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Germany Inspires Innovation — Welcome to Europe's Leader in Science

AN INITIATIVE OF THE

Federal Ministry of Education and Research

Research in Germany

Land of Ideas

www.research-in-germany.de

Germany can draw on a rich scientific and cultural heritage: It is a land where tradition and innovation go hand in hand.

Welcome to the Land of Ideas

Excellence in research and development

Germany is the number one location for research in Europe. Germany's unique scientific tradition and great variety of research offer ideal conditions — not only for people with ideas, but also for companies that want to translate these ideas into new products. German inventions and discoveries — such as the car, theory of relativity and MP3 format — have changed the world. Research-intensive products and services contribute 45% to value creation in Germany, more than in any other industrialized country.

"Made in Germany" is a seal of quality

One of Germany's major strengths is translating research findings and development into specific products. Traditionally, such efforts are made in such sectors as electrical engineering and car manufacturing as well as in mechanical and systems engineering. "Made in Germany" is recognized across the world as a seal of quality for sophisticated technology and excellent workmanship. With 396 internationally relevant patents per million inhabitants, Germany far exceeded the European average of 158 in 2007.

Moreover, for more than 20 years, Germany has led Europe in research-intensive key technologies. More biotech companies have been established in Germany than anywhere else in Europe. Additionally, German nanotechnology firms account for roughly half the number of European companies active in this field. Germany sees itself as the "Gateway to Europe." As an export-oriented country, Germany can build on many years of experience in the field of international cooperation.

Looking forward to the future

The German Federal Government recently started several groundbreaking initiatives to further strengthen Germany's level of excellence. With the *High-Tech Strategy* and *Pact for Research and Innovation*, the Federal Government is investing more in research and development than ever before, with a strong focus on partnerships with the industry and international collaborations in key future sectors. The Initiative for Excellence is turning Germany's best universities into top research universities, thereby sponsoring the best brains in the country and attracting talented students and top foreign researchers from all around the world.

Spreading the seads of ideas.

Germany — a leading nation in research funding

The German Federal Government provided funding of roughly 12 billion Euros for research and development in 2009. German companies invested approximately 46 billion Euros in this field. Germany thus takes fourth place internationally, following the U.S.A., Japan, and China. Research expenditure accounts for 2.64% of GDP — the highest percentage since German unification.

Excellence with passion:
In German laboratories top international researchers work closely together combining their various types of expertise.

Research in Germany — Diversity and team work

Creative ideas bear fruit when they are encouraged and promoted in various ways. This also gives unconventional solutions a chance. The exceptional diversity of the German research system is the result of Germany's federal structure and outstanding scientific traditions developed over the centuries. The unique system rests essentially on three pillars: public-sector research including universities and universities of applied sciences (Fachhochschulen), private-sector research in companies and research in non-university research institutions.

Four big names for cutting-edge science

The third pillar includes the four major German research organizations. They are named after Hermann von Helmholtz, Max Planck, Joseph von Fraunhofer and Gottfried Wilhelm Leibniz — four German scholars pivotal in shaping modern science and technology.

Research activities at the 16 centers of the **Helmholtz Association**, which are active in the fields of science and technology, as well as medicine and biology, mainly involve large-scale, cutting-edge scientific research facilities. This excellent infrastructure is available to national and international research groups. The **Max Planck Society** focuses on basic research. Its 80 institutes are internationally renowned for their quality research in the fields of physics, chemistry, biology, medicine, social sciences and the humanities. The emphasis of the **Fraunhofer-Gesellschaft** is on application-oriented research that places its 60 institutions at the forefront of innovation. All of them are involved in contract research for industry, the service sector and public authorities. The **Leibniz Association** combines 86 highly specialized independent institutes whose focus is linking scientific excellence with research-based advice for industry, society and politics.

