Research in Germany
This brochure provides a first insight into research in Germany in the field of physics and is especially recommended to early career researchers from abroad.

Physics’ research in Germany is conducted at universities and at non-university research institutions. Almost all universities and many universities of applied sciences host a section in this field. The spectrum ranges from small thematically focused working groups to large scale research facilities and the topics cover the whole scope of physics.

This brochure is intended to give an initial overview. The following maps and tables highlight research consortia and graduate training programmes at universities and non-university research institutes with a main focus on physics.

On top of this, there is a lot more to discover: e.g. the DFG funds a multitude of individual projects in the area of physics. These individual grants outweigh the research consortia both in number and in overall funding volume. Towards the end of this brochure, you will find a link to the online database GEPRIS that provides an overview of all DFG-funded research projects. You will also find additional important links for further information about programmes in the field of physics and profiles of German universities and research institutions.

We invite you to explore the many opportunities that Germany has to offer and welcome your feedback.
Collaborative Research Centres/Transregios
Clusters of Excellence
DFG-funded Priority Programmes and Research Units are not shown on the map since they are not necessarily located at a single location; they are listed on pages 17 and 19. The map shows the headquarters of the non-university research institutions.
Clusters of Excellence (EXC) promote cutting-edge research. They serve to strengthen the research profiles of universities or university consortia in internationally competitive fields. They create excellent training and career opportunities for early career researchers. Within the framework of the Excellence Strategy, they can receive between €3 million and €10 million annually and are funded for seven years, starting in 2019. A second seven-year period is possible.

Collaborative Research Centres (CRC) are organisational units established at universities which enable researchers to pursue an outstanding research programme crossing the boundaries of disciplines, institutes, departments and faculties. The traditional Collaborative Research Centre is generally applied for by one university and is conducted by researchers of that university. Early career support is a key objective of the Collaborative Research Centre Programme. Early career researchers may get involved in a CRC in numerous ways, for example within the framework of an Integrated Research Training Group. Collaborative Research Centres are funded for a period of up to 12 years.

Transregios (TRR) are Collaborative Research Centres in which up to three universities collaborate with each other and submit a joint application. The contributions of the cooperative partners are essential, complementary and synergetic to the joint research objective. Funding facilitates close, nationwide collaboration among the participating universities and researchers, as well as networking and shared use of resources. There is also the option of international Transregios.

