

MAX PLANCK
GESELLSCHAFT



75 YEARS





**INSIGHT
MUST PRECEDE
APPLICATION.**

MAX PLANCK

A brief portrait



'Insight must precede application.' This motto by its namesake, Max Planck, is the Max Planck Society's (MPG) guiding principle. Brilliant minds, a high degree of freedom and excellent working conditions create the foundations for basic research at the very highest level. Thirty scientists have been awarded the Nobel Prize, including scientists from the Kaiser Wilhelm Society (KWG). Basic research provides a pool of ideas and competences which a society can draw on to solve urgent problems. Thanks to federal and state funding, the Max Planck Society is also able to promote 'high-risk' research with long-term prospects.

The Max Planck Society is an internationally recognized, autonomous research organization with a long-standing tradition. In 1948, it succeeded the Kaiser Wilhelm Society (KWG), founded in 1911, which numbered renowned researchers amongst its ranks such as Albert Einstein, Lise Meitner and Otto Hahn, in addition to Max Planck himself. A total of eight researchers from the KWG were awarded the Nobel Prize, while six other Nobel Prize winners conducted a significant proportion of their research at the KWG and made a lasting impact with their involvement in research and administration. As a consequence, Germany was the leading scientific nation in the first half of the 20th century. The period of National Socialism marked a turning point, however, and left the MPG with a problematic legacy. In the course of a comprehensive programme of research at the end of the 1990s, it reappraised the history of its predecessor organization in the Third Reich. Many KWG scientists were involved in the Nazi system in various ways. The Max Planck Society has assumed historical responsibility for this involvement (see also page 46).

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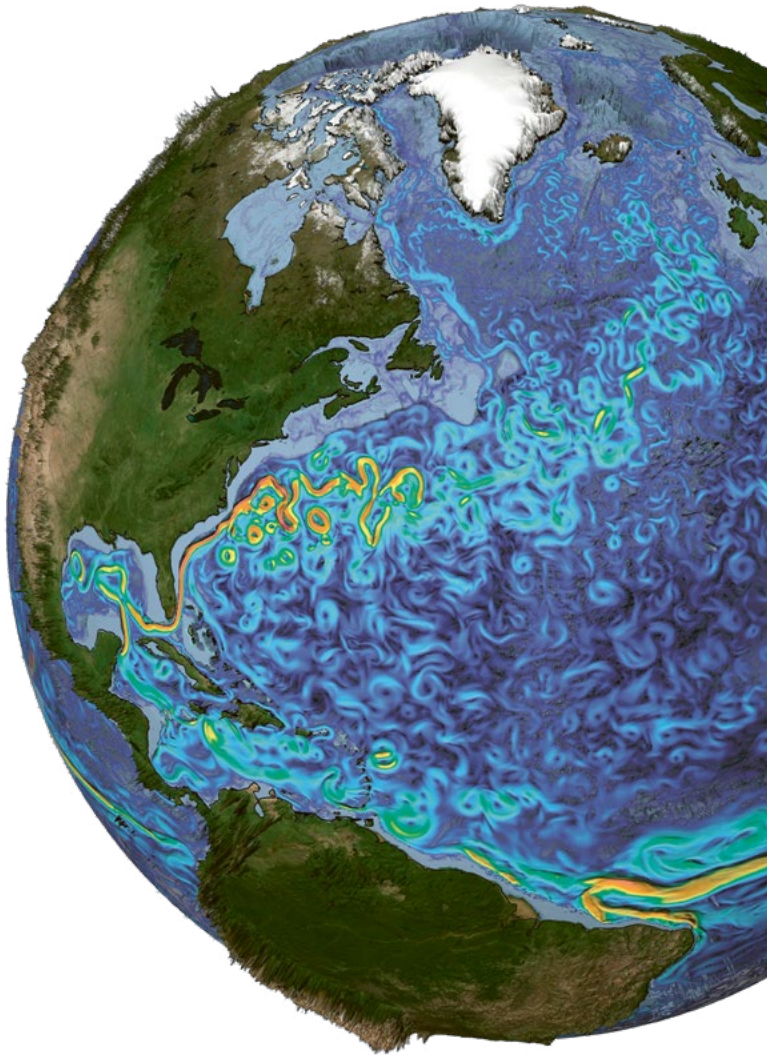
The Nobel Prize winners from the MPG/KWG (as of 2022)



From top left to bottom right:

Svante Pääbo | Benjamin List
Klaus Hasselmann | Emmanuelle
Charpentier | Reinhard Genzel
Stefan Hell | Gerhard Ertl | Theodor
Hänsch | Christiane Nüsslein-Volhard
Paul Crutzen | Bert Sakmann
Erwin Neher | Johann Deisenhofer
Hartmut Michel | Robert Huber
Ernst Ruska | Klaus von Klitzing
Konrad Lorenz | Manfred Eigen
Feodor Lynen | Karl Ziegler | Walter
Bothe | Otto Hahn | Adolf Butenandt
Richard Kuhn | Peter Debye | Otto
Heinrich Warburg | Albert Einstein
Fritz Haber | Richard Willstätter

