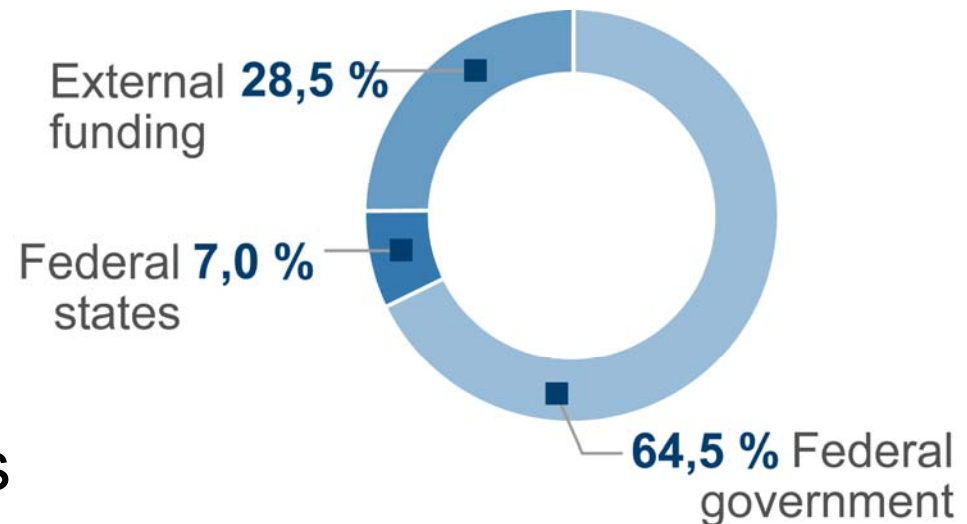
Institutional funding:
approx. 1.6 billion euros,

90% from federal
government

10% from federal
states

- Third-party funding:
approx. 0.6 billion euros

15% funding from industry



CUTTING-EDGE SCIENCE IN NETWORKS

The six research fields:



Energy



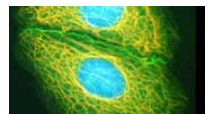
Key Technologies



Earth & Environment



Structure of Matter



Health



Transport & Space

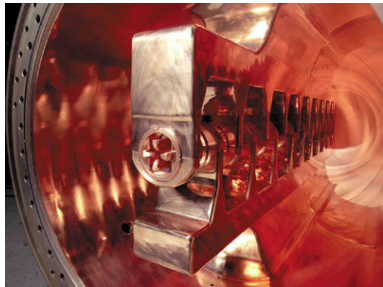
LARGE-SCALE FACILITIES & INFRASTRUCTURE



Tsunami early warning system

Managing national and international networks and consortia, e.g.

- Tsunami early warning system



Ion accelerator facility

Developing, building and operating large-scale facilities, e.g.

- CERN, ITER, XFEL, FAIR



Ice-breaker 'Polarstern'

Providing complex infrastructure, e.g.

- Research vessels, supercomputers, mouse facilities

Helmholtz - Fellowship Programs



- **Helmholtz-DAAD Fellowship Program**
 - Worldwide competition
 - 2006: 21 PhD-Positions; 7 Post-Docs
- **Helmholtz Graduate Schools**
 - “Biosoft”, “Infection Biology”, “Strong Interactions of Soft Matter”
 - 25 PhD-Students per School
 - Worldwide competition
 - 6 Mio EUR Budget 2006-2009

Helmholtz - Fellowship Programs



- **Helmholtz International PhD-Student Programs in Life Sciences**

- 4 Programs (DKFZ, HZI, MDC, GSF)
- 10-15 PhD-students per year each
- Worldwide competition

- **German Research School for Simulation Sciences**

- To be launched 2007
- Connected to Supercomputing facilities JUBL & JUMP at Research Center FZJ