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<thead>
<tr>
<th>Location</th>
<th>Institution</th>
<th>Title</th>
<th>Funded Since</th>
<th>Contact</th>
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<tbody>
<tr>
<td>Bonn</td>
<td>Rheinische Friedrich-Wilhelms-Universität Bonn</td>
<td>Light and Matter at the Quantum Frontier: Foundations and Applications in Metrology (QuantumFrontiers) (EXC 2123)</td>
<td>2019</td>
<td><a href="http://www.quantumfrontiers.uni-hannover.de">www.quantumfrontiers.uni-hannover.de</a></td>
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<tr>
<td>Dresden</td>
<td>Technische Universität Dresden</td>
<td>Advanced Imaging of Matter: Structure, Dynamics and Control on the Atomic Scale (AIM) (EXC 2056)</td>
<td>2019</td>
<td><a href="http://www.cui.uni-hamburg.de">www.cui.uni-hamburg.de</a></td>
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<td>Würzburg</td>
<td>Julius-Maximilians-Universität Würzburg</td>
<td>Quantum Universe (EXC 2121)</td>
<td>2019</td>
<td><a href="http://www.qu.uni-hamburg.de">www.qu.uni-hamburg.de</a></td>
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<td>Heidelberg</td>
<td>Ruprecht-Karls-Universität Heidelberg</td>
<td>STRUCTURES: A Unifying Approach to Emergent Phenomena in the Physical World, Mathematics, and Complex Data (EXC 2181)</td>
<td>2019</td>
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<td>Mainz</td>
<td>Johannes Gutenberg-Universität Mainz</td>
<td>Precision Physics, Fundamental Interactions and Structure of Matter (PRISMA+) (EXC 2118)</td>
<td>2019</td>
<td><a href="http://www.prisma.uni-mainz.de">www.prisma.uni-mainz.de</a></td>
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<td>Location</td>
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<tr>
<td>Berlin</td>
<td>Humboldt-Universität zu Berlin</td>
<td>Hybrid Inorganic/Organic Systems for Opto-Electronics (HIOS) (CRC 981)</td>
<td>2011</td>
<td><a href="http://www.physik.hu-berlin.de/sfb951">www.physik.hu-berlin.de/sfb951</a></td>
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<td>Bochum</td>
<td>Ruhr-Universität Bochum</td>
<td>Transient Atmospheric Plasmas – from Plasmas to Liquids to Solids (CRC 1316)</td>
<td>2017</td>
<td><a href="http://sfb1316.rub.de">http://sfb1316.rub.de</a></td>
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<td>Cologne</td>
<td>Universität zu Köln</td>
<td>Conditions and Impact of Star Formation – Astrophysics, Instrumentation and Laboratory Research (CRC 956)</td>
<td>2010</td>
<td><a href="http://www.sfb956.de">www.sfb956.de</a></td>
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<td>Cologne</td>
<td>Universität zu Köln</td>
<td>Control and Dynamics of Quantum Materials (CRC 1238)</td>
<td>2016</td>
<td><a href="http://crc1238.uni-koeln.de/">http://crc1238.uni-koeln.de/</a></td>
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<tr>
<td>Darmstadt</td>
<td>Technische Universität Darmstadt</td>
<td>Nuclei: From Fundamental Interactions to Structure and Stars (CRC 1245)</td>
<td>2015</td>
<td><a href="http://www.sfb1245.tu-darmstadt.de">www.sfb1245.tu-darmstadt.de</a></td>
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<td>Dresden</td>
<td>Technische Universität Dresden</td>
<td>Correlated Magnetism: From Frustration to Topology (CRC 1143)</td>
<td>2014</td>
<td><a href="https://tu-dresden.de/nn/physik/sfb1143/der-sfb">https://tu-dresden.de/nn/physik/sfb1143/der-sfb</a></td>
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<tr>
<td>Duisburg</td>
<td>Universität Duisburg-Essen</td>
<td>Non-Equilibrium Dynamics of Condensed Matter in the Time Domain (CRC 1242)</td>
<td>2016</td>
<td><a href="http://www.uni-due.de/sfb1242">www.uni-due.de/sfb1242</a></td>
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<td>Heidelberg</td>
<td>Ruprecht-Karls-Universität Heidelberg</td>
<td>Isolated Quantum Systems and Universality in Extreme Conditions (ISOQUANT) (CRC 1225)</td>
<td>2016</td>
<td><a href="http://isoquant.uni-heidelberg.de">http://isoquant.uni-heidelberg.de</a></td>
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<tr>
<td>Konstanz</td>
<td>Universität Konstanz</td>
<td>Controlled Nanosystems: Interaction and Interfacing to the Macroscale (CRC 767)</td>
<td>2007</td>
<td><a href="http://www.sfb767.uni-konstanz.de">www.sfb767.uni-konstanz.de</a></td>
</tr>
<tr>
<td>Mainz</td>
<td>Johannes Gutenberg-Universität Mainz</td>
<td>The Low-Energy Frontier of the Standard Model: From Quarks and Gluons to Hadrons and Nuclei (CRC 1044)</td>
<td>2011</td>
<td><a href="https://sfb1044.uni-mainz.de/">https://sfb1044.uni-mainz.de/</a></td>
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<tr>
<td>Marburg</td>
<td>Philipps-Universität Marburg</td>
<td>Structure and Dynamics of Internal Interfaces (CRC 1083)</td>
<td>2013</td>
<td><a href="http://www.uni-marburg.de/sfb1083">www.uni-marburg.de/sfb1083</a></td>
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<td>Munich</td>
<td>Ludwig-Maximilians-Universität München</td>
<td>Nanoagents for the Spatiotemporal Control of Molecular and Cellular Reactions (CRC 1032)</td>
<td>2012</td>
<td><a href="http://www.sfb1032.physik.uni-muenchen.de">www.sfb1032.physik.uni-muenchen.de</a></td>
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<tr>
<td>Munich</td>
<td>Technische Universität München</td>
<td>Neutrinos and Dark Matter in Astro- and Particle Physics (NDM) (CRC 1258)</td>
<td>2016</td>
<td><a href="http://www.sfb1258.de">www.sfb1258.de</a></td>
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### CENTRES OF RESEARCH

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<th>Institution</th>
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<td>Würzburg</td>
<td>Julius-Maximilians-Universität Würzburg</td>
<td>Topological and Correlated Electronics at Surfaces and Interfaces (ToCoTronics) (CRC 1170)</td>
<td>2015</td>
<td><a href="http://www.physik.uni-wuerzburg.de/sfb_1170">www.physik.uni-wuerzburg.de/sfb_1170</a></td>
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### COLLABORATIVE RESEARCH CENTRES/TRANSREGIOS