Cooperation is a matter of course

Beside these four organizations, there are more than 450 foundations and ten scientific academies providing support for research in Germany. The **Deutsche Forschungsgemeinschaft (DFG)** is the central, self-governing research-funding organization in Germany. Its mission is to fund and promote all fields of science and the humanities. The **German National Academy of Sciences Leopoldina** has represented German researchers on international bodies since 2008. In cooperation with the **German Academy of Science and Engineering (acatech)** and the science academies of the German states (Länder), it provides policy-makers and the general public with science-based advice on technology-related issues and promotes dialog between science, industry, politics and society. Federal and state institutes conduct research in fields that involve government tasks in the areas of nutrition, agriculture risk-prevention and more. This diverse research environment makes it a matter of course for German researchers to engage in research collaboration.

"It is a great honor for me to receive the Alexander von Humboldt prize. With this prize budget we have a lot of new opportunities to make ourselves even stronger and to become one of the key players in this field worldwide. For me personally that is an interesting opportunity to set up an internationally renowned working group."

Prof. Dr. Gerard J. van den Berg, Netherlands, is an Alexander von Humboldt Professor in Econometrics and Empirical Economics at the University of Mannheim. His primary research interests are in health and labor economics.

www.helmholtz.de
www.mpg.de
www.fraunhofer.de
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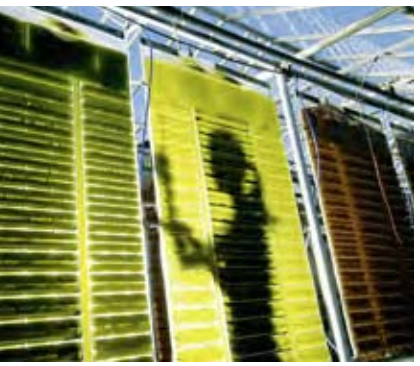
www.acatech.de
www.leopoldina-halle.de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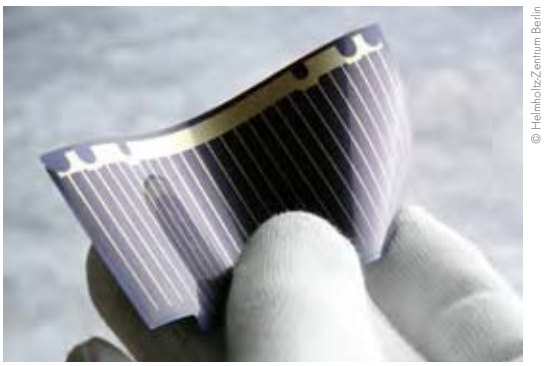
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The High-Tech Strategy for Germany — A successful model for Europe

Climate-protection and energy. Mobility and security. Health and communication. The challenges facing the global community can only be mastered if enormous progress is made in research and innovation. With its *High-Tech Strategy*, the German Federal Government provides a framework that involves all political players and focuses the national strengths in science, technology and industry on those issues vital for our future. The aim is to open new leading markets and encourage further cooperation between science and industry through networks and clusters. As a result, excellent research results can be translated even more quickly into new technologies, products and services.

The High-Tech Strategy is a success story: German companies increased their investments in research and development 19% between 2005 and 2008. The number of industry researchers, lab assistants and technicians employed in 2008 rose by 12% compared with 2004. Moreover, the High-Tech Strategy also extends beyond Germany. The European Commission recently initiated a similar process with its "Europe 2020" strategy. Excellent universities, research centers and companies in European partner countries are networking their activities on important forward-looking topics under the umbrella of the European Institute of Innovation and Technology (EIT) and Joint Technology Initiatives (JTI).

Small- and medium-sized companies — Drivers of German innovation

Innovation in Germany is strongly driven by small- and medium-sized enterprises (SMEs) that translate results of academic research into marketable technologies. Consequently, a crucial instrument within the High-Tech Strategy is the SME funding initiative, "KMU-innovativ." Since 2007, with this program, the German Federal Ministry of Education and Research has helped companies shoulder risks related to cutting-edge research. So far, approximately 450 projects with a financial volume of 300 million Euros have been funded, covering such areas as biotechnology, technologies for energy and resource-efficiency, information and communication technologies, nanotechnology, optical technologies, production technology, security technologies and microsystems.