Helmholtz – Russia Joint Research Groups



- **Helmholtz Association and Russian Foundation for Basic Research**
- Joint funding of **12 Young Scientists Groups** for a period of 3 years each
- Annual budget per group **150.000 EUR**
- Networking **Russian Institutes and Universities** with **Helmholtz Centers** for top level research
- **Grants** for young scientists in **Russia**
- Call just opened; 4 Groups 2007

Helmholtz Büro Moskau

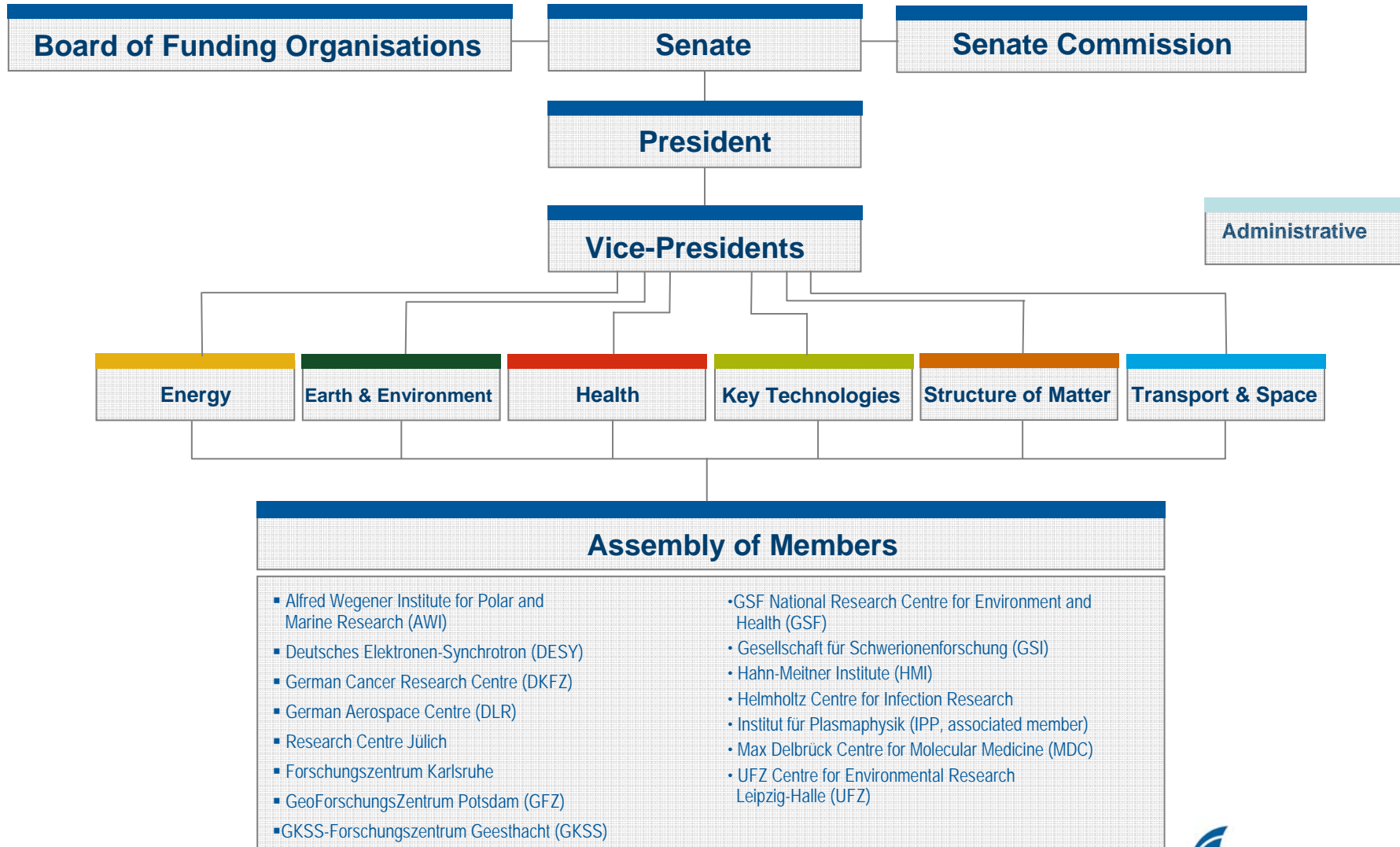


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Helmholtz-Russia Joint Research Groups
„Creating New Opportunities for Young Scientists“