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<tr>
<td>Aachen</td>
<td>Rheinisch-Westfälische Technische Hochschule Aachen</td>
<td>Particle Physics Phenomenology after the Higgs Discovery (P3H) (TRR 257)</td>
<td>2018</td>
<td><a href="http://www.kit.edu/research/collaborative_research">www.kit.edu/research/collaborative_research</a> centers_24462.php</td>
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<tr>
<td>Karlsruhe</td>
<td>Karlsruher Institut für Technologie</td>
<td>From Electronic Correlations to Functionality (TRR 80)</td>
<td>2009</td>
<td><a href="http://www.trr80.de">www.trr80.de</a></td>
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<tr>
<td>Siegen</td>
<td>Universität Siegen</td>
<td>Strong-Interaction Matter Under Extreme Conditions (TRR 211)</td>
<td>2017</td>
<td><a href="https://th.physik.uni-frankfurt.de/~strongmatter">https://th.physik.uni-frankfurt.de/~strongmatter</a></td>
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<tr>
<td>Bonn</td>
<td>Rheinische Friedrich-Wilhelms-Universität Bonn</td>
<td>Open System Control of Atomic and Photonic Matter (OSCAR) (TRR 185)</td>
<td>2016</td>
<td><a href="http://www.oscar.uni-bonn.de">www.oscar.uni-bonn.de</a></td>
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<tr>
<td>Munich</td>
<td>Technische Universität München</td>
<td>Symmetries and the Emergence of Structure in QCD (TRR 110)</td>
<td>2012</td>
<td><a href="http://crc110.hiskp.uni-bonn.de">http://crc110.hiskp.uni-bonn.de</a></td>
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<td>Berlin</td>
<td>Freie Universität Berlin</td>
<td>Entangled States of Matter (TRR 183)</td>
<td>2016</td>
<td><a href="http://crc183.uni-koeln.de">http://crc183.uni-koeln.de</a></td>
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<td>Cologne</td>
<td>Universität zu Köln</td>
<td>Ultrafast Spin Dynamics (TRR 227)</td>
<td>2017</td>
<td><a href="http://www.trr227.de">www.trr227.de</a></td>
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<td>Dortmund</td>
<td>Technische Universität Dortmund</td>
<td>Tailored Nonlinear Photonics: From Fundamental Concepts to Functional Structures (TRR 142)</td>
<td>2013</td>
<td><a href="http://trr142.uni-paderborn.de">http://trr142.uni-paderborn.de</a></td>
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<td>Frankfurt/Main</td>
<td>Goethe-Universität Frankfurt am Main,</td>
<td>Condensed Matter Systems with Variable Many-Body Interactions (TRR 49)</td>
<td>2007</td>
<td><a href="https://itp.uni-frankfurt.de/~tr49/">https://itp.uni-frankfurt.de/~tr49/</a></td>
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<td></td>
<td>Technische Universität Kaiserslautern,</td>
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<td>Johannes Gutenberg-Universität Mainz,</td>
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<td>Kaiserslautern</td>
<td>Technische Universität Kaiserslautern,</td>
<td>Spin+X – Spin in its Collective Environment (TRR 173)</td>
<td>2015</td>
<td><a href="http://www.uni-kl.de/trr173">www.uni-kl.de/trr173</a></td>
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<td>Mainz</td>
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<td>Regensburg</td>
<td>Universität Regensburg, Bergische</td>
<td>Hadron Physics from Lattice QCD (TRR 55)</td>
<td>2008</td>
<td><a href="http://www.physik.uni-regensburg.de/sfbtr55">www.physik.uni-regensburg.de/sfbtr55</a></td>
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<td>Wuppertal</td>
<td>Universität Regensburg, Bergische</td>
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<td></td>
<td>Universität Wuppertal</td>
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Research Units (FOR) often contribute to establishing new research directions. Research Units are made up of a team of researchers working together on a research project which is often of an interdisciplinary nature. Research Units consist of several researchers and subprojects. The subprojects of a Research Unit are often located at several locations throughout Germany. Research Units are generally funded for up to six years. Research Units are not shown on the map. Only the titles of the thematic focus and the project websites are listed.
Priority Programmes (SPP) have a programmatic focus and the purpose of advancing knowledge in an emerging field of research through collaborative networked support. They are characterised by their enhanced quality of research through the use of new methods and forms of collaboration in emerging fields. As a rule, one programme can consist of up to 30 individual subprojects located at several institutions across Germany; it usually has one coordinating person. Priority Programmes normally receive funding for a period of six years.

Priority Programmes are not shown on the map. Only the titles of the overall themes and the project website are listed.
The Fraunhofer Society is one of the world’s leading organisations for applied research with an annual research budget of 2.5 billion euros, 72 institutes and more than 26,600 employees. Fraunhofer’s R&D portfolio covers a wide range of fields, including health, security, communications, transport, energy and the environment. www.fraunhofer.de

The Helmholtz Association contributes to solving major challenges facing society, science and industry with world-level research in six areas: energy, earth and environment, health, key technologies, structure of matter and aeronautics, space and transport. With more than 40,000 employees in 18 research centres and an annual budget of approximately 4.7 billion euros, the Helmholtz Association is Germany’s largest scientific organisation. www.helmholtz.de

The Leibniz Association is an umbrella organisation of 93 research institutes. The annual budget amounts to 1.93 billion euros. Some 9,800 researchers – approximately 20% of them from abroad – work on a widely diverse range of subjects, including the humanities and social sciences, economics, spatial and life sciences, mathematics, natural and engineering sciences and environmental research. www.leibniz-association.eu

