



THE FUTURE IS OUR MISSION

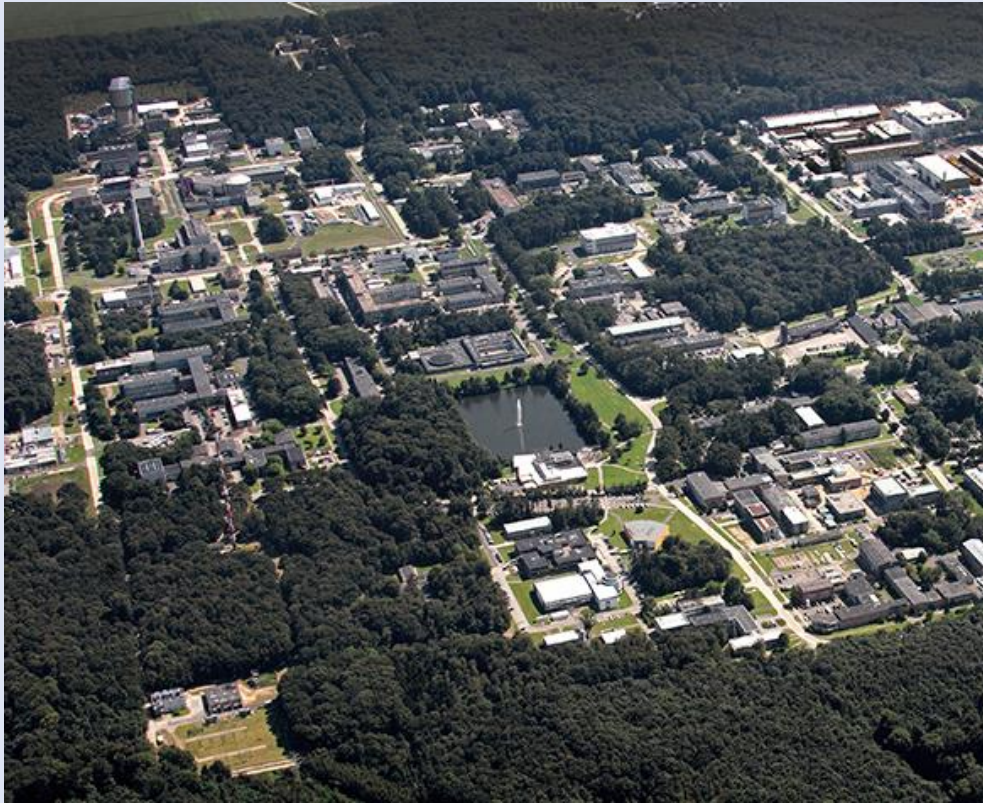
Forschungszentrum Jülich

Member of the Helmholtz Association



RESEARCH AND DEVELOPMENT

on 2.2 Square Kilometres



HELMHOLTZ ASSOCIATION

19 Helmholtz Centres in Germany –
We are One of Them

HELMHOLTZ

RESEARCH FOR GRAND CHALLENGES



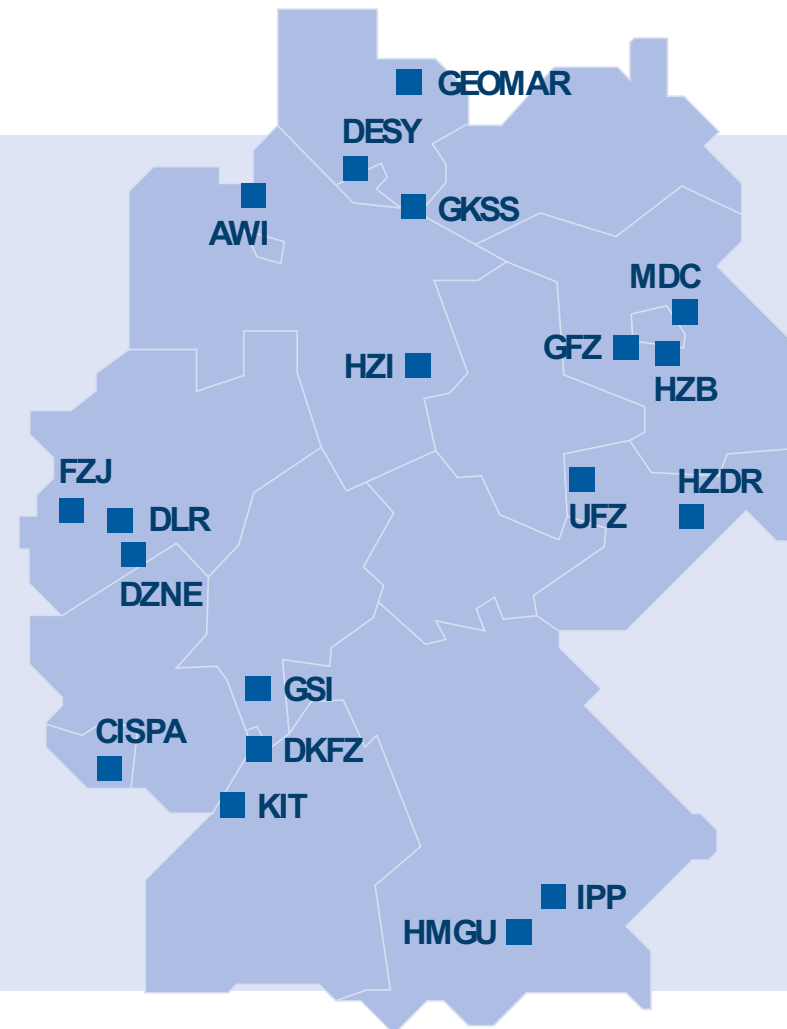
Employees

approx. 40,000 (in 19 centres)



Budget

> € 4 billion (of which more than 30 % external funding)



AT A GLANCE

Facts and Figures

MONDAY, SEPTEMBER 9, 2019								
	IKP-2	IEK-8	INM-4	INM-5	ZEA-1	ZEA-2	PGI-6	IBG-2
8:00	Bus from Jülich (Walramplatz) to Forschungszentrum (FZ Jülich)							
8:30	Arrival at Forschungszentrum; Visitor badges							
9:00	Campus tour by bus							
10:00	Opening Session: Welcome <i>H. Ströher (IKP)</i> Blg. 07.1, R. 312							
10:15	Opening Session: Introduction to FZ Jülich <i>S. Schmidt (VS-I)</i> Blg. 07.1, R. 312							
10:45	Break/Photosession							
11:15	Opening Session: Soft skills <i>Jon Shah (INM-4)</i> Blg. 07.1, R. 312							