Leading-Edge Clusters — A strong interface with the industry

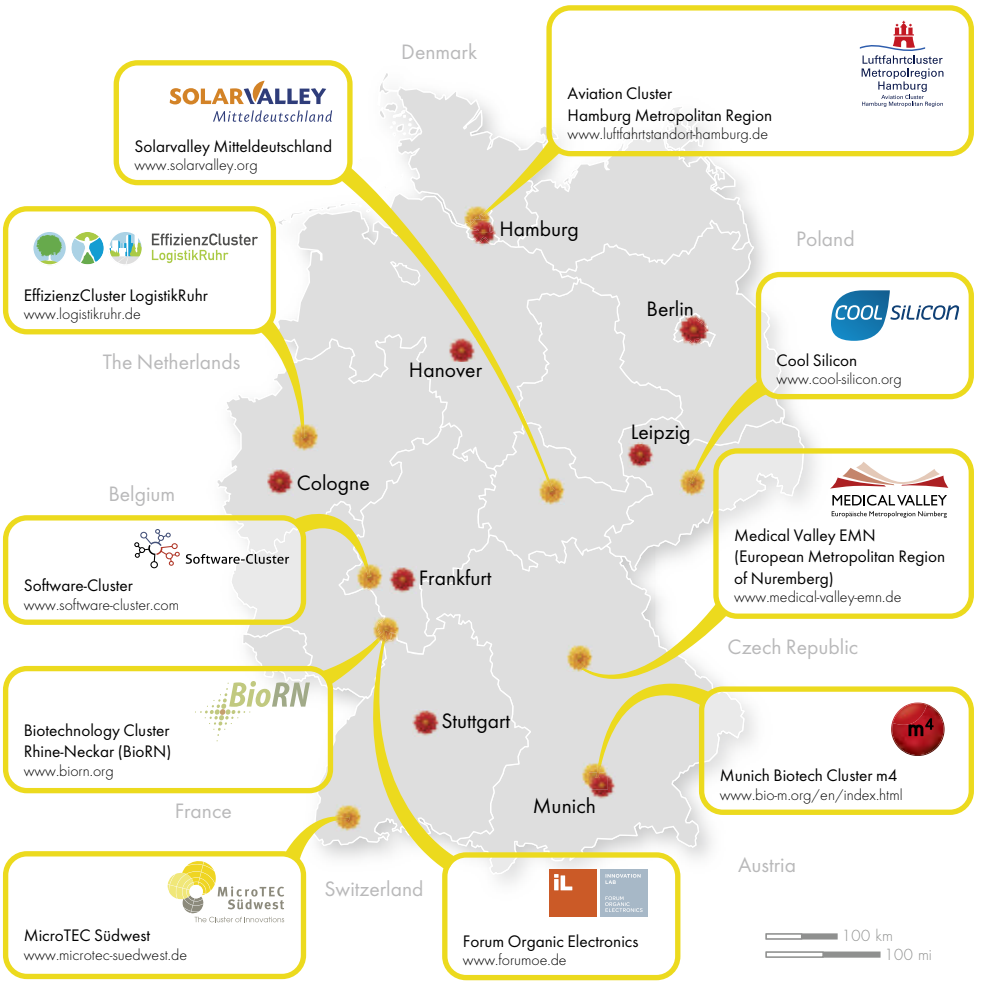
The Leading-Edge Cluster Competition is another central instrument within the High-Tech Strategy of the German Federal Government. It promotes innovative clusters that bring together all stakeholders throughout the value chain — from idea to product to user — on a long-term basis. This will generate synergies and accelerate the commercialization of new products, processes and services. Ten Leading-Edge Clusters have already been selected in two rounds of the competition. Each cluster receives funding of 40 million Euros for five years, among them the

SMEs are highly creative

Funding of roughly 300,000 Euros helped the Bavarian biotech company Pharmazell GmbH to produce bile acids using genetically modified bacteria. These acids, which help to treat not only gallstones but also cirrhosis and other diseases of the liver, were previously produced by means of complex chemical processes. The biotech company Matricel received roughly 500,000 Euros for the production of specific base material for regenerative medicine made from high-purity porcine collagen that can be used as guide structures for the regeneration of nerve fibers.

www.hightech-strategie.de
www.spitzencluster-wettbewerb.de
www.kmu-innovativ.de

Germany's Leading-Edge Clusters



With the High-Tech Strategy the German Federal Government has formulated clear objectives and concrete action plans to foster innovation in five fields of action: Climate/Energy, Health/Nutrition, Mobility, Security, and Communication.

