Facts and Figures
Forschungszentrum Jülich is focused on use-inspired basic research. It faces up to the challenges of the present and researches for a future worth living. As a member of the Helmholtz Association, Forschungszentrum Jülich counts among the major interdisciplinary research centres in Europe.

<table>
<thead>
<tr>
<th>At a Glance</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>5,684</td>
<td>300</td>
</tr>
<tr>
<td>employees</td>
<td>tonnes of CO₂ saved</td>
</tr>
<tr>
<td></td>
<td>through new Jülich mobility concept</td>
</tr>
<tr>
<td>1,738</td>
<td>615.7</td>
</tr>
<tr>
<td>publications</td>
<td>revenues</td>
</tr>
<tr>
<td>in peer-reviewed journals</td>
<td>in millionens of euros</td>
</tr>
<tr>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>years of JuLab</td>
<td>around 40,000 school students</td>
</tr>
<tr>
<td>1,041</td>
<td>2</td>
</tr>
<tr>
<td>visiting scientists</td>
<td>ERC Consolidator Grants</td>
</tr>
<tr>
<td>from 68 countries</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>ERC Advanced Grant</td>
<td></td>
</tr>
</tbody>
</table>
60 Years of research at the centre

Cover: The laying of the foundation stone for the MERLIN research reactor by Fritz Steinhoff, the Minister-President of North Rhine-Westphalia in 1958; this act is also regarded as the foundation of the entire facility.
Research Fields

Information and the brain

The increasing level of digitization both requires and enables innovations in the areas of information technology, high-performance computing, scientific simulation, and big data. Jülich scientists are also investigating the coding of information in molecular-biological structures such as proteins and neural information processing in the human brain. Understanding the complex processes of the brain is crucial to a more effective diagnosis and treatment of brain diseases.

Publications

The number of citations serves as an important measure of scientists’ influence within their field. In 2015, four Jülich scientists were added to the Highly Cited Research database of media company Thomson Reuters. In addition, a current survey by the magazine Lab Times, which assesses publications from the years 2007 to 2013, reveals that Jülich researchers count among the most-cited neuroscientists in Europe.
The aim of the transformation of the German energy sector ("Energiewende") is to contribute to a secure, affordable, and environmentally friendly energy supply. Scientists at Jülich are developing new solutions in the areas of renewable energies, storage technologies, and energy efficiency. Nuclear waste management is also part of Jülich’s portfolio. In addition, researchers at Jülich are concerned with the consequences of human activities on the climate, while simultaneously focusing on renewable raw materials for bio-based products as part of the bioeconomy.

Jülich publications
2015

630 books, other publications

1,738 peer-reviewed journals

total 2,483

115 doctoral theses, habitations
Institutes and Subinstitutes

1. Institute for Advanced Simulation
   - Jülich Supercomputing Centre
   - Quantum Theory of Materials
   - Theory of Soft Matter and Biophysics
   - Theoretical Nanoelectronics
   - Theory of the Strong Interactions
   - Computational Biomedicine
   - Theoretical Neuroscience

2. Institute of Bio- and Geosciences
   - Biotechnology
   - Plant Sciences
   - Agrosphere

3. Institute of Complex Systems
   - Neutron Scattering
   - Theory of Soft Matter and Biophysics
   - Soft Matter
   - Cellular Biophysics
   - Molecular Biophysics
   - Structural Biochemistry
   - Biomechanics
   - Bioelectronics

4. Institute of Energy and Climate Research
   - Materials Synthesis and Processing
   - Microstructure and Properties of Materials
   - Electrochemical Process Engineering
   - Plasma Physics
   - Photovoltaics
   - Nuclear Waste Management and Reactor Safety
   - Stratosphere
   - Troposphere
   - Fundamental Electrochemistry
   - Systems Analysis and Technology Evaluation
   - Helmholtz Institute Erlangen-Nürnberg for Renewable Energy Production
   - Helmholtz Institute Münster for Ionics in Energy Storage
Nuclear Physics Institute
- Experimental Hadron Structure
- Experimental Hadron Dynamics
- Theory of the Strong Interactions
- Large-Scale Nuclear Physics Equipment

Institute of Neuroscience and Medicine
- Structural and Functional Organization of the Brain
- Molecular Organization of the Brain
- Cognitive Neurology
- Physics of Medical Imaging
- Nuclear Chemistry
- Computational and Systems Neuroscience
- Neuromodulation
- Ethics in the Neurosciences
- Computational Biomedicine