Pioneering achievements

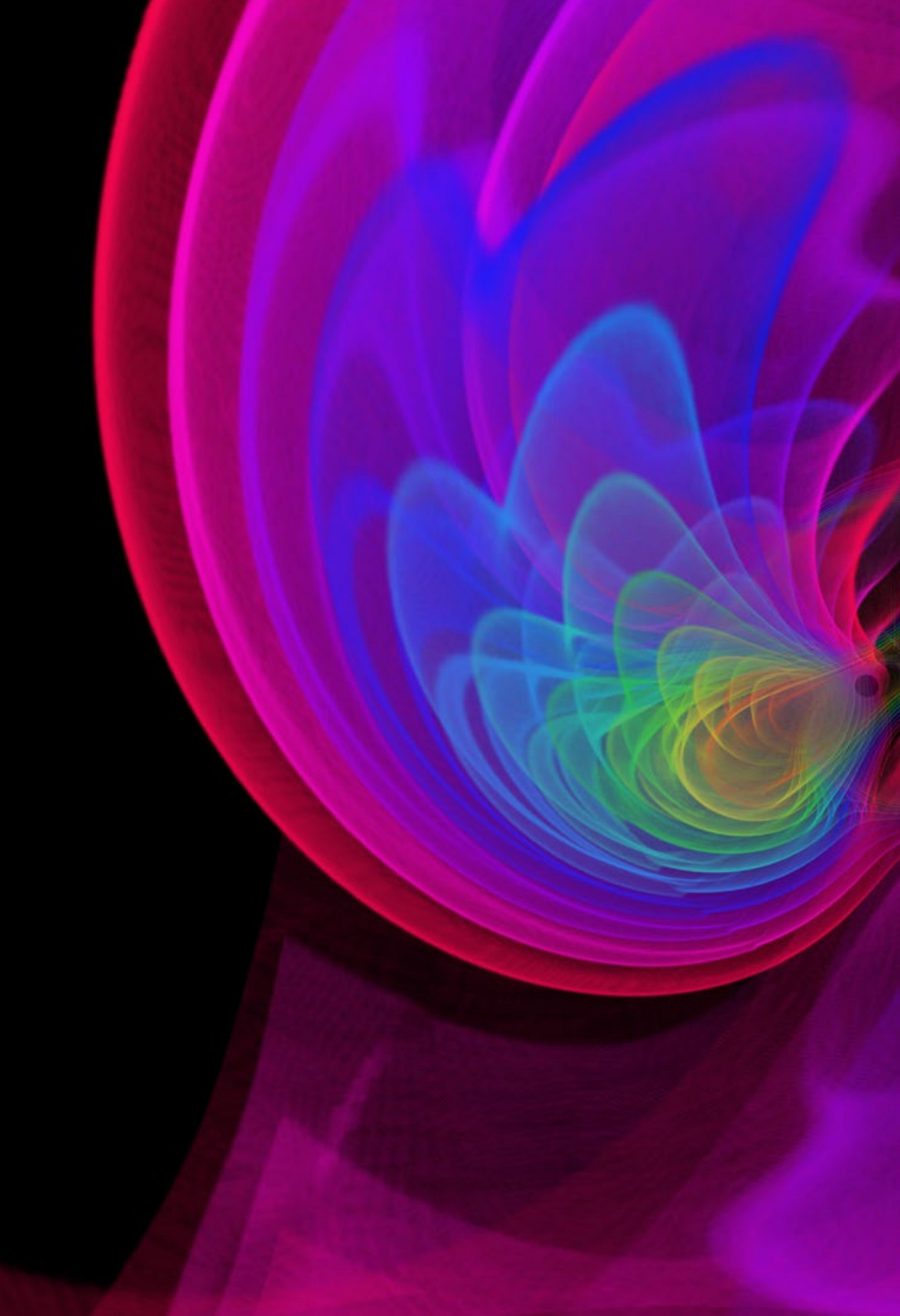


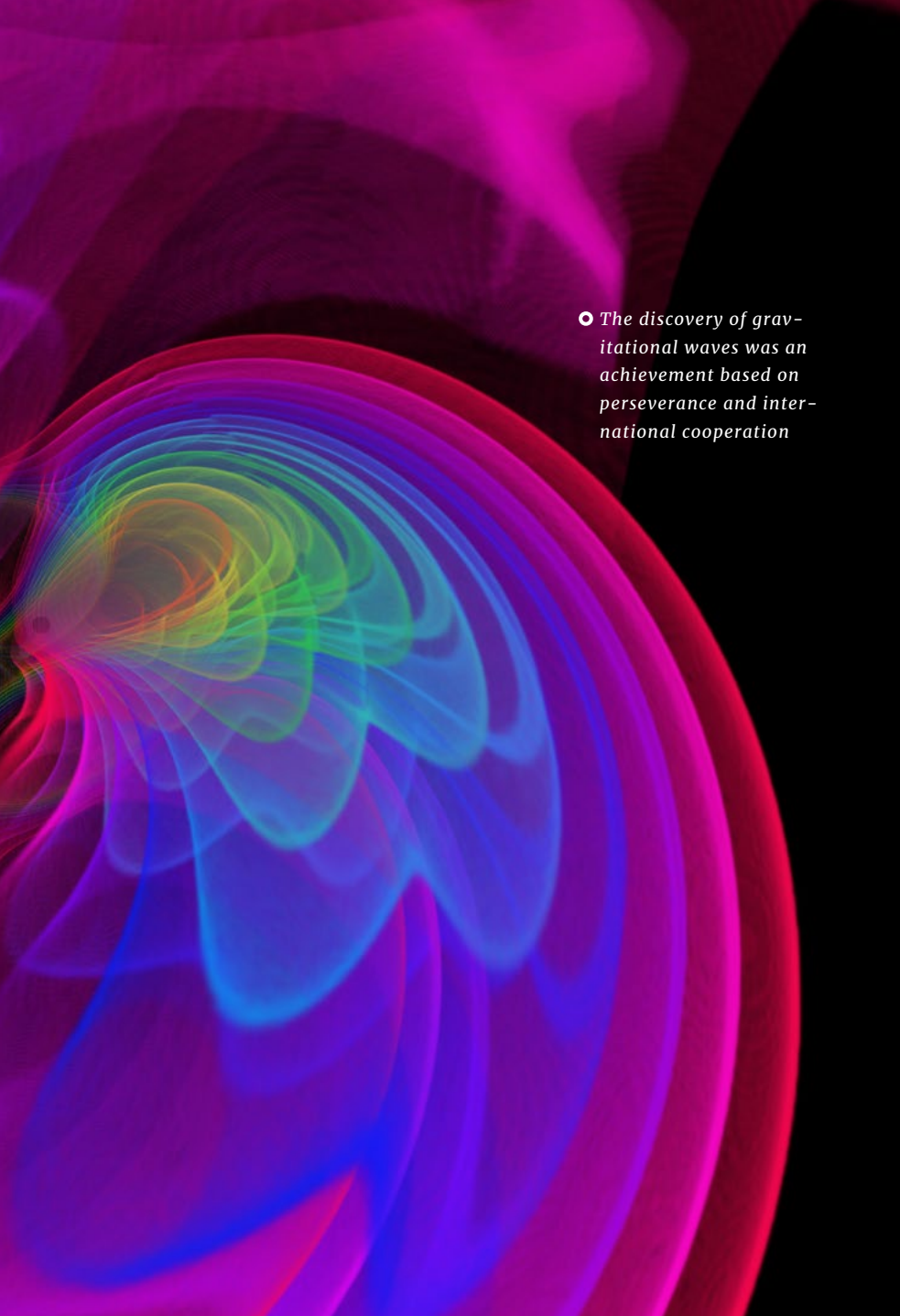
- ◉ *Climate models show how weather and climate are connected*