Biomass is an important renewable energy source of the future. The High-Tech Strategy is leading the way in this field: German scientists developed a reactor platform for the production of algae biomass from CO_2.

Biotech Cluster in the Munich region, Solarvalley Mitteldeutschland, or the Cool Silicon Cluster in Saxony. The third round of the Leading-Edge Cluster Competition is planned for late 2010.

Translating good ideas into practice — Highlights from the High-Tech Strategy

Energy — 25,000 hours of continuous operation set a new world record for high-temperature fuel cells. It was established at the Research Center Jülich of the Helmholtz Association in June 2010. With their broad expertise in materials research, computer simulation and engineering sciences, the researchers in Jülich are making a decisive contribution in the development of diverse types of fuel cells that provide an efficient and practical alternative for stationary and mobile electricity generation.

Climate — The new Institute for Advanced Sustainability Studies (IASS) in Potsdam (near Berlin) is devoting itself to the great processes associated with climate change. The institute is an attractive place to work for visiting scientists from all over the world, thanks to the international reputation of the Institute's founding director Prof. Dr. Klaus Töpfer, former Executive Director of the United Nations Environment Program, as well as its partnership with the renowned Potsdam Institute for Climate Impact Research (PIK) and the German Research Center for Geosciences (GFZ).

Mobility — The future of the automobile belongs to hybrid and electrically powered vehicles. Not surprisingly, the German motor vehicle industry is highly active in this field. Daimler AG,

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"Close and efficient cooperation between science and industry is the best way to ensure that our High-Tech Strategy is successful. We are working together to transform today's visions into tomorrow's reality — for example through the Leading-Edge Clusters."

Anne-Kathrin Deutrich
is Chair of the Executive Board of Testo AG, which is a member of MicroTEC Southwest — one of the winners of the Leading-Edge Cluster Competition funded by the German Federal Ministry of Education and Research. She is also a Member of the University Council of the University of Freiburg.

The Alfred Wegener Institute for Polar and Marine Research is leading in climate research. Balloon-based measurements of atmospheric parameters over the Arctic help with the construction of climate models.

Germany is the number one location for automobile technology. In recent years it also has become a pioneer in all fields of sustainable mobility, such as the engineering of clean, electrically powered cars.

for example, is cooperating with Evonik Industries AG in East Germany to develop a technology for the production of lithium-ion batteries. The "Innovation Alliance Lithium-Ion Batteries" is focusing on the next-generation-but-one of storage batteries. Scientists from various Fraunhofer institutes in Germany and the United States are cooperating closely with their US colleagues within the framework of the "Alternative Energy Technologies for Transportation" program.

Security—The failed attempt to blow up a plane over Detroit on Christmas Day in 2009 has sparked new calls to reinforce airport security. However, highly secure, state-of-the art full-body scanners have caused public outrage because they virtually undress people. Researchers from the Institute of Photonic Technology in Jena are developing a camera that performs the screening passively by tracing the shadows of suspicious objects on a person's terahertz radiation, which the human body emits naturally in the form of heat. This eliminates the exposure to radiation and the naked appearance of the recorded images. The "THz-Videocam" is one of over 70 projects currently funded under the "Research for Civil Security" program of the German Federal Government that aim to develop innovative technologies to protect people in our modern, complex societies against terrorism, organized crime, natural disasters or large-scale accidents.