Jülich Centre for Neutron Science
- Neutron Scattering
- Scattering Methods

Peter Grünberg Institute
- Quantum Theory of Materials
- Theoretical Nanoelectronics
- Functional Nanostructures at Surfaces
- Scattering Methods
- Microstructure Research
- Electronic Properties
- Electronic Materials
- Bioelectronics
- Semiconductor Nanoelectronics

Central Institute of Engineering, Electronics and Analytics
- Engineering and Technology
- Electronic Systems
- Analytics
FLEX cooperation: Fluorescence reveals important information about a plant’s metabolism. Shown above is the image of a jewel orchid (*Macodes petola*).
1. Energy research
HEMCP
Virtual platform for researching materials for fuel and solar cells, catalysts, and power plant technologies
Volume: € 15.5 million
Funding bodies: BMBF/BMWi

2. Energy research
EoCoE
Network of experts aiming to improve utilization of the European supercomputing infrastructure for energy research
Volume: € 1.2 million • Funding body: EU

3. Energy research
FELIZIA
Development of long-life battery cells with increased energy density and improved security while also reducing costs
Volume: € 1.2 million
Funding body: BMBF

4. Neutron research
SINE 2020
Development of new methods and technologies for research with neutrons: this research helps in exploring materials and analyzing molecular structures
Volume: € 1 million
Funding body: EU

5. Structural biology
sFIDA
Test to measure harmful precursor protein aggregates for Alzheimer’s dementia and thus establish earlier diagnosis
Volume: € 1.5 million
Funding body: BMBF

6. Plant research
FLEX
Spectrometer to identify the fluorescent radiation of plants on board the Earth observation satellite FLEX
Volume: € 800,000
Funding body: Helmholtz Association

7. Plant research
EMPHASIS
European network studying the connections between heredity, environment, and phenotype in plant breeding

8. Climate research
IAGOS
Detection of climate-relevant trace substances in the atmosphere using measuring instruments on board commercial airliners
Volume: € 9 million
Funding body: BMBF

The volumes given each represent Jülich’s share of the contract volume.
The Jülich Aachen Research Alliance, JARA for short, is a cooperation model between RWTH Aachen University and Forschungszentrum Jülich that is unique in Germany. It is able to overcome the juxtaposition of university and non-university research and teaching. In 2015, unusually young researchers were also able to profit from the collaboration.

In the pilot project JARA-Kids, school students aged around 14 and 15 were able to learn about how scientists work, while also having the opportunity to conduct experiments themselves. Every two weeks, the girls and boys would take turns to conduct experiments at RWTH Aachen University and in Jülich’s JuLab Schools Laboratory.

**JARA in figures**

<table>
<thead>
<tr>
<th>Budget</th>
<th>in millions of euros</th>
<th>Publications</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>500</td>
<td>Publications by JARA members(^3)</td>
<td>2,197</td>
</tr>
<tr>
<td>Amount invested</td>
<td>60</td>
<td>Joint publications</td>
<td>801</td>
</tr>
<tr>
<td>Funds from the Excellence Initiative(^1)</td>
<td>13.6</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**JARA: Jülich Aachen Research Alliance**

1) for the period 2012–2017  
2) as of 31 December 2015  
3) peer-reviewed publications
Industrial Cooperations

Number of industrial cooperations
2015

81 international  total 312  231 national

Important industrial cooperations
2015

Industrial partner(s) | Project
----------------------|---------------------------------------------------------------
Sartorius Biotech GmbH | Development of all-new membrane-based chromatographic single-use systems for the industrial purification of monoclonal antibodies
AeroMegt GmbH         | Development of a mass spectrometry process for atmospheric applications
BSH Bosch und Siemens Hausgeräte GmbH | Optimization of a PEM electrolyser to operate at low ambient temperatures
Syngenta Crop Protection AG | Proof-of-concept evaluation for the rapid measurement of canopy and productivity traits and application case studies in tomatoes using stereo-imaging and spectral analysis
MAN Turbo AG          | Thermal barrier coating systems for cyclical temperature load (KONTEST-2)
KIC InnoEnergy Germany GmbH | Development of optically active layers for photovoltaics
Nanotechnology Solar GmbH | Development of optically active layers for photovoltaics
Rolls-Royce Deutschland | Life cycle tests
Siemens AG            | Elastic modulus characterization
Jülich research focuses on basic topics and creates innovations which benefit both industry and society and which lead to protective rights and licensing agreements. Protective rights include inventions for which patent applications have been filed (patent applications) as well as patents granted.