Pushing boundaries, questioning what is known, researching the unknown: this is what drives us. Max Planck researchers make fundamental contributions to a wide variety of research fields. For example, the founding Director of the MPI for Meteorology, Klaus Hasselmann, developed a model showing the link between short-term weather phenomena and long-term climate trends, such as the rapid temperature fluctuations in the atmosphere which affect long-term changes in ocean temperatures. In doing so, he provided evidence of how, despite short-term weather fluctuations, climate models can deliver reliable predictions, and together with other researchers he demonstrated the link between an increase in the CO₂ concentration in the atmosphere caused by human activities and global warming.

With the discovery of light-activated membrane proteins, Max Planck researchers from the MPI for Biochemistry laid the foundations of optogenetics and revolutionized neurobiological research. As a component of the protein rhodopsin, retinal in the retina of most vertebrates, including humans, is involved in sight. At the start of the 1970s, Dieter Oesterhelt unexpectedly discovered it in the cell membrane of a halo bacterium. Bacteriorhodopsin is a light-driven proton pump. Together with the light-activated ion channels known as channelrhodopsins, discovered in the small freshwater alga *Chlamydomonas* in 2002, it developed into a new tool in neurobiology. Neurons and their circuits can



An abstract visualization of gravitational waves, showing concentric, overlapping wavefronts in vibrant colors like magenta, blue, and green, set against a dark background. The waves appear to emanate from a central point on the left, spreading outwards. The colors transition from bright yellow and green in the center to deep blue and magenta towards the edges, creating a sense of depth and movement.

○ *The discovery of gravitational waves was an achievement based on perseverance and international cooperation*



- *Small algae – big impact: the discovery of light-activated channels laid the foundation for completely novel research approaches*



now be researched non-invasively, using gene transfer to insert the building instructions for the light-activated proteins into the cells.

Max Planck researchers have been heavily involved in numerous breakthroughs in astronomy and astrophysics. These include the first direct evidence of gravitational waves (2015), 100 years after Albert Einstein predicted them, as well as the first image of a black hole (2019). Reinhard Genzel and his research group at the MPI for Extraterrestrial Physics discovered a black hole around 26,000 light years away in our Milky Way and examined it in infrared light. Their findings enabled them to confirm further significant theoretical hypotheses made by Albert Einstein.



● *Searching for clues in ancient DNA: Svante Pääbo deciphered the Neanderthal genome*

Svante Pääbo from the MPI for Evolutionary Anthropology once again revolutionized our understanding of the evolutionary history of modern humans. By sequencing the Neanderthal genome (2010) and with the discovery of the Denisova hominins (2011), he and his colleagues not only launched a new research discipline, paleogenetics, but also rewrote the early history of humankind. By comparing the Neanderthal genome with the genome of today's humans, it was discovered that modern humans, who originate in Africa, and Neanderthals produced offspring when they encountered each other around 50,000 years ago. For this reason, we still have around two percent Neanderthal DNA in our genome to this day.

World-class science



- *In 1909, Adolf von Harnack proposed the foundation of a novel type of research society and also designed its structural principles*

The Max Planck Society adopted the structural principles of its predecessor organization, known as the “Harnack Principle”. This made the Kaiser Wilhelm Society one of the most successful and prestigious research organizations in the world in the first half of the 20th century. These structural principles are

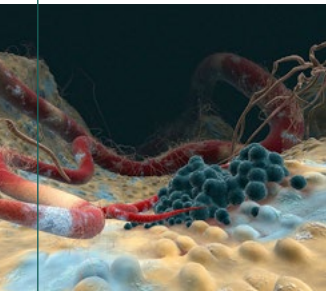
- excellence,
- academic freedom, and
- the ability to innovate.

The freedom to set your own goals and paths of your research, as well as first-class technical resources make the Max Planck Society so attractive to scientists from around the world. As the MPG is a research facility that operates outside universities and is not linked to a curriculum, it is also not obliged to make appointments based on subject and can appoint researchers in completely new, innovative research areas, which often straddle the boundary between different disciplines. Of course, great freedom comes with great responsibility. Researchers have to deliver outstanding results and use the resources entrusted to them with care as well as behave responsibly and in accordance with the rules in all contexts. Every two years, the research performance of each Institute is reviewed by Scientific Advisory Boards made up of renowned international experts. More than 15,000 publications in scientific journals each year – many of these in highly-regarded journals such as Science, Nature and Cell – testify to the outstanding work done at our Institutes. In the principal rankings such as Nature Index and the index of Highly Cited Researchers, the MPG has been among the top five worldwide for many years.

Technology transfer



Equally funded by the German federal administration and its federal states, the Max Planck Society has an annual budget of 1.97 billion euros. In addition, project-specific funding is provided by the federal government, federal states, and the European Union, and revenues are generated from patents and licences, the sale and marketing of which is handled by Max Planck's own technology transfer subsidiary Max-Planck-Innovation GmbH (MI).



- *The anti-cancer agent prevents the tumour from being supplied via the bloodstream*

Max Planck Innovation has supported important technological developments, such as the Flash process, which first made magnetic resonance tomography suitable for use in hospitals and won its inventor the European Inventor Award in 2018. The cancer treatment Sutent, licensed to Pfizer became a blockbuster. And with Evotec, it created one of over 150 MI spin-off companies on the MDAX. In 1993, Nobel Prize winner Manfred Eigen from the MPI for Multidisciplinary Sciences (formerly the MPI for Biophysical Chemistry), not only contributed his patents and the necessary machinery to the new company, but also became a co-founder of the biotech company as an investor.