12:00	Lunch Break							
14:00	IKP Kick-off: Lecture Structure of Matter <i>H. Ströher</i> Blg. 07.1, R. 312	IEK-8 Kick-off Lecture: Introduction to Atmospheric Chemistry <i>R. Wegener</i>	INM-4 Kick-off Lecture: Introduction to Magnetic Res. Imaging (MRI) <i>J. Shah</i> Blg. 15.14, R. 201	INM-5 Kick-off Lecture: Introduction to Nuclear Chemistry <i>J. Ermert</i> Blg. 15.19, R. 4012	ZEA-1 Kick-off Introduction: Simulations and Technologies <i>J. Wolters, F. Pauly, H. Glückler, S. Rath</i> Blg. 02.5, R. 110	ZEA-2 Kick-off Introduction (jointly with ZEA-1) Future Computer Architectures <i>C. Degenhardt and M. Schiek</i> Blg. 02.5, R. 110	PGI / JuSPARC Welcome: Introduction to Research Topics and Facilities <i>M. Büscher</i> Blg. 04.8, R. 270	IBG-2 Kick off Algal Biomass: (ABB): Nutrient cycling <i>L. Nedbal et al.</i> Blg. 06.1, R. 239 (Imaging): Software development <i>H. Scharr</i> Blg. 06.2, R. 406
15:00	IKP Kick-off Q&A: Session <i>D. Gotta and H. Ströher</i> Blg. 07.1, R. 312							
17:30	End-of-Day: Transfer from FZ Jülich to Jülich							