STRUCTURE



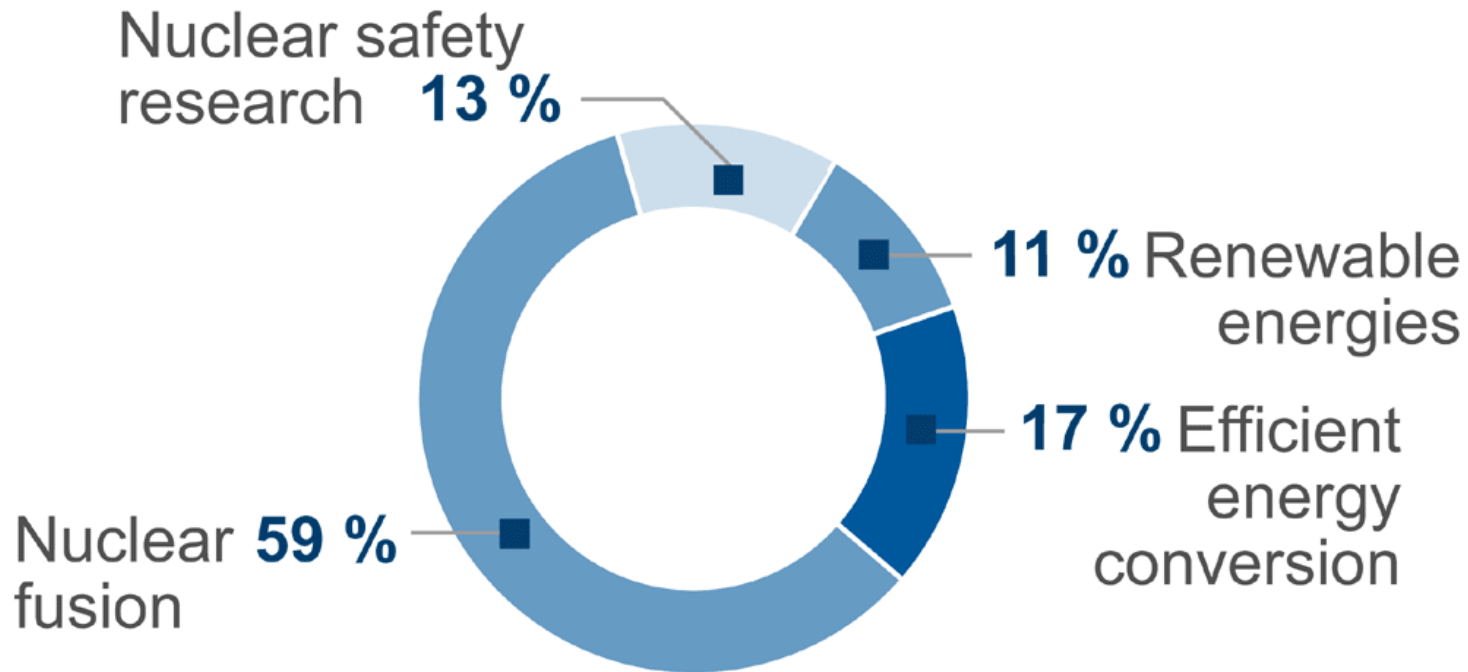
NON-UNIVERSITY RESEARCH ORGANISATIONS IN GERMANY

	Budget/ billion	Staff	Centres/ Institutes
Helmholtz Association Use-inspired basic research for strategic programmes	€2.2	25,000	15
Max Planck Society Science-led basic research	€1.4	12,000	80
Fraunhofer Society Industry-oriented research and development	€1.1	12,500	58
Leibniz Association Long-term research topics	€1.1	13,000	84