- *With the FLASH2 method, Jens Frahm and his team achieved a second major breakthrough towards real-time MRI in 2010*

The world's first RNAi medication (Onpattro) is based on a technology which was also developed at the MPI for Multidisciplinary Sciences. The American company Alnylam, a spin-off of the MPG, together with the Massachusetts Institute of Technology (MIT), not only launched the first medication based on RNA interference (RNAi) on to the market, but also the first licensed therapy that is administered using lipid nanoparticles, thus paving the way for the mRNA vaccines successfully used during the Covid pandemic, which also use lipid nanoparticles.

Investment in basic research pays dividends in many respects. With this in mind, with the MAXpreneurs initiative, the Max Planck Society supports Max Planck researchers who want to apply their scientific findings in a spin-off company. With various offers from Max Planck Innovation, the Planck Academy and the Max Planck Foundation, the aim is to strengthen the underlying culture of the Institutes and to make entrepreneurship another attractive career option. The Max Planck Foundation Prize, endowed with 50,000 euros and awarded by the *Stifterverband*, is a building block of the MAXpreneurs initiative.



- *The Max Planck start-up Meshcapade creates 3D models of human bodies*

Nurturing talent



● *Excellent training and a variety of opportunities for career development*

Together with partner universities within Germany and abroad, the Max Planck Society founded the *International Max Planck Research Schools* (IMPRS) to attract gifted doctoral researchers from around the world to complete their doctorate in Germany. Here, early career researchers enjoy excellent research opportunities and receive close supervision and support through specially designed offers.

The Max Planck Schools and the Max Planck Graduate Centres supplement such offers as a national network for graduate education. The Max Planck Schools are a joint initiative of the Max Planck Society, German universities and non-university research organizations. The pilot project involves the *Max Planck School of Photonics*, the *School of Cognition* and *Matter to Life*. Bringing together their excellence in geographically decentralized, subject-related, interdisciplinary networks, they are able to offer unique conditions for getting started in science.

The Max Planck Society sets high standards for the excellence of research, including that carried out by early career researchers. With the guidelines for the education and training of doctoral researchers and for the postdoc phase, it offers reliable and transparent career structures, right through to independent career development. Funding contracts in the course of a doctorate and employment contracts in the postdoc phase enable scientifically autonomous research with social security.



○ *Career springboard
for outstanding talent:
heading a Max Planck
or a Lise Meitner
Research Group*

As the leader of a **Max Planck Research Group** at a Max Planck Institute, young researchers can lay the foundations for their future scientific careers. For five years (with an option to extend twice by a maximum of two years each), they have the opportunity to pursue their own research goals based on a limited but secure budget. The positions are highly sought after; they are advertised internationally and awarded on a competitive basis. Over the last 50 years this funding programme has proven very successful and its structure has been adopted by many science organizations in Germany and abroad.

With funding and mentoring programmes such as the Minerva Fast Track Programme and Minerva Femme Net, the Max Planck Society supports young female scientists in their career development. With the Lise Meitner Excellence Programme, it has also opened up a transparent and attractive internal career pathway for highly-qualified female scientists. The programme offers them their own research group, outstanding resources, and the prospect of advancing to become a Max Planck Director.

The Max Planck and Lise Meitner Research Groups are building blocks of the new two-stage Max Planck Careers Program, which is aimed at maintaining the MPG's competitive edge in the international arena when it comes to attracting young talent and the brightest minds. With a tenure track option in the second phase, it not only allows early career researchers to plan their futures more effectively, but also provides additional options for filling future director positions.

The Max Planck Society also trains specialists in non-scientific fields. There are around 400 vocational trainee positions available each year. Trainees can choose from 40 occupations – in the areas of office administration, electrical engineering and metalworking, as well as in laboratory work, IT, or animal care.

Having a family-friendly human resources policy is of great importance to the Max Planck Society. In 2006, the Max Planck Society was the first science organization to undergo the "Career and Family" audit and was successful in gaining certification. It is constantly committed to expanding and further developing its family-friendly measures and programmes that take different life phases into account. Its most recent certification was in 2021.

◉ *Excellent conditions for
PhDs and postdocs ...*



◉ *... and the best opportunities
for vocational trainees in
about 40 different professions*

International collaboration



● *International teams carry out research in the rainforest of Uganda, ...*

The Max Planck Society is the international flagship of German science. In addition to five institutes abroad, it currently operates 22 Max Planck Centres in ten countries, with top-level research institutions such as the US universities Princeton, Harvard and Yale, universities in France (Sciences Po), Switzerland (ETH Zurich, EPFL Lausanne) and the United Kingdom (including University College London, University of Cambridge) as well as in Japan, South Korea, Australia, and Canada.

There are currently over 100 Partner Groups in Asia, Europe, and Latin America – these act as the bridgeheads for German science abroad. They are led by particularly talented early career researchers from abroad who return to their home countries after a research residency at a Max Planck Institute and who are supported in setting up a scientific working group.

With its Dioscuri Programme, the Max Planck Society has been supporting outstanding scientists in setting up research groups at central and eastern European institutions since 2018 (initially with five Dioscuri centres in Poland and since 2021 also in the Czech Republic), and, in doing so, makes an important contribution to strengthening the European Research Area.



- ... during excavations in Gorongosa National Park in Mozambique ...

The research work carried out at Max Planck Institutes is part of a global network based on international collaboration and projects – from the global climate measurement campaign to satellite-assisted observation of animal movements from space and the operation of the LHC particle accelerator at CERN, the European Organization for Nuclear Research, in Geneva, right through to projects in Latin American countries, in which concepts are developed to strengthen local human rights.

- ... or exploring the universe (here APEX in Chile's Atacama Desert)





- *ESO's Very Large Telescope (VLT) in the Atacama Desert of northern Chile is one of the most advanced optical instruments in the world*



Public science



- *Experiments for a (very) young audience convey the fascination of science*



Top-level research is one thing, making it accessible to others is another. Max Planck offers information on a range of different channels – via Twitter, YouTube, Facebook, and Instagram, on its own website and in its quarterly science magazine, MaxPlanck-Research, published in German and English. In order to keep those interested informed about the work of the Max Planck Institutes, the latter regularly open their laboratories, libraries and workshops for public events such as the “Long Night of Science” and open days. There are science slams and science shows, as well as Institute tours, school talks and exhibitions.