**New patent applications**

2015

- **total 77**
  - **27** international PCT applications
  - **8** European patent applications
  - **42** German patent applications

1) Patent Cooperation Treaty

**Patents granted**

2015

- **total 158**
  - **37** other patents abroad
  - **115** national patents from 17 European patent granting procedures
  - **6** German patents

- **501** patent families in 2015
- **16,634** protective rights in 2015

**Total existing licences 87**

- **11** of which new
- **23** from abroad (12 of which from USA)
- **66** from SMEs

Revenues from licensing and know-how agreements: €442,000.
Promoting Young Talent: juelich_horizons

juelich_horizons is a strategic concept for promoting young talent in which Forschungszentrum Jülich aims to encourage young people’s interest in science and research from an early age. Aspiring young scientists are provided support throughout vocational training and university studies while also being offered excellent conditions for a successful career in science.

1. **juelich_impulse**
   targets children and young people, starting with kindergarten children and covering all types of schools. A central element here is the JuLab Schools Laboratory.

2. **juelich_tracks**
   is aimed at young people in their training and early career stages.

3. **juelich_chances**
   offers university students and postgraduates from Germany and abroad the opportunity to work in an excellent research environment.

4. **juelich_heads**
   aims to attract excellent early-career scientists with appealing research conditions and interesting career prospects.
People

1 juelich_impulse

Ten years of JuLab Schools Laboratory
Around 40,000 school students have so far had the opportunity at JuLab to experience just how exciting research can be. In 2015 alone, 3,957 school students from classes 4–12 conducted experiments here. Furthermore, JuLab is cooperating closely with schools from the region, such as in the innovative School Meets Science project, which saw 440 school students from four schools in the Düren district taking part in the 2014/15 school year. A long-term cooperation has now been established with the schools involved in the project. Roughly 100 teachers also take part in advanced training every year, while around 110 prospective kindergarten teachers attend the St. Nikolaus-Stift vocational college in Zülpich every year.

2 juelich_tracks

75 young people completed their training at Forschungszentrum Jülich in 2015. 23 achieved the grade “very good” and 24 were awarded “good”; 20 trainees were able to cut their training short by six months due to their outstanding performance.

Traineeships
New trainees 2015

<table>
<thead>
<tr>
<th>Occupations</th>
<th>those including a dual study programme</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laboratory technicians</td>
<td>25</td>
</tr>
<tr>
<td>Electricians</td>
<td>10</td>
</tr>
<tr>
<td>Metalworkers</td>
<td>12</td>
</tr>
<tr>
<td>Administrative occupations</td>
<td>14</td>
</tr>
<tr>
<td>Mathematical-technical software developers</td>
<td>26</td>
</tr>
<tr>
<td>Other</td>
<td>10</td>
</tr>
<tr>
<td>Total</td>
<td>97</td>
</tr>
</tbody>
</table>
Forschungszentrum Jülich is a career stepping stone for undergraduates, postgraduates, and doctoral researchers, who are offered many opportunities through doctoral research awards and public presentations. With respect to doctoral training, Jülich works together with universities in the framework of 19 graduate schools and research training groups – in six of which Jülich has a leading function.

Heading a young investigators group offers scientists early independence and superb career opportunities. Forschungszentrum Jülich also participates in the Helmholtz Postdoc Programme. Funding for up to three years enables young scientists to enhance their own research profile directly after their doctorate.

Young investigators groups at Jülich
Helmholtz and Jülich young investigators groups as well as those funded by third parties in 2011–2015

European Research Council (ERC) Consolidator Grant recipients: junior professor Samir Lounis (above) and Dr. Hendrik Fuchs (below)

The previous years have been recompiled due to an updated counting method.