RESEARCH FIELD: ENERGY

290 million euros

1,960 staff*



Participating Centres:

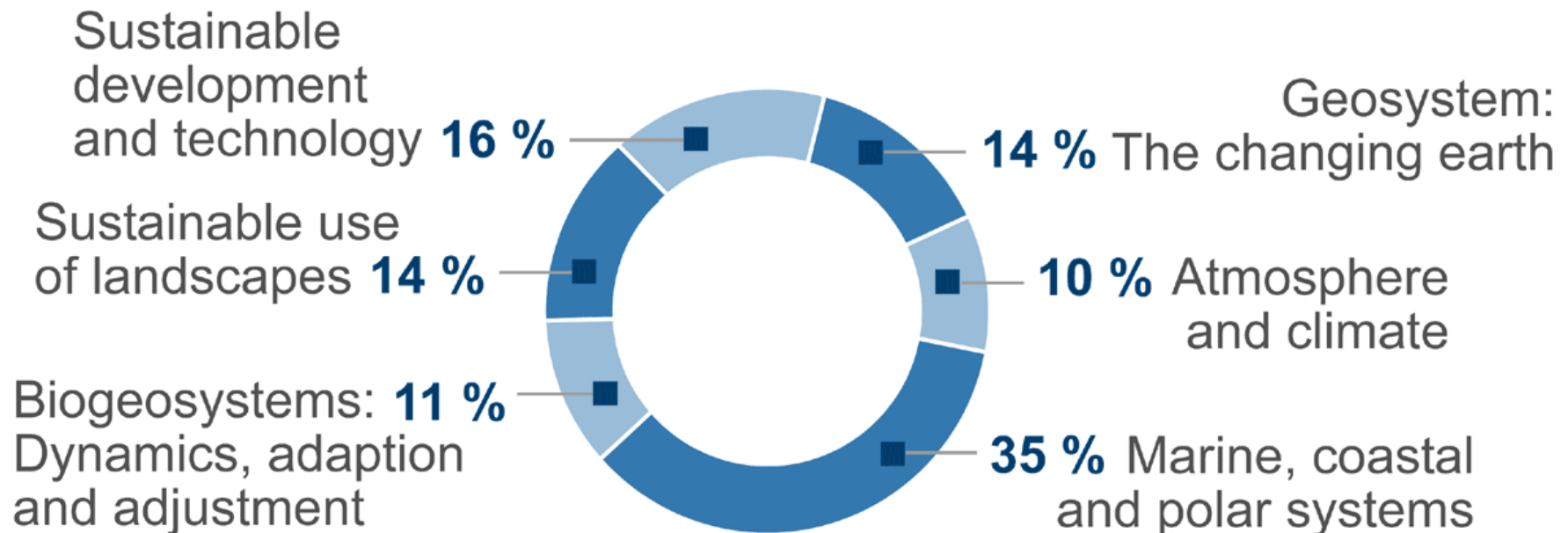
German Aerospace Centre (DLR), Forschungszentrum Karlsruhe, Forschungszentrum Jülich, GeoForschungsZentrum Potsdam (GFZ), Hahn-Meitner Institute (HMI), Max-Planck-Institut für Plasmaphysik (IPP).