With the four-page BIO, GEO and TECHMAX booklets for upper secondary schools, the Max Planck Society also supports teachers in their efforts to include current research topics into their lessons. The MAX booklets are also supplemented by a wide range of images, videos and podcasts on the media platform maxwissen.de. At some Max Planck Institutes, pupils also get the opportunity to carry out student internships or gain their first experimental experience by participating in the student laboratory.

- Public panel discussions with scientists – open to live and digital audiences





1948
—
2023





The Max Planck Society – Milestones in its history

The Max Planck Society was founded on 26 February 1948 in Göttingen, with the mission to carry out basic research outside universities. It was the successor to the Kaiser Wilhelm Society and adopted the latter's structural principles, including supporting outstanding researchers, as well as breaking into new unexplored areas of research. The motto of its first President, Nobel Prize Laureate Otto Hahn, was that research must be free in order to serve the peace and wellbeing of society. The freedom of art and science has been enshrined in the Basic Law of the Federal Republic of Germany since 1949. The following 75 years have shown how much the development of the Max Planck Society is linked to German history.


1945°
—
1955



TURMOIL AND A NEW BEGINNING

World War II ended in May 1945. The division of occupied Germany into four zones set the course for the future of German science. In the Kaiser Wilhelm Society (KWG), Germany had had a renowned facility for basic research since 1911, which, however, had also become embroiled in the Nazi system in various ways. At the end of the war, the KWG Institutes lay in ruins, were temporarily relocated or operating at minimum levels.

The Allies had different ideas about the research organization's future, even proposing its dissolution. British chemist Bertie Blount, responsible for the KWG as the liaison officer of the military authority for science in the British zone, is to thank for the fact that it never came to this. He sent for the internationally renowned and politically untarnished Max Planck to come to Göttingen to take over the office of Interim President of the KWG so that it could be reorganized. In September 1946, on the initiative of the British Allies, a new research society was established in Bad Driburg in the British zone. It was to take over the properties and the staff of the KWG.

- 
- *The almost completely destroyed Kaiser Wilhelm Institute for Chemistry in Berlin, 1944*

● *The redesigned Minerva as a symbol of peaceful research at the Max Planck Institute for Chemistry in Mainz*

Max Planck agreed to the new society being named after him. The British invention of the 'Max Planck Society' (MPG) proved to be a viable model for the future, which was finally accepted by all the Western Allies. As a result, in 1948 the MPG was effectively founded for a second time as the successor to the Kaiser Wilhelm Society. It adopted the trademark of the KWG, the powerful Roman goddess of wisdom and knowledge, Minerva. In the new building of the Max Planck Institute for Chemistry which was inaugurated in 1956 – the Institute was developed from the Kaiser Wilhelm Institute for Chemistry in Berlin and relocated to Mainz at the end of the war – Minerva is depicted with a stylus and writing tablet in her hand instead of her shield and spear, a symbol of peaceful research.

Cautious reconstruction proceeded in the western zones under the control of the Western Allies until 1955. The financing of the Max Planck Society was provided in equal part by the federal government and the federal states, an arrangement which continues to this day. This federal principle is what differentiates the MPG from the Kaiser Wilhelm Society and guarantees the freedom of its research.



EINWEIHUNG: BERLIN-DAHLEM
< KAISER-WILHELM-INSTITUT >
NEUBAU MAINZ, 9. JULI 1956
< MAX-PLANCK-INSTITUT >



- *The British officer and chemist Bertie Blount came up with the idea of establishing the MPG in 1946*

1955° — 1972



● Feodor Lynen, Wolfgang Gentner, Alice Gentner, Otto Hahn and Josef Cohn (l.t.r.) before departure for Israel

DEVELOPMENT AND EXPANSION

In 1955, the Federal Republic of Germany gained full sovereignty. All restrictions on research were also removed at this time. The MPG once again sought out international connections. In 1959, following an invitation from the Weizmann Institute, Otto Hahn travelled to Israel with a delegation. Initiated by Prime Minister David Ben-Gurion and Chancellor Konrad Adenauer, new research relationships were intended to contribute to healing the wounds of the Shoah. With this trip, a new chapter of political and scientific collaboration between the two states began. The federal government provided start-up capital in the amount of three million deutschmarks for future research projects and the exchange of scientists with the Weizmann Institute.

Five years later, the *Minerva Stiftung* was founded as a subsidiary of the MPG. A cooperative agreement with the Weizmann Institute formed the basis for the first and probably most important German-Israeli scientific exchange programme, the Minerva-Weizmann Programme. The Federal Ministry of Education and Research has supported the *Minerva Stiftung* with over 350 million euros since 1964. Its successful and attractive sponsorship programmes make the *Minerva Stiftung* the leading institution for scientific exchange and collaboration between Germany and Israel.

In the 1950s, the era of temporary solutions also ended for the MPG. In 1954, the Max Planck Institute for Virus Research in Tübingen emerged from a department of the Max Planck Institute of Biochemistry, a former Kaiser Wilhelm Institute. In 1958, the Max Planck Institute for Physics moved to Munich under Werner Heisenberg. The new building, designed by well-known architect Sep Ruf, fitted in with the utilitarian style of the time. It is one of many buildings that were constructed during the years of the rapid recovery and modernization of the German economy after World War II, the

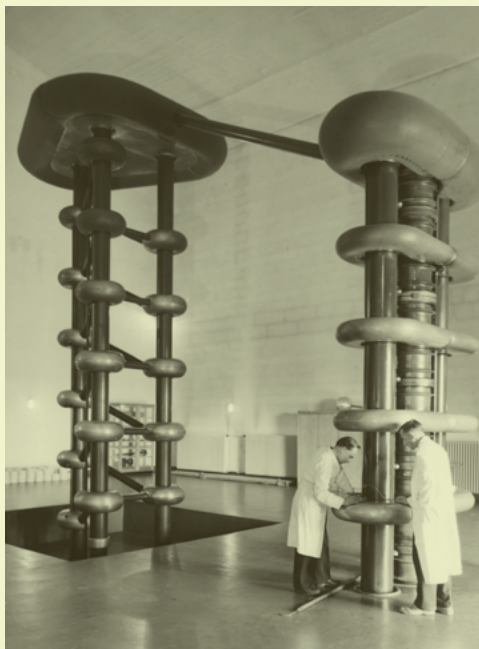




- *The new building of the MPI for Physics was designed by the renowned architect Sep Ruf*



- *At the MPI for Chemistry, a so-called cascade generator was used as a particle accelerator from 1949 to 1980*



● *Balloon experiments at the MPI for Physics in the early 1950s*



so-called *Wirtschaftswunder* (economic miracle). The Institute also broke new ground with astrophysics and later extraterrestrial physics (founded as a sub-institute in 1963, independent from 1991). These up-and-coming research branches of the Max Planck Society went on to receive the Nobel Prize, which was awarded to Reinhard Genzel from the Max Planck Institute for Extraterrestrial Physics, in 2020.