CHRONOLOGY

60 Years – Research at the Centre

In 2016, Forschungszentrum Jülich celebrated its 60th anniversary. Here is a brief overview of some important events:



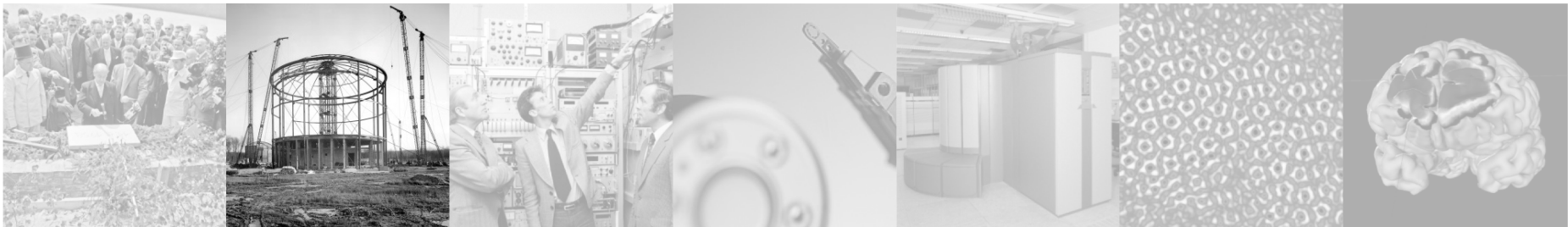
1956 **FOUNDATION**

In December 1956, the state parliament of North Rhine-Westphalia (NRW) decides to build an “nuclear research centre” in Jülich – the birth of today’s Forschungszentrum Jülich. The founders’ main objective is the use of all nuclear research for peaceful purposes.

CHRONOLOGY

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1960

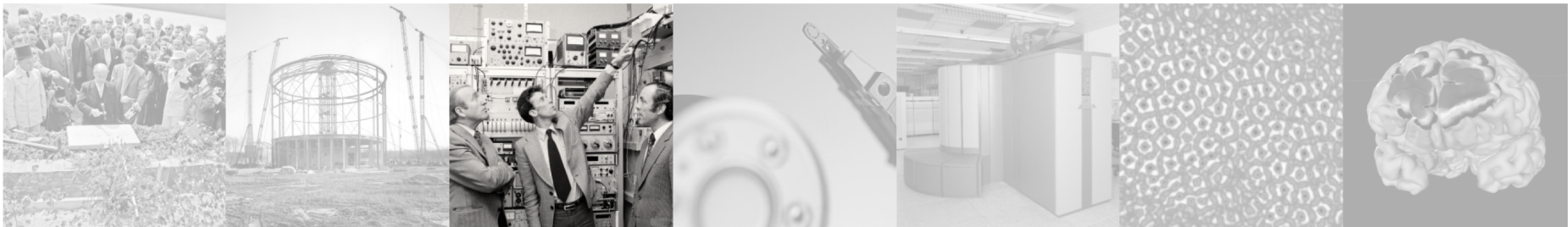
DIDO AND MERLIN

The research reactor DIDO is built in 1960, followed by MERLIN. The reactors serve for pioneering materials research and basic physics research from 1962 onwards.

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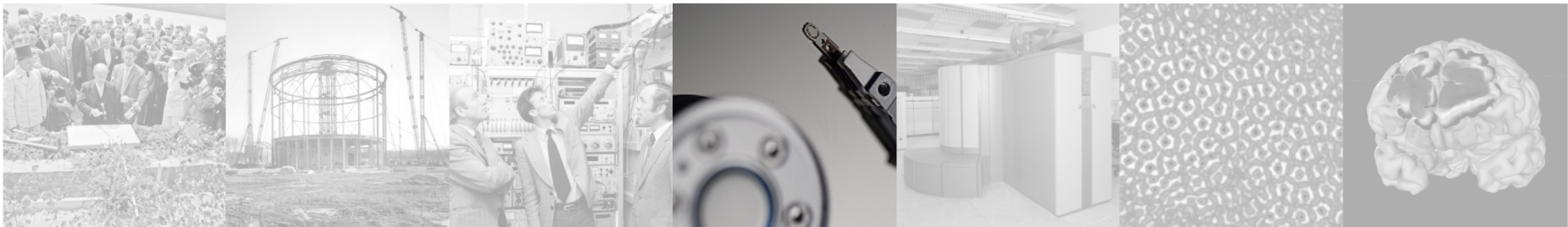
1970 RECORD LOW TEMPERATURE