The Max Planck Society for the Advancement of Science is one of Germany’s largest independent non-profit research organisations. The Max Planck Society has been allocated approximately 1.7 billion euros for 2018. A combined total of 15,600 researchers, postdoctoral/junior researchers and visiting researchers at 84 Max Planck Institutes conduct basic research in the natural sciences, life sciences, social sciences and humanities. One third of the researchers and more than half of the junior and visiting researchers come from abroad. www.mpg.de
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<tr>
<td>Karlsruhe</td>
<td>Karlsruhe Institute of Technology (KIT)</td>
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<td>Aachen</td>
<td>DWI – Leibniz Institute for Interactive Materials</td>
<td><a href="http://www.dwi.rwth-aachen.de">www.dwi.rwth-aachen.de</a></td>
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<tr>
<td>Berlin</td>
<td>Ferdinand-Braun-Institut, Leibniz-Institut für Höchstfrequenztechnik (FBH)</td>
<td><a href="http://www.fbh-berlin.com">www.fbh-berlin.com</a></td>
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<td>Berlin</td>
<td>Leibniz Institute for Crystal Growth (IKZ)</td>
<td><a href="http://www.ikz-berlin.de">www.ikz-berlin.de</a></td>
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<tr>
<td>Berlin</td>
<td>Max Born Institute for Nonlinear Optics and Short Pulse Spectroscopy im Forschungsverbund Berlin (MBI)</td>
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<tr>
<td>Berlin</td>
<td>Paul-Drude-Institut für Festkörperphysik (PDI)</td>
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<tr>
<td>Berlin</td>
<td>Leibniz-Institut für Analytische Wissenschaften (ISAS)</td>
<td><a href="http://www.isas.de">www.isas.de</a></td>
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<td>Dortmund</td>
<td>Leibniz Institute for Polymer Research Dresden (IPF)</td>
<td><a href="http://www.ipfd.de">www.ipfd.de</a></td>
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<td>Dresden</td>
<td>Leibniz Institute for Solid State and Materials Research Dresden (IFW)</td>
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<tr>
<td>Freiburg</td>
<td>Kiepenheuer Institute for Solar Physics (KIS)</td>
<td><a href="http://www.leibniz-kis.de">www.leibniz-kis.de</a></td>
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<td>Greifswald</td>
<td>Leibniz Institute for Plasma Science and Technology (INP Greifswald)</td>
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<td>Jena</td>
<td>Institute of Photonic Technology (IPHT)</td>
<td><a href="http://www.ipht-jena.de">www.ipht-jena.de</a></td>
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<td>Leipzig</td>
<td>Leibniz Institute for Surface Modification (IOM)</td>
<td><a href="http://www.iom-leipzig.de">www.iom-leipzig.de</a></td>
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<td>Potsdam</td>
<td>Leibniz Institute for Astrophysics Potsdam (AIP)</td>
<td><a href="http://www.aip.de">www.aip.de</a></td>
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<td>Saarbrücken</td>
<td>Leibniz Institute for New Materials (INM)</td>
<td><a href="http://www.inm-gmbh.de">www.inm-gmbh.de</a></td>
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**LEIBNIZ INSTITUTES**

**MAX PLANCK INSTITUTES**

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<td>Fritz Haber Institute of the Max Planck Society (FHI-Berlin)</td>
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<td>Bonn</td>
<td>Max Planck Institute for Radio Astronomy (MPIfR)</td>
<td><a href="http://www.mpi-fi-berlin.mpg.de">www.mpi-fi-berlin.mpg.de</a></td>
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<td>Dresden</td>
<td>Max Planck Institute for Chemical Physics of Solids (CPFS)</td>
<td><a href="http://www.cfps.mpg.de">www.cfps.mpg.de</a></td>
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<td>Dresden</td>
<td>Max Planck Institute for the Physics of Complex Systems (MPIPKS)</td>
<td><a href="http://www.mpipks-dresden.mpg.de">www.mpipks-dresden.mpg.de</a></td>
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<td>Düsseldorf</td>
<td>Max Planck Institute for Iron Research (MPIE)</td>
<td><a href="http://www.mpie.de">www.mpie.de</a></td>
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<td>Erlangen</td>
<td>Max Planck Institute for the Science of Light (MPL)</td>
<td><a href="http://www.mpl.mpg.de">www.mpl.mpg.de</a></td>
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<td>Garching</td>
<td>Max Planck Institute for Astrophysics (MPA-Garching)</td>
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<td>Garching</td>
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<td><a href="http://www.mpq.mpg.de">www.mpq.mpg.de</a></td>
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**NON-UNIVERSITY RESEARCH INSTITUTIONS**