The Kaiser Wilhelm Society existed in parallel with the Max Planck Society for twelve years. It was not dissolved until 21 June 1960 in the course of an extraordinary general meeting. Under Adolf Butenandt, who became President that year, the MPG started to grow exponentially. Under his leadership, many new institutes were founded for highly-specialized basic research, such as plasma physics, plant genetics and immunobiology, as well as new social science institutes. The number of Max Planck employees doubled. Butenandt was a modernizer with close contacts with politicians and an effective media presence. He created new structures for the benefit of mid-level science and moved the administration from Göttingen to Munich. Another new innovation was that multiple directors were permitted to jointly lead an institute.

But the past continued to have an effect: personal networks from the pre-war era persisted. Practice-related research fields from the Kaiser Wilhelm Society were worked on into the 1970s. However, the Max Planck Society struggled to recognize the pension rights of expelled researchers. Denial and silence dominated the relationship with the Nazi era, just as much as pride in the scientific successes of the Kaiser Wilhelm Society.

1972^o — 1989

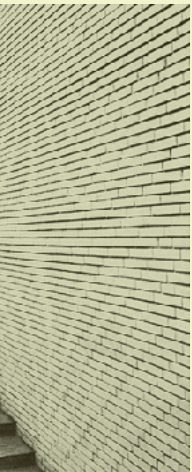
- ◉ *The student protests of 1968 bring about significant changes, not only in the universities*



- ◉ *President Reimar Lüst (left) introduces “collegial management” in the early 1970s*

LIMITS ON GROWTH

At the end of the 1960s, the years of the German *Wirtschaftswunder* came to an end. The oil crisis of 1973 had a devastating impact on the economy. Business activity crashed and limited the financial freedom of the federal government. The same went for the Max Planck Society. While many new buildings were inaugurated, the Institutes that moved into them were mostly those founded much earlier. Science was focused on basic research in the laboratory. The final strongly practice-related lines of research from the Kaiser Wilhelm Society disappeared.



In 1972, Reimar Lüst, the youngest President to date, took over the leadership of the Max Planck Society. He belonged to a generation whose professional careers did not date back to the Nazi era. The themes of the 1968 student movement also found their way into the MPG. The structural reform of 1973 gave employees more representation and the corresponding amendment to the articles of association, which took place in 1964, came into force in the Institutes. The change introduced an administrative correction to the Harnack Principle, which may be regarded as the Society's most important principle, dating from the time the KWG was founded. The structure of the MPG became more democratic, as the department directors within each Institute have since been on an equal footing and regularly take turns in the Institute's management.

At the same time, the MPG became more open to topics of political relevance in its scientific research. Demands for the equality of women and the call for equal educational opportunities for everyone influenced science. The Max Planck Institute for Human Development was established in 1974. Jürgen Baumert, in 1975 initially a scientific research assistant at the Institute, and from 1996 onwards a Director, conducted the first nationwide PISA study. It examined the educational



knowledge and abilities of 15-year-olds in an international comparison. The results, in which Germany's pupils came in the bottom third of the overall ranking in terms of their performance, triggered a 'PISA shock'. Following PISA 2000, the study has been repeated every two to three years with different focus areas.

Environmental protection and the fear of an atomic war also politicized the public in the 1980s. Natural and social sciences looked for answers. The Max Planck Institute for the Study of the Living Conditions of the Scientific-Technical World in Starnberg was an experiment. Under the leadership of Carl Friedrich von Weizsäcker and Jürgen Habermas, it conducted peace and future studies from 1970 to 1980 – which were also intended to have a political impact. The Max Planck Institute for Foreign and International Criminal Law in Freiburg likewise did not shy away from hot topics, such as the right to abortion, the liberalization of which was a key topic for the feminist movement.

The continued increase in climate research since the 1970s, and the Earth system research that later developed from it, was closely linked to the simultaneous boom in environmental dialogue. Starting with a single department for atmospheric chemistry at the Max Planck Institute for Chemistry in Mainz, Earth system research has increased significantly at the MPG over the following decades. In 1975, the Max Planck Institute for Meteorology was founded in Hamburg. Further departments in other MPIs followed, and in 1997, the Max Planck Institute for Biogeochemistry was founded in Jena. This cross-institute Earth system cluster continues to this day and has earned the MPG two Nobel Prizes: in 1995, the Nobel Prize for Chemistry for Paul



- *Federal President Walter Scheel meets Konrad Zweigert, Carl Friedrich von Weizsäcker and Jürgen Habermas (l. t. r.) at the Starnberg-based Institute in 1976*

Crutzen, Director at the MPI for Chemistry, and in 2021, the Nobel Prize for Physics for Klaus Hasselmann, Director at the MPI for Meteorology.

In the 1980s, the Federal Republic was looking for ways to reposition itself technologically. Basic research was meant to help. It was becoming more and more international and technologically sophisticated. The Max Planck Institute of Quantum Optics was founded in 1981, to investigate the interaction between light and matter. This Institute is now the centrepiece of Munich Quantum Valley, established in 2021. These were successful years for the Max Planck Society. Six of its researchers received the Nobel Prize. These included Ernst Ruska, who built the first electron microscope in 1933, one of the most important inventions of the 20th century in the view of the Nobel Foundation.