A record low temperature of 50 microkelvin is achieved at the cryo-facility of the Institute of Solid State Research. This permits research into previously unknown physical effects of materials such as superconductivity.

CHRONOLOGY

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1988 **GMR-EFFECT**

Grünberg discovers the GMR effect which revolutionizes the storage capacities of computer hard disk drive.

CHRONOLOGY

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1995 SUPERCOMPUTING

Forschungszentrum Jülich establishes a new structure for itself: matter, energy, information, life, earth/environment ("MEILE" for short) now form the key research areas. From 1995 onwards, supercomputing becomes a beacon of Forschungszentrum Jülich. Simulation establishes itself as the third methodological pillar alongside experiment and theory.

CHRONOLOGY

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2004 HIGH-PERFORMANCE MICROSCOPY

From 2004 onwards, high-performance electron microscopes at the Ernst Ruska-Centre permit unique and fascinating insights into the world of atoms.

CHRONOLOGY

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Here is a brief overview of some important events:



2013

„BIG BRAIN“

Three-dimensional brain atlas

The three-dimensional
“Big Brain” atlas with
a resolution of 20
micrometres is made
available to science
and medicine.

OUTSTANDING RESEARCH

Prizes and Awards for Jülich Scientists

NATIONAL

German Research Foundation's Gottfried Wilhelm Leibniz Prize

- 2014: Prof. Rainer Waser

Deutscher Zukunftspreis: German President's Award for Innovation in Science and Technology

- 2018: Prof. Peter Wasserscheid (nominee)
- 2002: Prof. Maria-Regina Kula and Dr. Martina Pohl
- 1998: Prof. Peter Grünberg

Order of Merit of the Federal Republic of Germany

- 2018: Prof. Martin Winter
- 2002: Prof. Heiner Müller-Krumbhaar
- 1997: Prof. Joachim Treusch