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<td>Garching</td>
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<td>Göttingen</td>
<td>Max Planck Institute for Biophysical Chemistry (BPC)</td>
<td><a href="http://www.mpi-bpc.mpg.de">www.mpi-bpc.mpg.de</a></td>
</tr>
<tr>
<td>Göttingen</td>
<td>Max Planck Institute for Dynamics and Self-Organization (DS)</td>
<td><a href="http://www.ds.mpg.de">www.ds.mpg.de</a></td>
</tr>
<tr>
<td>Göttingen</td>
<td>Max Planck Institute for Solar System Research (MPS)</td>
<td><a href="http://www.mps.mpg.de">www.mps.mpg.de</a></td>
</tr>
<tr>
<td>Halle/Saale</td>
<td>Max Planck Institute of Microstructure Physics (MPI-Halle)</td>
<td><a href="http://www.mpi-halle.mpg.de">www.mpi-halle.mpg.de</a></td>
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<tr>
<td>Hamburg</td>
<td>Max Planck Institute for the Structure and Dynamics of Matter (MPSD)</td>
<td><a href="http://www.mpsd.mpg.de">www.mpsd.mpg.de</a></td>
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<td>Heidelberg</td>
<td>Max Planck Institute for Astronomy (MPIA)</td>
<td><a href="http://www.mpi-a.de">www.mpi-a.de</a></td>
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<tr>
<td>Heidelberg</td>
<td>Max Planck Institute for Nuclear Physics (MPIK)</td>
<td><a href="http://www.mpi-hd.mpg.de">www.mpi-hd.mpg.de</a></td>
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<tr>
<td>Magdeburg</td>
<td>Max Planck Institute of Dynamics of Complex Technical Systems</td>
<td><a href="http://www.mpi-magdeburg.mpg.de">www.mpi-magdeburg.mpg.de</a></td>
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<tr>
<td>Mainz</td>
<td>Max Planck Institute for Polymer Research (MPIP)</td>
<td><a href="http://www.mpip-mainz.mpg.de">www.mpip-mainz.mpg.de</a></td>
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<tr>
<td>Munich</td>
<td>Max Planck Institute for Physics (MPI)</td>
<td><a href="http://www.mpp.mpg.de">www.mpp.mpg.de</a></td>
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<tr>
<td>Potsdam-Golm</td>
<td>Max Planck Institute of Colloids and Interfaces (MPIKG)</td>
<td><a href="http://www.mpi-kg.mpg.de">www.mpi-kg.mpg.de</a></td>
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<tr>
<td>Potsdam-Golm</td>
<td>Max Planck Institute for Gravitational Physics (AEI)</td>
<td><a href="http://www.aei.mpg.de">www.aei.mpg.de</a></td>
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<tr>
<td>Stuttgart</td>
<td>Max Planck Institute for Solid State Research (FKF)</td>
<td><a href="http://www.fkf.mpg.de">www.fkf.mpg.de</a></td>
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<tr>
<td>Stuttgart/Tübingen</td>
<td>Max Planck Institute for Intelligent Systems (IS)</td>
<td><a href="http://www.is.mpg.de">www.is.mpg.de</a></td>
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**OTHERS**

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<th>Location</th>
<th>Institution</th>
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<tr>
<td>Braunschweig</td>
<td>Physikalisch-Technische Bundesanstalt (PTB)</td>
<td><a href="http://www.ptb.de">www.ptb.de</a></td>
</tr>
</tbody>
</table>
Research Training Groups (RTG) combine an ambitious research programme at universities with comprehensive training, tailored supervision and academic freedom to form an ideal environment for a successful doctorate. Research Training Groups can also have an interdisciplinary approach. They are funded for a period of up to nine years.

International Research Training Groups (IRTG) provide opportunities for joint doctoral training programmes between German universities and universities abroad. The research and study programmes are jointly developed and supervised. Doctoral students in the programme spend six months at the partner institution.

Integrated Research Training Groups (within Collaborative Research Centres/Transregios) offer ideal research environments for doctoral researchers. The main aim of these structured training programmes is to provide young scientists and academics with opportunities to independently carry out research at an early stage of their career. The programmes further take care to closely integrate early career researchers into an academic network. Working in Collaborative Research Centres projects, doctoral researchers achieve additional qualifications. As research assistants in these projects, they contribute to the Research Centre’s success. They are closely involved with the projects and have access to the entire project infrastructure.