## People

### Personnel

#### Proportion of women

in percent (full-time equivalent)

<table>
<thead>
<tr>
<th>Year</th>
<th>Female (%)</th>
<th>Male (%)</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>24.8</td>
<td>75.2</td>
<td>32.0</td>
</tr>
<tr>
<td>2015</td>
<td>30.2</td>
<td>69.8</td>
<td>36.2</td>
</tr>
</tbody>
</table>

#### Overview personnel

As of: 31 December 2015

<table>
<thead>
<tr>
<th>Area</th>
<th>Number(^1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scientists and technical personnel</td>
<td>3,595</td>
</tr>
<tr>
<td>of which scientists incl. scientific training</td>
<td>2,048</td>
</tr>
<tr>
<td>• of which doctoral researchers</td>
<td>537</td>
</tr>
<tr>
<td>• of which research fellowship holders</td>
<td>12</td>
</tr>
<tr>
<td>• of which student assistants</td>
<td>104</td>
</tr>
<tr>
<td>• of which joint appointments with universities(^2)</td>
<td>122</td>
</tr>
<tr>
<td>• of which W3 professors</td>
<td>56</td>
</tr>
<tr>
<td>• of which W2 professors</td>
<td>52</td>
</tr>
<tr>
<td>• of which W1 professors</td>
<td>14</td>
</tr>
<tr>
<td>of which technical personnel</td>
<td>1,547</td>
</tr>
<tr>
<td>Project Management Organizations</td>
<td>1,029</td>
</tr>
<tr>
<td>Administration</td>
<td>699</td>
</tr>
<tr>
<td>Trainees and students on placement</td>
<td>361</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>5,684</strong></td>
</tr>
</tbody>
</table>

1) only employees with a contract paid by Jülich
2) excl. members of the Board of Directors

The total number of employees declined by 84 in comparison with the figures from 2014. This development is due to the merging of the nuclear expertise of Forschungszentrum Jülich and AVR GmbH to JEN mbH, which had a particular effect on the number of technical personnel.

### Visiting Scientists

2015: a total of 1,041 from 68 countries

(Broken down in percentage terms)

<table>
<thead>
<tr>
<th>Region</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany</td>
<td>50</td>
</tr>
<tr>
<td>Asia</td>
<td>24</td>
</tr>
<tr>
<td>Eastern Europe(^1)</td>
<td>14</td>
</tr>
<tr>
<td>Western Europe(^1)</td>
<td>6</td>
</tr>
<tr>
<td>The Americas</td>
<td>4</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
</tr>
</tbody>
</table>

1) excl. Germany

---

**Visiting Scientists**

2015: a total of 1,041 from 68 countries

(Broken down in percentage terms)
Professorial Appointments

Scientists working at Jülich are appointed professor in a joint procedure with a partner university. In accordance with the Jülich model, those who are appointed professor are simultaneously seconded by the university to work at Forschungszentrum Jülich. In the reverse Jülich model, professors whose primary employment is at their university also work at Jülich (secondary employment). There are 53 joint appointments with JARA alone.

Joint professorial appointments with universities*

As of: 2015

<table>
<thead>
<tr>
<th>University</th>
<th>Jülich model(^1) total</th>
<th>of which new appointments in 2015</th>
<th>reverse model(^2) total</th>
<th>of which new appointments in 2015</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>FH Aachen</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>HHU Düsseldorf</td>
<td>12</td>
<td></td>
<td>7</td>
<td>1</td>
<td>19</td>
</tr>
<tr>
<td>RWTH Aachen University</td>
<td>46</td>
<td>7</td>
<td>7</td>
<td>1</td>
<td>53</td>
</tr>
<tr>
<td>Univ. of Bochum</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>Univ. of Bonn</td>
<td>10</td>
<td>2</td>
<td>3</td>
<td></td>
<td>13</td>
</tr>
<tr>
<td>Univ. of Duisburg-Essen</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Univ. Erlangen-Nürnberg</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Univ. of Cologne</td>
<td>7</td>
<td>1</td>
<td>1</td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>Univ. of Leuven</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Univ. of Münster</td>
<td></td>
<td></td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Univ. of Regensburg</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Univ. of Stuttgart</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Univ. of Wuppertal</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td>5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>102</strong></td>
<td><strong>12</strong></td>
<td><strong>20</strong></td>
<td><strong>3</strong></td>
<td><strong>122</strong></td>
</tr>
</tbody>
</table>

* excl. members of the Board of Directors

1) Jülich model: Scientists are appointed professor in a joint procedure with one of the partner universities and are simultaneously seconded by the university to Forschungszentrum Jülich

2) Reverse Jülich model: Professors whose primary employment is at their university but also work at Jülich (secondary employment)
Excellent Platforms

Jülich Centre for Neutron Science (JCNS)

JCNS operates instruments at four leading neutron sources. It is responsible for the development and operation of the Jülich instruments at the Heinz Maier-Leibnitz Zentrum (MLZ) in Garching near Munich, the Institut Laue-Langevin in Grenoble, France, and at the SNS Spallation Neutron Source in Oak Ridge, USA. These instruments are also available to external scientists. In addition, JCNS develops several instruments together with international partners for the future European Spallation Source (ESS) in Lund, Sweden.