Health Research—Personalized medicine will be standard practice one day, but it requires efficient translation of knowledge from bench to the bedside. The German Federal Government will therefore establish new research structures in this area so patients can benefit more quickly from the results of research. For example, partners from research institutes, universities and university hospitals at the six "German Centers for Health Research" focus on the major common diseases of diabetes and neurodegenerative diseases as well as infections, cancer, heart and lung diseases. These will be National Centers of Translational Research that draw on various disciplines and foster interdisciplinary cooperation. Systems biology produces decisive progress in this area: Medical and pharmaceutical researchers are working together with experts in the fields of molecular biology, mathematics, computer science and engineering. Seventy groups from 41 institutes are cooperating in Germany's unique "Virtual Liver Network" in order to develop the first computer model of a complete human organ. This will enhance our understanding of the origin of diseases and the effects of drugs and make it possible to develop customized drugs more quickly and more economically.

Information and Communication Technology—The Max Planck Center for Visual Computing and Communication links two of the world's leading institutes: the Max Planck

"Real applications like LiSA show the potential of service robotics for real tasks. They bring the new market for service robotics closer!"

Dr. Roko Tschakarow
Head of Business Unit/Head of Sales, Mechatronic Components and Solutions, SCHUNK GmbH & Co. KG in Lauffen/Neckar, which participated in the development of LiSA.

German companies are at the forefront of developing technologies for renewable energy production. This Solar Mover made by the Solon Company in Berlin is just one out of many exciting innovations in this field.

Institute for Computer Science in Saarbrücken and Stanford University. The Center serves primarily to support particularly well-qualified young scientists in a key area of computer science. It enables post-doctoral researchers to conduct independent research with a small working group under the supervision of a mentor from Germany and a mentor from the United States for up to five years, initially in the United States and subsequently in Germany.

Key technologies "Made in Germany"

Production Engineering—LiSA is operational 24 hours a day, reliable, easy to operate and doesn't shrink from work involving hazardous substances. These are the best qualities for assisting researchers life-science company laboratories. LiSA is a mobile robot that can take over limited tasks independently and move around to individual experimental stations. It was developed by a joint research project headed by the Fraunhofer Institute for Factory Operation and Automation. LiSA shows that solutions from robotics can be considerably more flexible and economical than classical automated solutions.

Nanotechnology—Nano particles can serve as helpers in the field of medicine. For example, Magnetic Particle Imaging (MPI) technology is a fundamentally new method of medical imaging invented by Philips Research in Hamburg that measures the concentration of ferrous oxide nanoparticles previously injected into the body. MPI can depict processes in real time in either heart or blood vessels.

Innovative Services—In the near future, even people who require care and assistance will have the opportunity to grow old in their own homes. Industry research partners from Fraunhofer-IMS in Duisburg have developed SAMDY (Sensor-based Adaptive Monitoring System) to support nursing staff in their demanding work. Wireless sensors provide a home station that relays 24/7 data about potentially hazardous situations regarding the health of old or sick individuals. The information is processed for the nursing staff and fed directly into the documentation and billing system. Staff can therefore devote more time to the patient.

Biotechnology—"Biomass instead of oil." This is the motto for the green chemical factory of the future. But transferring biotechnological processes from the laboratory to industrial applications is often more difficult than one might imagine. The Chemical-Biological Process Center (slated for Leuna, a chemical site with a long-standing tradition), is intended to solve this problem. Beginning in 2011, research institutes as well as companies will be able to test and develop their biotechnological processes at this pilot plant; the only one of its kind in Europe.

"I like being motivated by real-world problems. At Fraunhofer I have the opportunity to pursue a highly pragmatic approach to challenging research questions close to industrial applications. My colleagues and I do not just want to solve problems, we are also keenly interested in the benefit the solutions will yield."

Dr. Kristian Kersting who started his research career in Germany and the USA (MIT) is currently being funded by the Attract program, which gives outstanding scientists the chance to set up their own working groups at a Fraunhofer Institute.

www.bmbf.de/en/1439

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Minister Annette Schavan welcomes young international scholars on the roof terrace of the Reichstag building, seat of the German parliament.

The German research system is highly efficient and internationally competitive

Interview with Annette Schavan, Federal Minister of Education and Research

Your research funding is considered ground-breaking. How do you view the situation to date?

Extremely positively! Our High-Tech Strategy is setting the course in the high-demand areas of health, climate and resource protection, mobility and security. We have successfully established innovation alliances between science and industry, thereby focusing on networking, clusters and small- and medium-sized enterprises. The Pact for Research and Innovation has strengthened non-university research institutions; and our Initiative for Excellence has once again positioned our universities at the center of the German science system.