### Graduate Training - Funded by DFG -

<table>
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<tr>
<th>Location</th>
<th>Institution</th>
<th>Title</th>
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<tr>
<td>Bayreuth</td>
<td>Universität Bayreuth</td>
<td>Photophysics of Synthetic and Biological Multichromophoric Systems (RTG 1640)</td>
<td>2010</td>
<td><a href="http://www.multichromophores.uni-bayreuth.de">www.multichromophores.uni-bayreuth.de</a></td>
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<tr>
<td>Bremen</td>
<td>Universität Bremen</td>
<td>Quantum Mechanical Materials Modelling - QM³ (RTG 2247)</td>
<td>2016</td>
<td><a href="http://www.rtg-qm3.de">www.rtg-qm3.de</a></td>
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<td>Darmstadt Mainz</td>
<td>Technische Universität Darmstadt Johannes Gutenberg-Universität Mainz</td>
<td>Accelerator Science and Technology for Energy Recovery Linacs (AccelencE) (RTG 2128)</td>
<td>2015</td>
<td><a href="http://www.mars.tu-darmstadt.de/koooperationen/grk_2128_accelence_1/index.de.jsp">www.mars.tu-darmstadt.de/koooperationen/grk_2128_accelence_1/index.de.jsp</a></td>
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<td>Dresden</td>
<td>Technische Universität Dresden</td>
<td>Itinerant Magnetism and Superconductivity in Intermetallic Compounds (RTG 1621)</td>
<td>2010</td>
<td><a href="http://tu-dresden.de/forschung/dfg1621">http://tu-dresden.de/forschung/dfg1621</a></td>
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<td>Freiburg</td>
<td>Albert-Ludwigs-Universität Freiburg</td>
<td>Mass and Symmetries after the Discovery of the Higgs Particle at the LHC (RTG 2044)</td>
<td>2014</td>
<td><a href="http://www.grk2044.uni-freiburg.de">www.grk2044.uni-freiburg.de</a></td>
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<td>Hamburg</td>
<td>Universität Hamburg</td>
<td>Mathematics Inspired by String Theory and Quantum Field Theory (RTG 1670)</td>
<td>2010</td>
<td><a href="http://grk1670.math.uni-hamburg.de">http://grk1670.math.uni-hamburg.de</a></td>
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<td>Heidelberg</td>
<td>Ruprecht-Karls-Universität Heidelberg</td>
<td>High Resolution and High Rate Detectors in Nuclear and Particle Physics (HighRR) (RTG 2058)</td>
<td>2015</td>
<td><a href="http://www.physik.uni-heidelberg.de/highrr">www.physik.uni-heidelberg.de/highrr</a></td>
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<td>Heidelberg</td>
<td>Ruprecht-Karls-Universität Heidelberg</td>
<td>Particle Physics Beyond the Standard Model (RTG 1940)</td>
<td>2013</td>
<td><a href="http://www.thphys.uni-heidelberg.de/~gk_ppsm/doku.php">www.thphys.uni-heidelberg.de/~gk_ppsm/doku.php</a></td>
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<td>Karlsruhe</td>
<td>Karlsruhe Institute of Technology</td>
<td>Elementary Particle Physics at Highest Energy and Precision (RTG 1694)</td>
<td>2010</td>
<td><a href="http://www.kceta.kit.edu/grk1694">www.kceta.kit.edu/grk1694</a></td>
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<td>Marburg</td>
<td>Philipps-Universität Marburg</td>
<td>Functionalization of Semiconductors (RTG 1782)</td>
<td>2011</td>
<td><a href="http://www.uni-marburg.de/grk1782">www.uni-marburg.de/grk1782</a></td>
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<td>Münster</td>
<td>Westfälische Wilhelms-Universität Münster</td>
<td>Strong and Weak Interactions – From Hadrons to Dark Matter (RTG 2149)</td>
<td>2015</td>
<td><a href="http://www.uni-muenster.de/Physik.GRK2149">www.uni-muenster.de/Physik.GRK2149</a></td>
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<td>Würzburg</td>
<td>Julius-Maximilians-Universität Würzburg</td>
<td>Molecular Biradicals: Structure, Properties and Reactivity (RTG 2112)</td>
<td>2015</td>
<td><a href="http://www.uni-wuerzburg.de/grk2112">www.uni-wuerzburg.de/grk2112</a></td>
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<td>Berlin</td>
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<td>Dynamical Phenomena in Complex Networks: Fundamentals and Applications (RTG 1740)</td>
<td>2011</td>
<td><a href="http://www.physik.hu-berlin.de/irtg1740">www.physik.hu-berlin.de/irtg1740</a></td>
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<td>São Paulo</td>
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<td>Cold Controlled Ensembles in Physics and Chemistry (CoCo) (RTG 2079)</td>
<td>2014</td>
<td><a href="http://www.irtg-coco.uni-freiburg.de">www.irtg-coco.uni-freiburg.de</a></td>
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**INTERNATIONAL RESEARCH TRAINING GROUPS**

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<tr>
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<td>Albert-Ludwigs-Universität Freiburg</td>
<td>Cold Controlled Ensembles in Physics and Chemistry (CoCo) (RTG 2079)</td>
<td>2014</td>
<td><a href="http://www.irtg-coco.uni-freiburg.de">www.irtg-coco.uni-freiburg.de</a></td>
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**INTEGRATED RESEARCH TRAINING GROUPS IN COLLABORATIVE RESEARCH CENTRES**