1989° — 2000

- *After the fall of the Berlin Wall, 18 new institutes are established in the new federal states*



- *In January 1992, the first institute is inaugurated, the MPI for Microstructure Physics in Halle*

RECONSTRUCTION AND REAPPRAISAL

When the Berlin Wall fell on 9 November 1989, this also had consequences for the German scientific community. The MPG started an emergency programme to set up temporary research units and to encourage the exchange of scientists. Six months after the Berlin wall came down, the 'science summit' between the two German states met in Bonn. The ministers of research discussed the future of academic activities in a united German state. The outcome was that in future a 'united research sphere' would be developed, 'with the elements that characterize the Federal Republic of Germany today'. The MPG subsequently started founding new Institutes in the eastern part of the country. As a consequence of the unification process, the majority of the research facilities in the GDR became part of the Leibniz Association. The fundamental principles of the science summit were also laid out in the German Reunification Treaty, which came into force on 3 October 1990. As a consequence of reunification, the Max Planck Society moved its legal headquarters from Göttingen to Berlin in 1992. The administrative headquarters remained in Munich.



The opening of the Iron Curtain gave Germany an economic boost and further drove globalization. The Max Planck Society contributed to this development. After 1989, it founded 18 new Institutes in the new eastern federal states. Saxony developed into an important location after reunification, with six institutes in Leipzig and Dresden alone. The Max Planck Institute for Evolutionary Anthropology was founded in 1997 and delivered the youngest Nobel Prize winner from the MPG, Svante Pääbo (Nobel Prize for Medicine in 2022). In the same year another Max-Planck researcher, Anthony Hyman from the Max Planck Institute for Molecular Cell Biology and Genetics in Dresden, received the prestigious Körber Prize, as well as the American Breakthrough Prize.

In 1997, President Hubert Markl appointed an independent committee of historians to reappraise the history of the KWG during the Nazi era. The chairpersons were Wolfgang Schieder and Reinhard Rürup, who had made their names as experts in research into antisemitism and Nazi history. The research project focussed on the politics of the Administrative Headquarters of the Kaiser Wilhelm Society, racial and genetic research in



Kaiser Wilhelm Institutes, arms research, agricultural research in connection with the Nazi expansion policy, as well as the expulsion of Jewish scientists and the role of individuals, including Nobel Prize winner and longstanding President of the Max Planck Society, Adolf Butenandt.

The historical committee laid open the involvement of the Kaiser Wilhelm Society with the Third Reich and thus its shared responsibility for the crimes of the Nazi regime. Hubert Markl himself apologized to the victims of biomedical experiments on behalf of the KWG. In his speech, he emphasized that *'the truest form of apology is the disclosure of guilt'*. In doing so, he pointed the way for the MPG to accept responsibility for the past. But Markl not only offered a scientific perspective, he also found moving words to personally apologize to the survivors of the Nazi medical experiments on twins: *'Only a perpetrator can ask for forgiveness. Nevertheless, I sincerely ask you, the surviving victims for forgiveness on behalf of those who, irrespective of their reasons, failed to do so themselves.'*

- *Hubert Markl apologises on behalf of the KWG and MPG to Eva Mozes Kor, a survivor of Nazi medical experiments on twins*

2000° — today

- *Peter Gruss accepts the Prince of Asturias Award for International Cooperation from the Spanish Crown Prince in 2013*



FUTURE CHALLENGES

During the Presidency of Peter Gruss, Markl's successor, the federal government noticeably increased its expenditure on research. The Joint Initiative for Research and Innovation, the Higher Education Pact and the Excellence Initiative, helped both research and Germany experience a boom. The Excellence Initiative specifically supports promising research locations and promotes local networking, including between universities and Max Planck Institutes. But above all it creates greater acceptance of scientific excellence and superiority, a change which has also benefited the Max Planck Society. Eight Max Planck Institutes with innovative subject areas such as the biology of ageing, the physics of light, and empirical aesthetics were founded.

But the international research landscape is also changing. Many countries, particularly in Asia, started to invest hugely in research. The degree of globalization in science itself is increasing: researchers are more and more prepared to move their workplace across borders and continents. Top-class science institutions support this trend by expanding their recruitment activities globally. With over 50 percent of its scientific staff coming from abroad, the MPG is more international than ever. With the Max Planck Centres, it has also been developing its collaboration with top international research institutions. The MPG is represented from Vancouver to Lausanne, from Princeton to Paris, from Jerusalem to Tokyo. In 2007, it finally founded its first Institute outside Europe, in the United States. The number of Partner Groups, managed by former junior Max Planck researchers after their return home, is also increasing, particularly in Latin America. This commitment received special recognition in 2013, winning the prestigious Spanish Prince of Asturias Award for International Cooperation.

The pandemic years of 2020 and 2021 were a particular challenge for a research organization that operates as globally as the Max Planck Society. Travel restrictions, a lack of visas as a result of closed embassies etc. delayed the start of employment for guest and early career researchers, especially in the first year of the pandemic. The closure of or limited access to libraries and field stations hindered the work of graduates and postdocs, groups of particular importance to Max-Planck President Martin Stratmann. As soon as he took office in 2014, he paid special attention to making improvements to the support of early career researchers. For this reason, since 2015 doctoral researchers have received three-year funding contracts, which combine the scientific freedom of a scholarship with the social security of an employment contract. During the pandemic, the regulations relating to the support of early career researchers were made more flexible for a limited period of time. The awarding of doctoral and postdoc scholarships overseas, funded by the Institute without the scholarship being started in person at the MPI, was facilitated, as well as the individual extension of existing sponsorships.

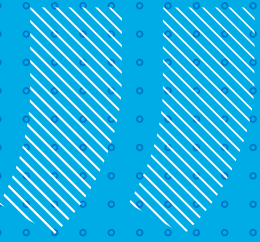
The start of the Russian war of aggression in Ukraine in February 2022 was a turning point for Germany and Europe. The Max Planck Society put all its scientific collaborations with Russian institutions on hold. At the same time, it offered an aid package for Ukrainian researchers. *'This war will cause severe disruption and*



○ For three years in a row, Max Planck researchers have been honoured with a Nobel Prize. The most recent Nobel Laureate was Svante Pääbo in 2022

constraints in science. This is all the more saddening as there are important research projects currently underway with Russian colleagues, which are intended to make an important contribution to solving urgent global problems of our times, in particular climate change,' said Stratmann in a public statement. Together with the Lindau Nobel Laureate Meetings, the MPG published a declaration for peace which drew on the earlier Mainau Declaration initiated by Otto Hahn in 1955 and was signed by over 150 Nobel Prize winners.