What are the thematic strengths of research in Germany?

Germany is European leader in the field of environmental technology, thanks to a legal framework and government research funding that encourage innovation. We are pioneers in research into renewable-energy use. Our health research is on the way to ensuring the strategic networking of research institutions, universities and teaching hospitals. Medical technology is the backbone of the German health industry. Germany holds a leading position in the key technologies. For example, German companies are among the world leaders in optical technologies. In the field of biotechnology, Germany is the leading location in Europe.

How can the state and industry cooperate even better to ensure research excellence?

We are increasing government funding for R&D. This, in turn, will trigger more R&D investments on the part of industry. Cooperation between industry and science also plays a central role in the Pact for Research and Innovation. The Initiative for Excellence serves to intensify cooperation with industry through measures that encourage the transfer of technology. More than half of the graduate schools are involved in cooperation projects with business partners, such as internship or scholarship programs.

What are the markers for success?

In recent years, we have been delighted to see four German scientists win the Nobel Prize: 2005: Theodor W. Hänsch/Physics (2005); Gerhard Ertl/Chemistry (2007) and Peter Grünberg/Physics (2007); Harald zur Hausen/Medicine (2008). Germany can also be proud of its patents

record. Research institutions concluded 679 IPR agreements in 2009. This means we are first in Europe, and third worldwide behind only the United States and Japan.

What is the international response to the Initiative for Excellence and the Pact for Research and Innovation?

Thirty-seven universities are currently receiving funding under the Initiative for Excellence. The aim is for them to establish themselves as leading international institutions performing cutting-edge research. Thanks to the Initiative for Excellence, we have increased the attractiveness of German universities for students and scientists from both home and abroad. Roughly 4,200 researchers have been recruited under the funded projects so far, with approximately 25% of them from abroad. Approximately 85% of the reviewers involved are from other European countries or North America, with most of the professors and post-docs recruited by the clusters of excellence and graduate schools from the United States. India and China take the lead with regard to the number of doctoral students. The Alexander von Humboldt professorships are a further instrument for attracting top researchers from abroad.

"We all benefit when young, international scholars research together. Welcome to the Land of Ideas."

What are the priority areas for research cooperation with the United States and Canada?

The United States is one of our most important partner countries. German and American scientists cultivate a lively exchange – on almost all relevant topics and at all career levels. There are currently over 1,400 cooperation projects. More than 50 cooperation agreements between individual institutions form the basis for a close network. Priority areas are space activities, environmental technology, as well as climate and environmental research. This close cooperation is also evident in the joint use of large research facilities in the United States and Europe. In the future, we will also cooperate more closely on the major issues of the 21st century, climate and energy research, as well as in various areas of health research. Our relationship with Canada is also characterized by a long history of joint research projects.

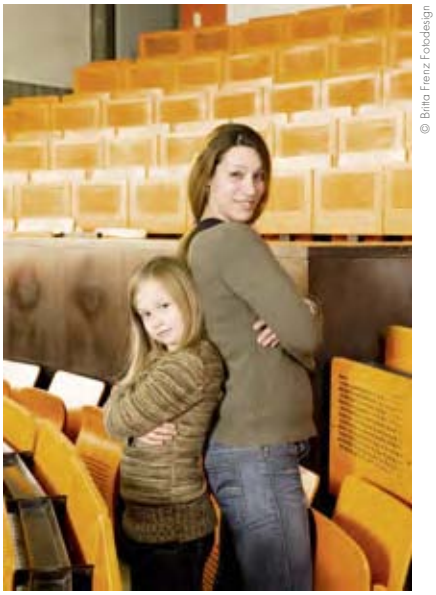
"Investments in research and innovation take priority — precisely in times of economic crisis. We will invest a further 12 billion Euros in education and research over the next four years."

How do you rate the development of the European Research Area?