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<td>Munich</td>
<td>Technische Universität München</td>
<td>“Munich School on Neutrinos and Dark Matter” within: Neutrinos and Dark Matter in Astro- and Particle Physics (NDM) (CRC 1258)</td>
<td>2016</td>
<td><a href="http://gepris.dfg.de/gepris/projekt/283604770">http://gepris.dfg.de/gepris/projekt/283604770</a></td>
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<tr>
<td>Würzburg</td>
<td>Julius-Maximilians-Universität Würzburg</td>
<td>Integrated Research Training Group within: Topological and Correlated Electronics at Surfaces and Interfaces (ToCoTronics) (CRC 1170)</td>
<td>2015</td>
<td><a href="https://www.physik.uni-wuerzburg.de/sfb1170/i-rtg/">https://www.physik.uni-wuerzburg.de/sfb1170/i-rtg/</a></td>
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<td>Bonn Kaiserslautern</td>
<td>Rheinische Friedrich-Wilhelms-Universität Bonn Technische Universität Kaiserslautern</td>
<td>Integrated Research Training Group within: Open System Control of Atomic and Photonic Matter (OSCAR) (TRR 185)</td>
<td>2016</td>
<td><a href="www.oscar.uni-bonn.de">www.oscar.uni-bonn.de</a></td>
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<tr>
<td>Frankfurt/ Main Kaiserslautern Mainz</td>
<td>Goethe-Universität Frankfurt am Main Technische Universität Kaiserslautern Johannes Gutenberg-Universität Mainz</td>
<td>Integrated Research Training Group within: Condensed Matter Systems with Variable Many-Body Interactions (TRR 49)</td>
<td>2007</td>
<td><a href="https://npi.uni-frankfurt.de/~trr49/">https://npi.uni-frankfurt.de/~trr49/</a></td>
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**INTEGRATED RESEARCH TRAINING GROUPS IN COLLABORATIVE RESEARCH CENTRES/TRANSREGIOS**

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<td>Regensburg Wuppertal</td>
<td>Universität Regensburg Bergische Universität Wuppertal</td>
<td>Integrated Research Training Group within: Hadron Physics from Lattice QCD (TRR 55)</td>
<td>2008</td>
<td><a href="www.physik.uni-regensburg.de/sfbtr55/Seiten/training.php">www.physik.uni-regensburg.de/sfbtr55/Seiten/training.php</a></td>
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</table>
GRADUATE TRAINING
-AT NON-UNIVERSITY RESEARCH INSTITUTIONS-

Helmholtz Graduate Schools provide a roof under which a varied number of curricula in different fields, or across disciplines, can find a home. Helmholtz Graduate Schools constitute a valuable addition to the wide range of training programmes available within the Helmholtz Association. They offer optimal conditions for PhD students to work and enable them to create a network of contacts with fellow university researchers while also fostering the integration of participants into the research environment.

Leibniz Graduate Schools were established to foster the systematic promotion of junior researchers. Young researchers are given the opportunity to do their doctorates in an excellent, collaborative, cross-disciplinary research environment. To this end, Leibniz institutions cooperate closely with universities. As every Leibniz institution focuses on clearly defined, socially-relevant themes, doctoral candidates have a wealth of networking opportunities in a large, dedicated scientific community. The particular character of research at the institutions in the Leibniz Association, which includes fundamental, large-scale and application-oriented research, means doctoral candidates can conduct research from basic idea right through to application.

International Max Planck Research Schools (IMPRS) offer talented German and international junior scientists the opportunity to earn a doctorate under excellent research conditions. The research schools are established by one or several Max Planck Institutes. These IMPRS work in close cooperation with universities and other - sometimes international - research institutions. This provides an extraordinary framework for the graduate students to work in, and is a great advantage in interdisciplinary research projects, or in projects that require special equipment.

Max Planck Schools are a joint initiative of the Max Planck Society, German universities and the German research organizations. As national networks of graduate education, the Max Planck Schools complement the highly successful regional cooperation formats such as the International Max Planck Research Schools (IMPRS). The three pilot Schools will receive a total of nine million euros in funding from the Federal Ministry of Education and Research (BMBF) each year over an initial period of five years. Max Planck Schools are not shown on the map.