INTERNATIONAL

Nobel Prize in Physics

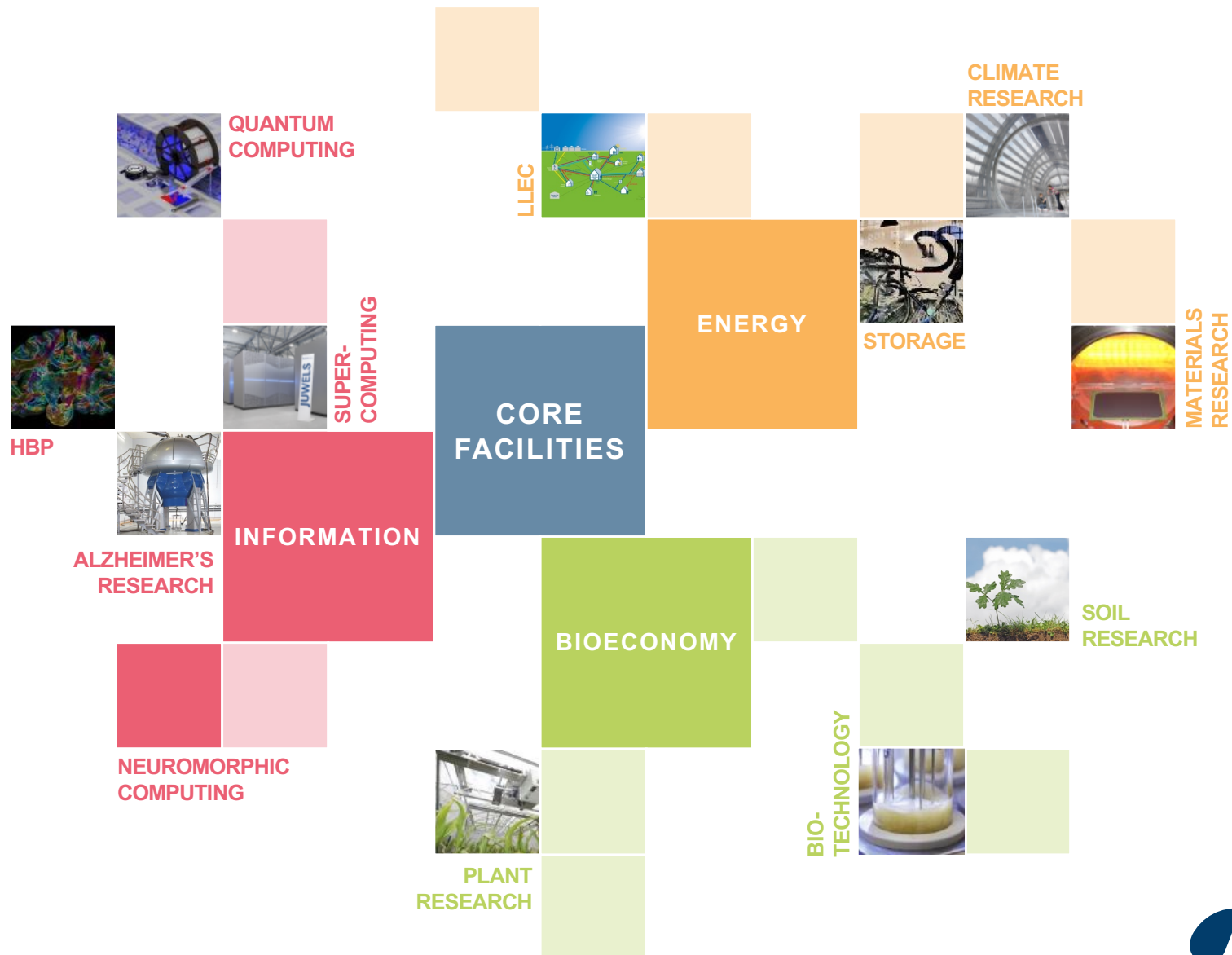
- 2007: Prof. Peter Grünberg

ERC Advanced Grants – Prestigious European research grants

- 2018: Prof. Peter Wasserscheid
- 2018: Dr. Martin Schultz
- 2016: Prof. Hans Ströher
- 2012: Prof. Rafal Dunin-Borkowski
- 2010: Prof. Hans Ströher