Beam time allocated
in days, rounded, 2015

- 572 internal users
- 759 allocated through review processes, of which:
  - 386 users from Germany
  - 258 users from the EU
  - 115 users from the rest of the world
- 50 training activities
- 225 maintenance/development

A glimpse into the experimental hall at the research neutron source Heinz Maier-Leibnitz in Garching
Helmholtz Nanoelectronic Facility (HNF)

The Helmholtz Nanoelectronic Facility at Forschungszentrum Jülich is the Helmholtz Association’s central technology platform for nanoelectronics. HNF’s mission is researching, manufacturing, and characterizing nano- and atomic structures for information technology. The nanoelectronics laboratory offers universities, research institutions, and industry free access to expertise and resources for fabricating structures, devices, and circuits – from the atomic scale to complex systems. The focus of work at HNF is resource-conserving “green information technology”.

HNF in figures

2015

<table>
<thead>
<tr>
<th></th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal users</td>
<td>211</td>
</tr>
<tr>
<td>External users</td>
<td>44</td>
</tr>
<tr>
<td>Usage days</td>
<td>220</td>
</tr>
<tr>
<td>Maintenance days</td>
<td>35</td>
</tr>
<tr>
<td>Total usage time of all machines in hours</td>
<td>41,129</td>
</tr>
<tr>
<td>External visitors</td>
<td>1,582</td>
</tr>
</tbody>
</table>
Ernst Ruska-Centre (ER-C)

Forschungszentrum Jülich and RWTH Aachen University jointly operate ER-C as a centre for atomic-resolution electron microscopy and spectroscopy. It is simultaneously the first national user centre for ultrahigh-resolution electron microscopy. The joint undertaking on the Jülich campus, which is named after the inventor of the electron microscope, offers scientists from all over Germany a unique insight into the world of atoms and develops new methods for materials research. Around 50% of the measurement time on the five Titan microscopes (CREWLEY, HOLO, PICO, STEM, and TEM) at ER-C is made available to universities, research institutions, and industry. This time is allocated by a panel of experts nominated by the German Research Foundation (DFG).

Measuring time
at electron microscope instruments of ER-C\(^1\) in days, 2015

<table>
<thead>
<tr>
<th>Service</th>
<th>Days</th>
</tr>
</thead>
<tbody>
<tr>
<td>Servicing and maintenance</td>
<td>233</td>
</tr>
<tr>
<td>RWTH Aachen University</td>
<td>244</td>
</tr>
<tr>
<td>Forschungszentrum Jülich</td>
<td>427</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,590</strong></td>
</tr>
</tbody>
</table>

1) five of which are Titan microscopes

Users
according to region, percentage, 2015

<table>
<thead>
<tr>
<th>Region</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Europe</td>
<td>34</td>
</tr>
<tr>
<td>rest of world</td>
<td>30</td>
</tr>
<tr>
<td>NRW</td>
<td>20</td>
</tr>
<tr>
<td>Germany(^1)</td>
<td>16</td>
</tr>
</tbody>
</table>

1) excl. NRW

The electron microscope PICO, with its record resolution of 50 billionths of a millimetre, can image atomic structures right down to displacements.
Jülich Supercomputing Centre (JSC)

The Jülich Supercomputing Centre provides scientists and engineers working at Forschungszentrum Jülich, universities, and research institutions in Germany and throughout Europe, as well as in the commercial sector with access to computing capacity on supercomputers, enabling them to solve highly complex problems using simulations. The John von Neumann Institute for Computing is responsible for the scientific evaluation of projects. The Jülich supercomputer JUQUEEN, as one of the three fastest computers in Europe, ranked eleventh in the November 2015 TOP500 list, which is revised every six months and compiles a catalogue of the world’s fastest computers. Forschungszentrum Jülich operates JUQUEEN as part of the Supercomputing research programme of the Helmholtz Association. Approximately 70% of the computer is part of the national Gauss Centre for Supercomputing (GCS), which means that this part of the computation time is allocated to national and European projects through a well-established peer-review process. The remaining 30% of computing time is reserved for scientists at Forschungszentrum Jülich and the Jülich Aachen Research Alliance (JARA).