At the same time, 2020, 2021 and 2022 have been particularly successful years in science, with a total of five Nobel Prizes awarded to researchers from the Max Planck Society.



**ALL NATIONS
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WILL**

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MAINAU DECLARATION 1955



85 Max Planck Institutes

5 Max Planck Institutes
abroad

38 Facilities in Germany

The 85 Institutes and research facilities of the Max Planck Society are distributed across 38 locations in Germany and five abroad. They are divided into three Sections, which reflect the spectrum of research carried out by the Max Planck Society: the Chemistry, Physics and Technology Section, the Biology and Medicine Section and the Human Sciences Section. Around 24,000 individuals currently work and conduct research at the Max Planck Society. These include around 7,000 researchers, with women representing 32 percent, as well as around 15,700 early career researchers and guest scientists each year.

List of institutes



SITES ABROAD

BRAZIL

○ Manaus

ITALY

● Florence
● Rome

LUXEMBOURG

● Luxembourg

THE NETHERLANDS

● Nijmegen

USA

● Jupiter, Florida

BAD MÜNSTEREIFEL

- Effelsberg Radio Observatory (branch of the MPI for Radio Astronomy, Bonn)

BAD NAUHEIM

- MPI for Heart and Lung Research

BERLIN

- MPI for Human Development
- Fritz Haber Institute of the MPG
- MPI for Molecular Genetics
- MPI for Infection Biology
- MPI for History of Science
- Max Planck Unit for the Science of Pathogens

BOCHUM

- MPI for Security and Privacy

BONN

- MPI for Mathematics
- MPI for Research on Collective Goods
- MPI for Neurobiology of Behavior – caesar
- MPI for Radio Astronomy (also see Bad Münstereifel)

BREMEN

- MPI for Marine Microbiology

COLOGNE

- MPI for Biology of Ageing
- MPI for Metabolism Research
- MPI for Plant Breeding Research
- MPI for the Study of Societies

CONSTANCE

- MPI of Animal Behavior

DORTMUND

- MPI of Molecular Physiology

DRESDEN

- MPI for Chemical Physics of Solids
- MPI of Molecular Cell Biology and Genetics
- MPI for the Physics of Complex Systems

DÜSSELDORF

- MPI für Eisenforschung GmbH

ERLANGEN

- MPI for the Science of Light

FRANKFURT AM MAIN

- MPI of Biophysics
- MPI for Brain Research
- MPI for Empirical Aesthetics
- MPI for Legal History and Legal Theory
- Max Planck Research Unit for Neurogenetics
- △ Ernst Strüngmann Institute

FREIBURG

- MPI for Immunobiology and Epigenetics
- MPI for the Study of Crime, Security and Law

GARCHING

- MPI for Astrophysics
- MPI for Extraterrestrial Physics
- MPI for Plasma Physics (also see Greifswald)
- MPI of Quantum Optics

GÖTTINGEN

- MPI for Dynamics and Self Organization
- MPI for Multidisciplinary Sciences
- MPI for Solar System Research
- MPI for the Study of Religious and Ethnic Diversity

GREIFSWALD

- Subinstitute of the MPI for Plasma Physics, Garching

HALLE (SAALE)

- MPI for Microstructure Physics
- MPI for Social Anthropology

HAMBURG

- MPI for Comparative and International Private Law
- MPI for Meteorology
- MPI for the Structure and Dynamics of Matter

HANOVER

- Subinstitute of the MPI for Gravitational Physics, Potsdam

HEIDELBERG

- MPI for Astronomy
- MPI for Comparative Public Law and International Law
- MPI for Medical Research
- MPI for Nuclear Physics

JENA

- MPI for Biogeochemistry
- MPI for Chemical Ecology
- MPI for Geoanthropology

KAISERSLAUTERN

- MPI for Software Systems (also see Saarbrücken)

LEIPZIG

- MPI for Evolutionary Anthropology
- MPI for Human Cognitive and Brain Sciences
- MPI for Mathematics in the Sciences

MAGDEBURG

- MPI for Dynamics of Complex Technical Systems

MAINZ

- MPI for Chemistry (see also Manaus, Brazil)
- MPI for Polymer Research

MARBURG

- MPI for Terrestrial Microbiology

MARTINSRIED

- MPI for Biochemistry
- MPI for Biological Intelligence

MÜLHEIM AN DER RUHR

- MPI for Chemical Energy Conversion
- MPI für Kohlenforschung (independent foundation)

MUNICH

- MPI for Innovation and Competition
- MPI for Physics
- MPI of Psychiatry
- MPI for Social Law and Social Policy
- MPI for Tax Law and Public Finance

MÜNSTER

- MPI for Molecular Biomedicine

PLÖN

- MPI of Evolutionary Biology

POTSDAM

- MPI for Gravitational Physics (Subinstitute, also see Hanover)
- MPI of Colloids and Interfaces
- MPI of Molecular Plant Physiology

ROSTOCK

- MPI for Demographic Research

SAARBRÜCKEN

- MPI for Informatics
- MPI for Software Systems (also see Kaiserslautern)

SEEWIESEN

- MPI for Biological Intelligence

STUTTGART

- MPI for Solid State Research
- MPI for Intelligent Systems (also see Tübingen)

TÜBINGEN

- MPI for Biological Cybernetics
- MPI for Biology Tübingen
- MPI for Intelligent Systems (also see Stuttgart)
- Friedrich Miescher Laboratory of the Max Planck Society

SITES ABROAD

MANAUS, BRAZIL

- Branch of the MPI for Chemistry, Mainz

FLORENZ, ITALY

- Kunsthistorisches Institut in Florenz – MPI

ROME, ITALY

- Bibliotheca Hertziana – MPI for Art History

LUXEMBOURG, LUXEMBOURG

- MPI Luxembourg for International, European and Regulatory Procedural Law

NIJMEGEN, THE NETHERLANDS

- MPI for Psycholinguistics

JUPITER, FLORIDA / USA

- Max Planck Florida Institute for Neuroscience

- Institute / research unit
- Subinstitute / Branch
- Other research institution
- △ Associated Research Institute
- Biology and Medicine Section
- Chemistry, Physics and Technology Section
- Human Sciences Section

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