*in FTE

RESEARCH FIELD: EARTH & ENVIRONMENT

323 million euros

2,494 staff*



Participating Centres:

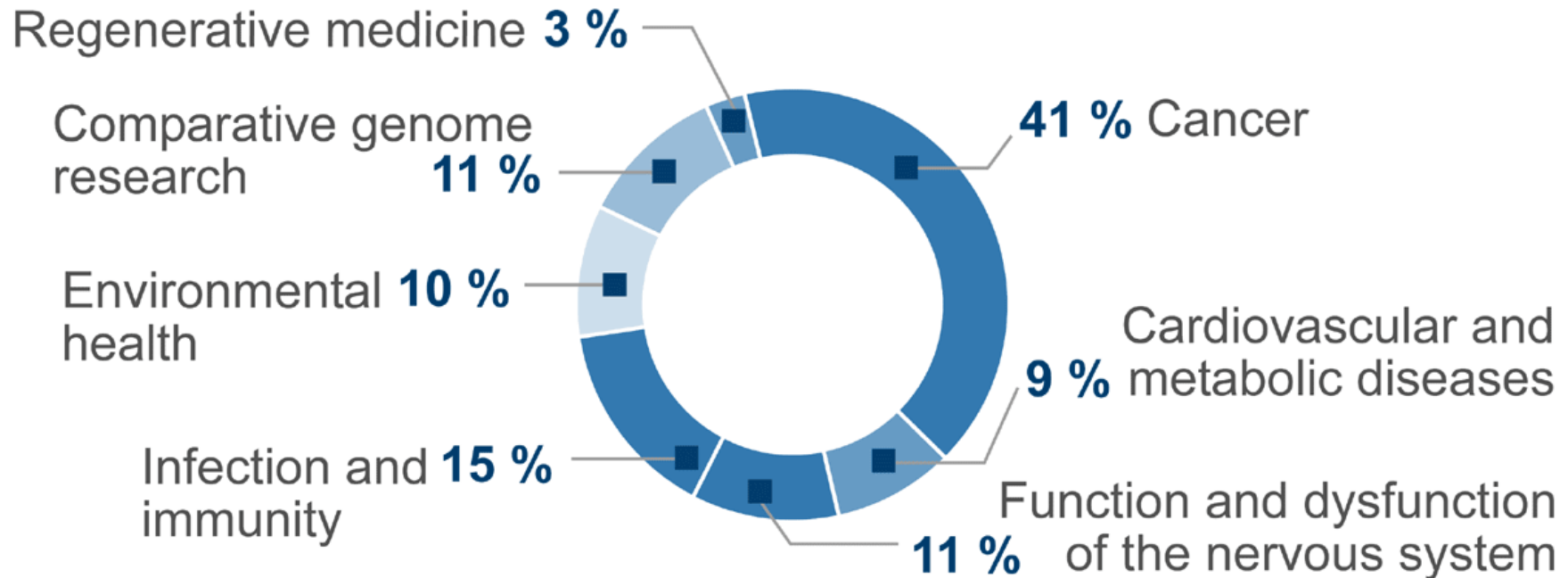
Alfred Wegener Institute for Polar and Marine Research (AWI), German Aerospace Centre (DLR), Forschungszentrum Jülich, Forschungszentrum Karlsruhe, GeoForschungsZentrum Potsdam (GFZ), GKSS-Forschungszentrum Geesthacht (GKSS), GSF National Research Centre for Environment and Health (GSF), Helmholtz Centre for Infection Research (formerly GBF), UFZ Centre for Environmental Research Leipzig-Halle (UFZ)

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RESEARCH FIELD: HEALTH

347 million euros

2,971 staff*



Participating Centres:

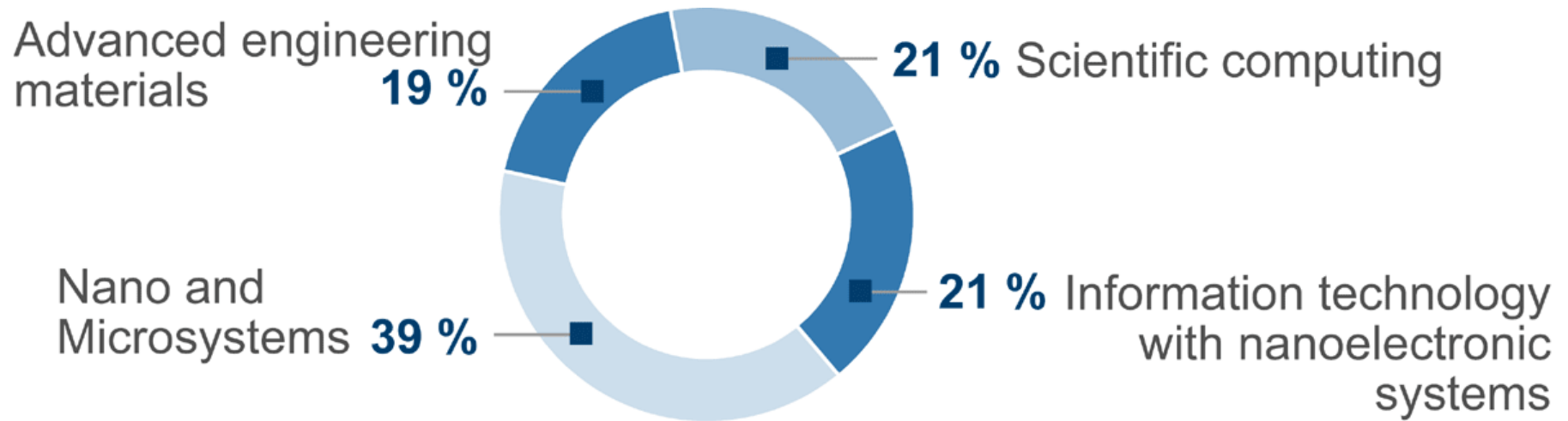
German Cancer Research Centre (DKFZ), Forschungszentrum Jülich, Forschungszentrum Karlsruhe, GKSS-Forschungszentrum Geesthacht (GKSS), GSF National Research Centre for Environment and Health (GSF), Gesellschaft für Schwerionenforschung (GSI), Hahn-Meitner Institute (HMI), Helmholtz Centre for Infection Research (formerly GBF), Max Delbrück Centre for Molecular Medicine (MDC), UFZ Centre for Environmental Research Leipzig-Halle (UFZ).

*in FTE

RESEARCH FIELD: KEY TECHNOLOGIES

131 million euros

948 staff*



Participating Centres:

Forschungszentrum Jülich, Forschungszentrum Karlsruhe, GKSS-Forschungszentrum Geesthacht (GKSS).

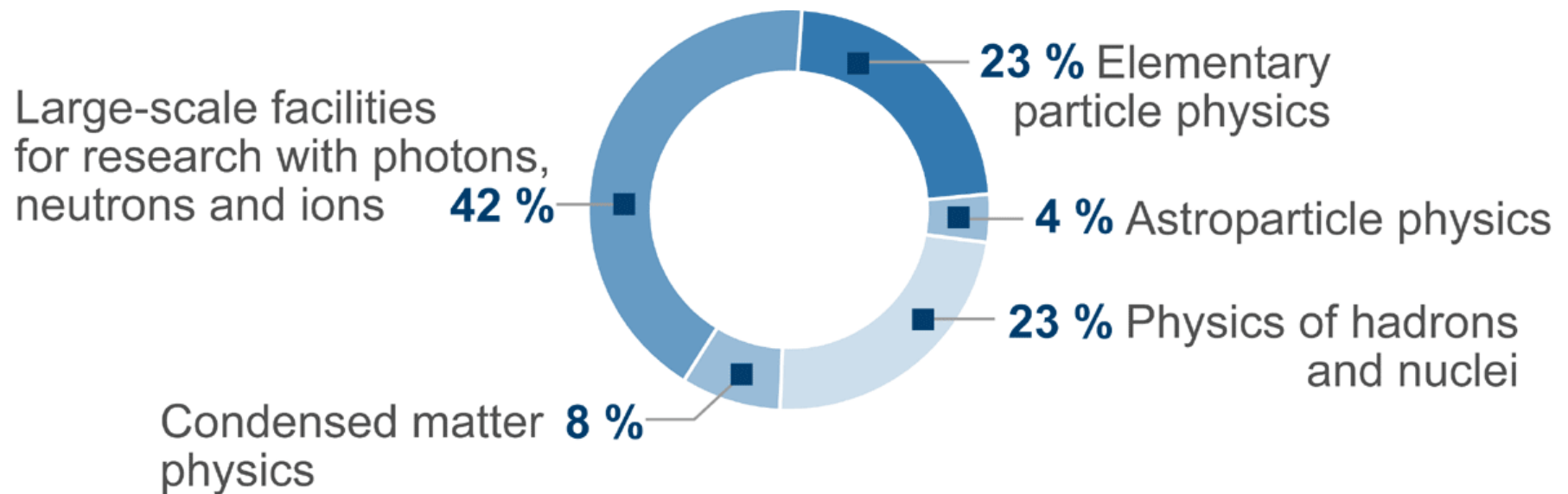
The Hahn-Meitner Institute is involved in individual programme topics.