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<th>Location</th>
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<tr>
<td>Darmstadt</td>
<td>Helmholtz Graduate School for Hadron and Ion Research (HGS-HIRe for FAIR)</td>
<td><a href="http://hgs-hire.de">http://hgs-hire.de</a></td>
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<td>Garching</td>
<td>International Helmholtz Graduate School for Plasma Physics (HEPP)</td>
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<tr>
<td>Hamburg</td>
<td>PIER Helmholtz Graduate School</td>
<td><a href="http://www.pier-hamburg.de">www.pier-hamburg.de</a></td>
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<td>Berlin</td>
<td>Leibniz Graduate School Dynamics in New Light (DinL)</td>
<td><a href="http://www.mbi-berlin.de/DinL">www.mbi-berlin.de/DinL</a></td>
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<td>Berlin</td>
<td>Leibniz Graduate School of Molecular Biophysics (FMP)</td>
<td><a href="http://www.fmp-berlin.info/education/lgs">www.fmp-berlin.info/education/lgs</a></td>
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<td>Potsdam</td>
<td>Leibniz Graduate School for Quantitative Spectroscopy in Astrophysics</td>
<td><a href="http://www.aip.de/en/for-students/leibniz-graduate-school">www.aip.de/en/for-students/leibniz-graduate-school</a></td>
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<tr>
<td>Berlin</td>
<td>IMPRS Functional Interfaces in Physics and Chemistry</td>
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<td>Bonn</td>
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<tr>
<td>Dresden</td>
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<td>Dresden</td>
<td>IMPRS for Many Particle Systems in Structured Environments</td>
<td><a href="http://www.imprsdynamics.mp.de">www.imprsdynamics.mp.de</a></td>
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<td>Düsseldorf</td>
<td>IMPRS for Interface Controlled Materials for Energy Convention</td>
<td><a href="http://www.mpie.de/2747306">www.mpie.de/2747306</a></td>
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<td>Erlangen</td>
<td>IMPRS Physics of Light</td>
<td><a href="http://www.mpl.mpg.de/de/imprs">www.mpl.mpg.de/de/imprs</a></td>
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<td>Garching</td>
<td>IMPRS of Advanced Photon Science</td>
<td>www2.mpq.mpg.de/APS</td>
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<td>Göttingen</td>
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<td><a href="http://www.uni-goettingen.de/en/587218.html">www.uni-goettingen.de/en/587218.html</a></td>
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<td>Göttingen</td>
<td>IMPRS for Solar System Science at the University of Göttingen</td>
<td><a href="http://www.mps.mpg.de/73264/imprs">www.mps.mpg.de/73264/imprs</a></td>
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<td>Hamburg</td>
<td>IMPRS for Ultrafast Imaging and Structural Dynamics</td>
<td><a href="http://www.imprsulast.de">www.imprsulast.de</a></td>
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<td>Hannover</td>
<td>IMPRS on Gravitational Wave Astronomy</td>
<td><a href="http://imprs-gw.aei.mpde.de">http://imprs-gw.aei.mpde.de</a></td>
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<td>Heidelberg</td>
<td>IMPRS for Precision Tests of Fundamental Symmetries</td>
<td><a href="http://www.mpi-hd.mpg.de/imprs">www.mpi-hd.mpg.de/imprs</a></td>
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<td>Heidelberg</td>
<td>IMPRS for Quantum Dynamics in Physics, Chemistry and Biology</td>
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<td>Magdeburg</td>
<td>IMPRS for Advanced Methods in Process and Systems Engineering</td>
<td><a href="http://www.mpi-magdeburg.mpg.de/imprs">www.mpi-magdeburg.mpg.de/imprs</a></td>
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<td>Mülheim</td>
<td>IMPRS on Reactive Structure Analysis for Chemical Reactions</td>
<td><a href="https://imprs.cec.mpg.de">https://imprs.cec.mpg.de</a></td>
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<td>Munich</td>
<td>IMPRS on Elementary Particle Physics</td>
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<td>Potsdam</td>
<td>IMPRS for Multiscale Bio-Systems</td>
<td><a href="http://imprs.mpikg.mpg.de">http://imprs.mpikg.mpg.de</a></td>
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<td>Potsdam-Golm</td>
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**MAX PLANCK RESEARCH SCHOOLS**

- various locations | Max Planck School Matter to Life | www.maxplanck-schools.de/en/matter-to-life |
- various locations | Max Planck School of Photonics  | www.maxplanck-schools.de/en/photonics      |
SOCIETIES AND ASSOCIATIONS IN GERMANY:

Deutsche Gesellschaft für Biophysik (DGB): www.dgfb.org
Deutsche Gesellschaft für Elektronenmikroskopie (DGE): www.dge-homepage.de
Deutsche Physikalische Gesellschaft (DPG): www.dpg-physik.de
German Astronomical Society (AG): www.astronomische-gesellschaft.org
German Bunsen Society for Physical Chemistry (DBG): www.bunsen.de
German Crystallographic Society (DGK): http://dgk-home.de
German Scientific Laser Society (WLT): www.wlt.de
German Vacuum Society (DVG): www.vakuumgesellschaft.de
The German Branch of the European Optical Society (DGaO): www.dgao.de

OPEN POSITIONS

Research in Germany: www.research-in-germany.org/jobs
Helmholtz Association: www.helmholtz.de/en/jobs_talent
Leibniz Society: www.leibniz-gemeinschaft.de/en/karriere
Max Planck Society: www.mpg.de/jobboard

FURTHER INFORMATION

Research Institutions, Projects, Funding, Contacts

The “Research in Germany” Portal: Information on research and funding opportunities, academic and research-related job portals, as well as advice on preparing a research stay or initiating a collaboration with German research organisations. www.research-in-germany.org

German Project Information System (GEPRIS): Online database providing information about all current DFG-funded research projects and contact information for the Principal Investigators. http://gepris.dfg.de

German Research Institutions (GERIT): Information on more than 25,000 institutes at German universities and non-university research institutions, searchable by geographic location, subject and other structural criteria. www.gerit.org

Website of the DFG: Further background information about DFG funding programmes, funding guidelines, and lists of currently DFG-funded activities. www.dfg.de

The German Rectors’ Conference (HRK) Research Map: The interactive HRK Research Map database provides information on the research priorities that are of strategic institutional importance for each university. www.hrk.de/home (go to Research Map)

The Higher Education Compass: Information on Germany’s higher education institutions, the range of courses and programmes that they offer, their worldwide cooperation, and who to contact locally. www.hochschulkompass.de/en/higher-education-compass