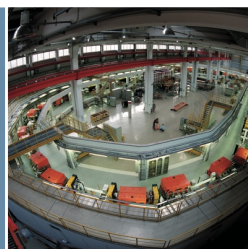


STRATEGIC PRIORITIES

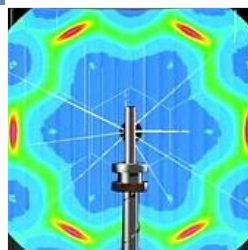


IMAGING CORE
FACILITY

CORE FACILITIES



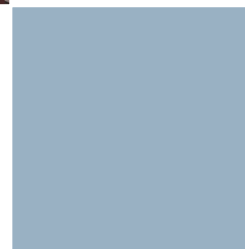
HADRON
RESEARCH



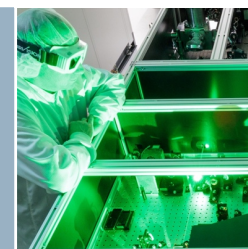
NEUTRON
RESEARCH



SIMULATION
SCIENCE



JUSPARC



ELECTRON
MICROSCOPY

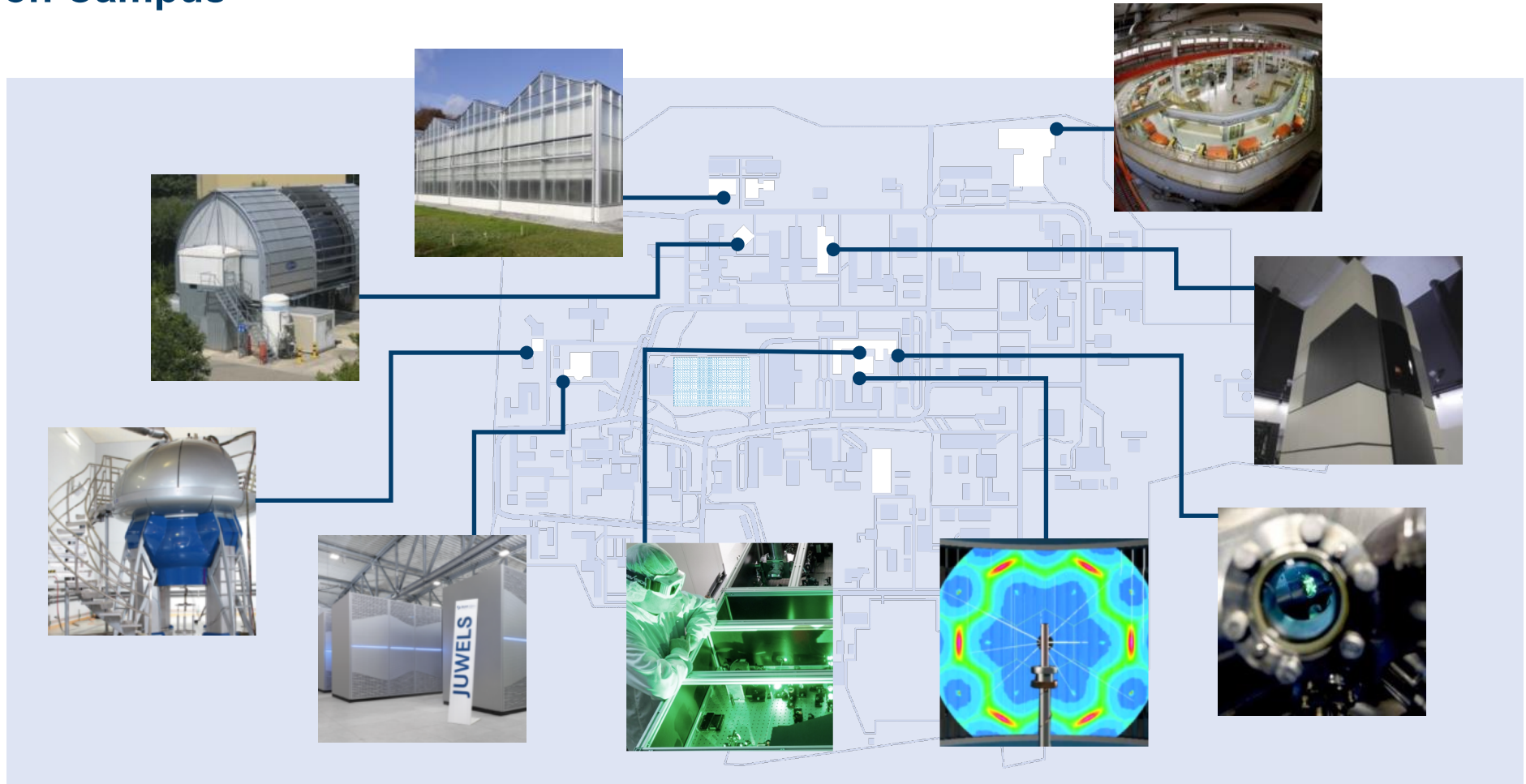


HNF

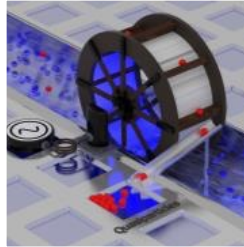
BIOMOLECULAR
NMR CENTER

LARGE-SCALE INSTRUMENTS

on Campus



INFORMATION



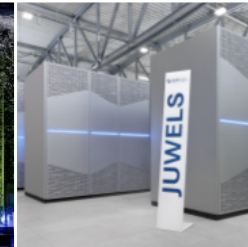
QUANTUM
COMPUTING



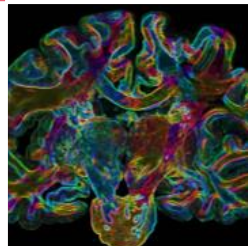
ALZHEIMER'S
RESEARCH



NEUROMORPHIC
COMPUTING



SUPER-
COMPUTING

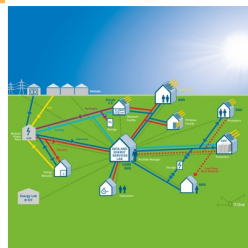


HBP

ENERGY



STORAGE



LLEC

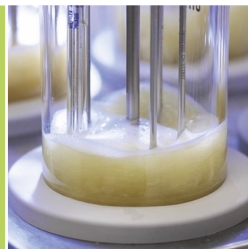


CLIMATE
RESEARCH

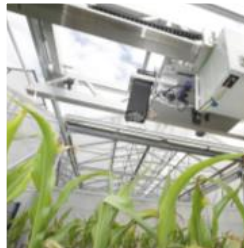


MATERIALS
RESEARCH

BIOECONOMY



BIOTECHNOLOGY



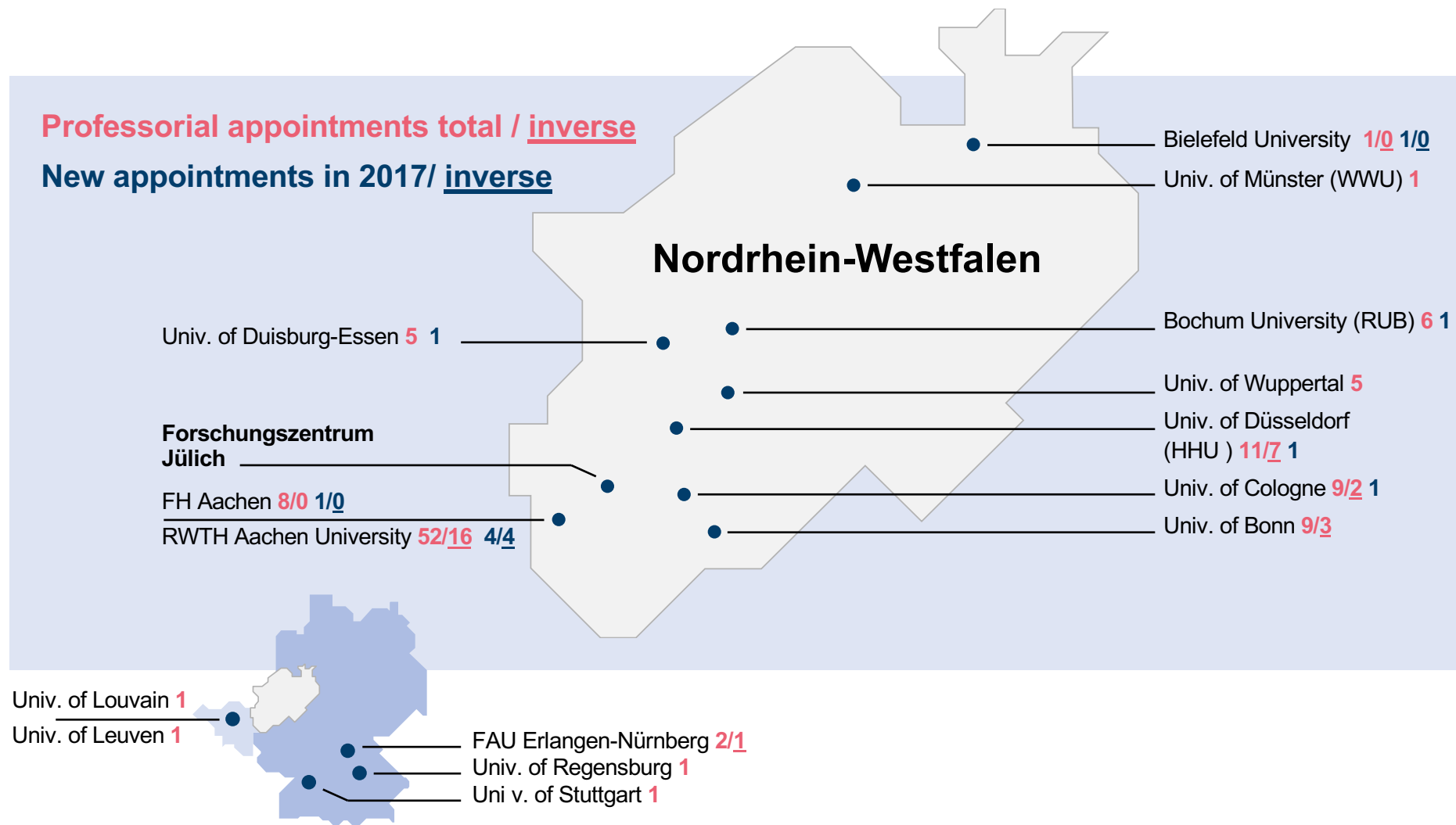
PLANT
RESEARCH



SOIL
RESEARCH

NATIONWIDE NETWORK

Research and Education



SUMMARY



- With more than 5,900 employees, Forschungszentrum Jülich is one of the largest research centres in Europe
- Interdisciplinary research in the fields of energy, information, and bioeconomy
- Around 1,000 national and international collaborations with universities, research institutions, and industry, and participation in pioneering international projects