The key aims of the European Research Area are the improved use of scientific resources, increased competitiveness, better coordination of research activities at national and European levels, the development of human resources, as well as steps to attract the best researchers worldwide. Germany plays a leading role in the process of European unification, and we are integrating international research partners in European projects. Russia and Israel are prominent examples. Germany has been Israel's most frequent partner in cooperation projects in both the 6th and 7th Research Framework Program. Germany is actively involved in strategic networking with Russia, among other things through its coordination of research policy dialog involving a wide range of stakeholders.

What are the next priorities in your policy?

We will continue to link science and industry and to pool strengths. This is the only way to translate ideas into successful products. We will introduce and encourage new forms of cooperation, launch new innovation alliances for the markets of tomorrow and continue to expand clusters and networks, involving small- and medium-sized enterprises. Our universities and research organizations should attract young researchers and give them the space to develop their scientific talents and creativity in Germany – the "Land of Ideas." At the international level, we will continue to expand our cooperation with developing and emerging countries. Research for sustainable development will play an increasingly important role in this context.



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Germany offers perfect conditions to do research. This also means that research institutions and universities make it possible to reconcile family and career.

Germany — An excellent location for research and teaching

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"Whenever I talk about the Initiative for Excellence in the United States, I meet with tremendous interest in this competition and hear great praise for it. Cutting-edge research in Germany has thus become much more visible internationally."

Prof. Dr. Ing. Matthias Kleiner
President of the Deutsche Forschungsgemeinschaft

Initiative for Excellence:
www.dfg.de/foerderung/programme/exzellenzinitiative
www.wissenschaftsrat.de/arbeitsbereiche-arbeitsprogramm/exzellenzinitiative/

Funding opportunities:
www.kisswin.org
www.daad.de
www.humboldt-foundation.de
www.dfg.de

Job and family:
www.research-in-germany.de/faq

German universities lay the foundations for outstanding scientific careers and achievements. Twelve out of every 100 graduates go on to take a doctorate — this is world's highest ratio. Another criterion for measuring the reputation of a research nation is the number of scientific publications per million inhabitants. In Germany, this number increased by 20% to 1,046 between 2000 and 2008. This is more than Japan (623) and only slightly less than the U.S.A. (1,077).

Consequently, universities and renowned non-university research institutions (such as the Max Planck Society and the Helmholtz Institutes) attract talented researchers from all over the world. Currently, more than 26,000 international scientists are working in Germany. Among them are some of the world's most-cited researchers, such as Professor Simon White, Director at the Max Planck Institute for Astrophysics in Munich, and Professor Iain Mattaj, Director General of the European Molecular Biology Laboratory (EMBL) in Heidelberg.

Outstanding conditions for a career in Germany

Thanks to the Initiative for Excellence, German universities are becoming even more visible internationally — and more competitive. So far, 1.9 billion Euros have been granted to 85 institutes at 37 universities. Funding has been provided to outstanding areas in all disciplines, ranging from the Graduate School of Computational Engineering in Darmstadt to the "Oceans of the Future" research project in Kiel. Non-university research is receiving large grants within the framework of the Pact for Research and Innovation. The dynamism of the German research landscape has already won the approval of high-caliber scientists from the United States.

Marc Levine has opted for a career in Germany. The renowned mathematician from Northeastern University in Boston, Massachusetts, moved to Essen in 2009 to set up a working group on algebraic geometry. Levine will hold a generously endowed Alexander von Humboldt professorship, one of the instruments with which Germany is attracting top scientists. The successful applicants receive up to 5 million Euros provided by the Alexander von Humboldt Foundation for five years.

Child or career? In Germany you can have both

German research institutions and universities help women and men reconcile family and a science career. For example, the Helmholtz Association already has its own nursery facilities in all of its institutes. The Max Planck Society is also steadily expanding its facilities in order to help its staff with child-care matters.

Germany — A strong player in the global scientific community

© Yavuzagrafie, Deutscher Pavillon

German scientists and entrepreneurs present their cutting-edge research at conferences and trade fairs worldwide, for example at the Expo 2010 in Shanghai in the impressive German Pavilion.