Research fields of ongoing European projects
percentage, PRACE Tier-0, 2015

- **25** products and processes engineering
- **27** condensed matter physics
- **48** physical and analytical chemical science

The numbers are based on the PRACE computing time periods September 2014 - August 2015 (9th call for proposals for project access). JUQUEEN was no longer available in the 10th PRACE call for proposals for project access, as Jülich had already fulfilled its obligations to PRACE.
Sustainable Campus

At Jülich, options for action are being researched and developed in order to ensure equally good living conditions for current and future generations. At the same time, the work being conducted at Forschungszentrum Jülich should itself also satisfy sustainable criteria.

At the start of 2016, Forschungszentrum Jülich became the 114th organisation in Germany to commit to satisfying the criteria outlined in the German Sustainability Code (DNK).

www.fz-juelich.de/sustainable-campus

Forschungszentrum Jülich’s app:
https://apps.appmachine.com/7492GG
Work at Other Locations

Forschungszentrum Jülich is represented at other locations as follows:

1 **Excellent cooperation with Aachen**
   In Aachen, Forschungszentrum Jülich is represented via the German Research School for Simulation Sciences (GRS) and the Jülich Aachen Research Alliance (JARA). GRS is a jointly run institution that offers programmes in computer science and engineering for master’s students and doctoral researchers.

2 **Global experiments with neutrons**
   The Jülich Centre for Neutron Science (JCNS) operates instruments at some of the world’s leading neutron sources:
   - Most of these are located at Heinz Maier-Leibnitz Zentrum in Garching near Munich, run jointly with Technische Universität München and Helmholtz-Zentrum Geesthacht.
   - At the SNS Spallation Neutron Source in Oak Ridge, USA, in which JCNS is involved as the only non-American institution.
   - At the high-flux reactor at Institut Laue-Langevin (ILL) in Grenoble, France; Jülich is a joint shareholder, together with the French organizations CEA and CNRS. This guarantees the participation of the entire German neutron research community in the operation of the most powerful neutron source in the world.
   - In Lund, Sweden, Jülich coordinates the German contribution to the planned European Spallation Source ESS. The aim is to establish a German branch office.

3 **Synchrotron experiments in Germany and abroad**
   - The Peter Grünberg Institute, through the Jülich Synchrotron Radiation Laboratory (JSRL), coordinates materials science experiments with synchrotron radiation in Dortmund, Berlin, Trieste (Italy), and Argonne (USA).

4 **Project Management Jülich**
   Project Management Jülich, as a largely independent organization with branch offices in Jülich, Berlin, Rostock, and
Bonn, is the project management organization with the highest turnover in Germany.

5 Biotechnology Cluster BIO.NRW
Jülich’s Düsseldorf branch office of BIO.NRW, a cluster funded by the Ministry of Innovation, Science and Research of the State of North Rhine-Westphalia, focuses on initiating cooperations between research, enterprises, investors, and politics.

6 Internationally represented
- The activities of Forschungszentrum Jülich in India are coordinated by an office in New Delhi.
- As a member of the Helmholtz Association (HGF), Forschungszentrum Jülich is also represented internationally by Helmholtz offices in Brussels, Moscow, and Beijing.

7 Helmholtz institutes
- The Helmholtz Institute Erlangen-Nürnberg (HI ERN) is set up as a branch office of Forschungszentrum Jülich for renewable energy research and is operated jointly with Friedrich-Alexander-Universität Erlangen-Nürnberg and Helmholtz-Zentrum Berlin.
- The Helmholtz institute for Ionics in Energy Storage was established in Münster in June 2014 as a branch office of Forschungszentrum Jülich and pools Jülich’s competences in battery research with those of RWTH Aachen University, which is also involved.

8 Since 1 September 2015, Jülich’s Institute of Neuroscience and Medicine has been responsible for all the organizational and funding aspects of the Bernstein Network Coordination Site (BCOS) at the University of Freiburg.
Revenues

In 2015, Forschungszentrum Jülich obtained third-party funds to the amount of €238.4 million. Most of this income resulted from research and development activities for industry, the acquisition of funding from Germany and abroad, and project management on behalf of the Federal Republic of Germany and the federal state of North Rhine-Westphalia.

238,445 third-party funding
33,847 of which dismantling projects
377,277 institutional funding
615,722 total revenues

Bodies and Committees

Foundation
11 December 1956

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chairs the Partners’ Meeting
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