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RESEARCH FIELD: STRUCTURE OF MATTER

452 million euros

2.520 staff*



Participating Centres:

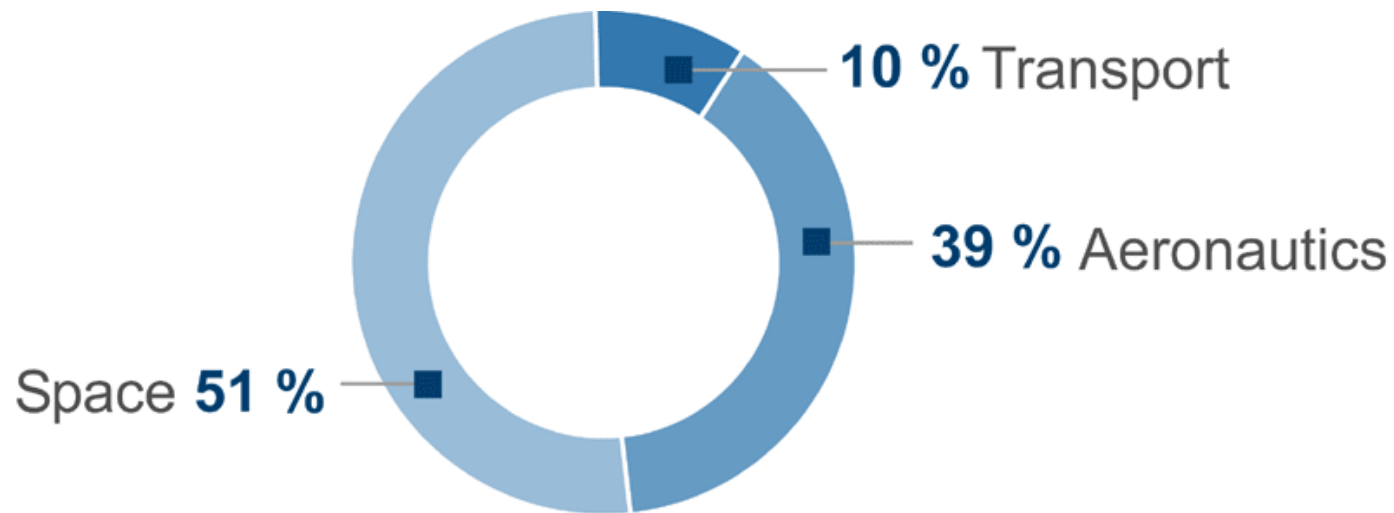
Deutsches Elektronen-Synchrotron (DESY), Forschungszentrum Jülich, Forschungszentrum Karlsruhe, GKSS-Forschungszentrum Geesthacht (GKSS), Gesellschaft für Schwerionenforschung (GSI), Hahn-Meitner Institute (HMI).

*in FTE

RESEARCH FIELD: TRANSPORT & SPACE

329 million euros

1,930 staff*



Participating Centre:
German Aerospace Centre (DLR)

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