Germany is open to new ideas. German science seeks contact with the best scholars worldwide and welcomes young, talented researchers. Numerous public and private funding programs ensure a lively exchange of knowledge. Every year, the German Academic Exchange Service (DAAD), with branch offices in San Francisco and New York, supports 21,000 Germans during their stays at research institutions abroad, while also helping 36,000 foreigners to come to Germany. The Heisenberg and Emmy Noether Programs enable young researchers to work independently in Germany for a period of several years. The Leibniz Association, Max Planck Society and Fraunhofer-Gesellschaft send doctoral students abroad and welcome guests from all over the world. The states (Länder) have also established numerous cooperation programs in the scientific field.

Germany is the gateway to European research

Between 2007 and 2013, the European Union is providing funding of 54.4 billion Euros for innovative projects under the 7th Research Framework Program (FP7). Germany is contributing almost 20% of the funds, with German researchers involved in more than 70% of the projects. Non-European countries are also involved in the projects. First and foremost, the United States. For scientists from the United States, access to Europe is often via Germany; evidenced by the EU-funded large-scale project "Sybilla." In this program, the Max Planck Institute for Immune Biology, the German Cancer Research Center and Magdeburg University are cooperating with two institutes at Harvard Medical School and 12 other European partners to develop new approaches to treating auto-immune diseases.

German universities are present all over the world

Over the last ten years, German universities have established more than 60 study courses worldwide — supported among other things by the DAAD. There is a particularly high demand for German training in the field of engineering as well as in economics and the natural sciences. The German University Cairo and the German-Jordanian University have met with keen interest in the Middle East, while the German-Turkish University in Istanbul is currently being established. The German universities are actively courting the brightest brains. To this end, they launched the GATE Germany initiative that seeks contacts with scientists in countries such as China, South Korea, Brazil and India. In addition, German researchers present their cutting-edge work at trade fairs and events worldwide, including the fields of nano- and environmental technologies.

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(Exchange opportunities for researchers)

Well-trained skilled workers are of key importance for a high-tech location like Germany.

Quality training "Made in Germany"

"We are impressed that the German government supports the internationalization of German training providers by establishing the initiative iMOVE. As a neutral and independent government body, iMOVE promotes international cooperation and facilitates business relations among companies and organizations in the field of vocational and technical training. We recommend using iMOVE services. Working with a German partner has opened up new and exciting business opportunities for us".

Dr. Steve Lai
Chief Executive Officer (CEO), PSB Academy Pte. Ltd., (A member of TÜV SÜD Group), Singapore

In Germany, not only academia generates top professionals. Germany's unique vocational education and training system is very highly regarded internationally and produces excellent specialists — from the assistant in the live sciences lab to the IT systems engineer. Under the so-called Dual System, young people continue to attend school part-time alongside their practical training in a workshop or company. At these vocational schools, they not only gain a specialist's theoretical knowledge but also communicative and social skills. This gives young employees more comprehensive training and better chances in the labor market. Furthermore, the standardized final qualifications for the Dual System's approximately 350 training occupations mean their performances are comparable. On the other hand, by providing two to three years of in-company training, employers can ensure the availability of the next generation of highly qualified staff — without the need for extensive recruitment procedures.

Lifelong learning in a changing world

It is essential to continue learning and developing professional skills — especially in times of a rapidly changing working world. The German Federal Government supports this lifelong learning with "continuing education vouchers" for employees with low or medium incomes. The "Local Learning" program is bringing the various education providers together at the local level in 40 selected model towns. The Federal Government's activities are supported by 120 foundations in a unique public-private partnership. Local education-management agencies develop clear, coordinated modules from the wide range of courses offered, thus facilitating access to continuing vocational training.

German-quality training is available worldwide

Companies and organizations worldwide can also profit from Germany's formidable vocational training programs. To this end, the German Federal Ministry of Education and Research launched the initiative "iMOVE" to introduce interested parties abroad to the range of programs and services offered by more than 20,000 public, private and non-profit German education-providers. At the same time, "iMOVE" advises education-providers on how to open up new regional markets worldwide. German education exports have become a profitable sector with an annual volume of 0.7 billion Euros. They have added a new facet to a traditional brand: "Training — Made in Germany."

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