- Further information is available at: www.fz-juelich.de



Forschungszentrum Jülich's Social Media Communication

Forschungszentrum Jülich uses social media in order to make contact with different target groups such as science, politics, and young scientists.

On social networking sites, Jülich informs its fans, followers, and subscribers of current research results as well as activities and events on the Jülich research campus.

Networking sites where Forschungszentrum Jülich is currently an active member

➤ **Facebook:** On Facebook, Forschungszentrum Jülich posts pictures and videos of research at Jülich and invites its fans to attend events on campus. It also links to the Facebook pages of other Helmholtz centres.

➤ **Twitter:** Twitter is often the first channel through which Jülich reports any news. In addition, readers will find information on publications as well as live updates posted directly from some events. We are also happy to share interesting news published by others.

➤ **YouTube:** On its YouTube channel, Forschungszentrum Jülich presents individual scientists and what they love about their work. Videos about Forschungszentrum Jülich itself are also published on YouTube.

➤ **Research Gate:** Numerous researchers from Jülich have a Research Gate profile, a social network for science and research. Here they upload their publications and discuss their

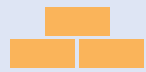
[Press releases](#)[Multimedia](#)[Social Media](#)[Web Stories](#)[Magazines and Brochures](#)[Corporate Communications](#)

WEB APPS

Forschungszentrum Jülich makes

JÜLICH AACHEN RESEARCH ALLIANCE

Successful Cooperation with RWTH Aachen University



Founded

August 2007



Employees

approx. 4,800



Budget

approx. € 500 million

Research Priorities

JARA-BRAIN

(investigation of psychological and neurological diseases)

JARA-ENERGY

(energy research for the future)

JARA-FAME

(particle physics and antimatter)

JARA-FIT

(new approaches in information technology)

JARA-HPC

(computer simulation with supercomputers)

JARA-SOFT

(research into soft matter)

COOPERATION



- **JARA:** alliance with RWTH Aachen University
- Partnerships with regional universities:
121 joint professorial appointments
- **Cooperation with international large-scale projects:**
computing the brain (**HBP Flagship**)
quantum research (**Quantum Flagship QF**)
fusion research (**ITER**)
hadron research (**FAIR**)
neutron research (**ESS**)
supercomputing (**PRACE**)

Total of approx. **1,000 collaborations**