

THE BAYER FOUNDATIONS – INVESTING IN EDUCATION, RESEARCH AND SOCIAL DEVELOPMENT

# Committed to progress

*Innovations stem from knowledge and creativity – and are developed by clever minds. This is why Bayer actively promotes education and science all around the world. One example is the Bayer Science & Education Foundation's scholarships and awards. These are used to encourage excellence in research and support talented young people and researchers just starting out in their career as well as top researchers delivering outstanding achievements in their field. The Bayer foundations also support efforts to resolve social issues: for example, the Bayer Cares Foundation focuses on citizens' projects and resolving issues in the field of social medicine. The foundations share the Bayer Group's ultimate goal – improving people's lives.*



Medical care: Hermann Strenger scholarship holders Sarah Zipse and Sebnem Aykut (left to right) at their project in the children's hospital in Hanoi, Vietnam.

PROMOTING CUTTING-EDGE INTERNATIONAL RESEARCH

# Using science to make the world a better place

*Adopting a more focused approach to fighting diseases like cancer and securing adequate food supplies for the world – just two of the 21st century's biggest challenges. Researchers all around the world are working to find solutions to these problems. The Bayer Science & Education Foundation offers scientific awards and research grants to support aspiring young researchers and renowned scientists in their efforts to move one step closer to their goals.*



Fostering talent: Professor Andreas Busch, Head of Global Drug Discovery at Bayer HealthCare, presents Dr. Christiane Opitz (photo above, left to right) with the 2012 Bayer Early Excellence in Science Award. Dr. Yiming Wang (photo, left), one of the Humboldt-Bayer Fellows, is also supported by the Bayer Science & Education Foundation.

A cancer diagnosis is a fateful blow for patients and their families. The immediate aftermath brings all-consuming fear. How far advanced is the tumor? What is the best course of treatment? Will it arrest the cancer's growth? Dr. Christiane Opitz asks herself such questions on an almost daily basis. She is an assistant doctor in neuro-oncology at Heidelberg University Hospital, responsible for treating patients with brain tumors. "In my day-to-day clinical work, I repeatedly see how limited our therapeutic options are and how far away we are from a cure for the patients. There is a huge need for further research," says Opitz, who is currently completing her training to become a consultant neurologist. "I would like to help find new treatments to offer cancer

patients, which is why I am so committed to neuro-oncology research," she explains. She has already made a start in this direction: as a postdoc at the German Cancer Research Center (DKFZ) in Heidelberg, she and a colleague discov-

ered that the breakdown of the amino acid tryptophan plays a crucial role in the aggressiveness of brain tumors and suppresses the immune system's response to the tumor. Her work has been widely recognized, and in 2012 she was pre-

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## Science awards

*The international Bayer Early Excellence in Science Award is presented annually in three categories – biology, chemistry and materials – each with prize money of EUR 10,000. The award recognizes promising young researchers. Further scientific awards presented by the Bayer Science & Education Foundation include the Otto Bayer Award, the Hansen Family Award and the Bayer Thrombosis Research Award.*

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## Humboldt-Bayer Research Fellowship

*The fellowship is intended to create greater transparency between university and company for young researchers and open up career opportunities for academics. It also closes a gap in the Bayer scholarship portfolio, because the Bayer Science & Education Foundation had previously focused on schoolchildren, trainees, undergraduates and postgraduates but not post-doctoral students. Another new development is that young researchers in other countries are now being brought to Germany – previously, the researchers were sent all over the world.*

sented with the Bayer Early Excellence in Science Award in biology by the Bayer Science & Education Foundation. As Professor Andreas Busch, a member of Bayer HealthCare's Executive Committee and Head of Global Drug Discovery and himself a passionate researcher, explained at the award ceremony, "Christiane Opitz's research work could lead to the development of new cancer treatments that inhibit malignant tumor cells and promote immune system responses to the tumor."

"The Bayer prize differs from other awards by funding my personal and professional development as well as research activities," Opitz points out. For instance, the money can be used for instruction sessions for new laboratory equipment or to attend international specialist



*"The expertises of the DKFZ and Bayer complement each other ideally in the discovery of new treatments for cancer patients."*

Professor Otmar D. Wiestler, Chairman and Scientific Director of the Management Board of the German Cancer Research Center (DKFZ) in Heidelberg

conferences. The ambitious researcher, doctor and mother of two now leads her own DKFZ research group that she set up in February 2013. As well as presenting prestigious scientific awards, the Bayer Science & Education Foundation also issues research grants to further the efforts of outstanding scientists. The Humboldt-Bayer Research Fellowships program for postdoctoral scientists is a particularly good example. Dr. Yiming Wang is one of the first upcoming young scientists to benefit from this new, future-oriented collaboration between science and business. "The Humboldt-Bayer Fellowship opens up entirely new professional perspectives for me. A research post at a company such as Bayer CropScience is now a conceivable alternative to a purely academic career at universities or research institutes," says the plant protection expert from China. After completing his doctoral thesis and then working as a postdoctoral researcher at the Gyeongsang National University in South Korea, he now holds a two-year post at the Max Planck Institute for Plant Breeding Research in Cologne. There



*"Science and research are essential if we are to secure a future worth living in."*

Professor Helmut Schwarz, President of the Alexander von Humboldt Foundation

he is involved in examining the natural defense mechanisms of plants toward pathogens such as bacteria. "Bacterial infections are responsible for heavy harvest losses the world over. Millions of people, mainly in the underdeveloped countries, suffer from food shortages as a result," Wang says. His objective is "to collaborate with my colleagues to find a way of increasing plant resistance to such diseases." The Humboldt Bayer Fellowship awards him EUR 50,000 each year for two years to support his efforts in this direction. "The grant enables me to finance my experiments and establish and maintain important new contacts with colleagues in the field," Wang says. The Bayer Foundation also provides direct contacts within the Group. "Bayer CropScience has set up numerous sites in China. I could well imagine working at one of the research laboratories in the future," he adds.

## Bayer Lindau Fellowship

*The annual Lindau Nobel Laureate Meeting brings together renowned scientists from different generations. Each year, the Bayer Science & Education Foundation selects 20 young researchers from around the world to attend the conference as "Bayer Lindau Fellows" with the help of grants worth an annual total of EUR 50,000. At the conference, the young participants also come into contact with people from the world of business and, for example, discover from Bayer scientists how pioneering research achievements can inspire concrete innovations.*

INSPIRING TALENTED YOUNG RESEARCHERS

# Inspiring knowledge – encouraging talent

*Passion, curiosity and inventiveness are important traits in a researcher – and they often emerge early on in life. The Bayer Science & Education Foundation provides support programs aimed specifically at school students for this very reason. And once the spark has been ignited, various scholarship programs then encourage these talents to become top researchers.*



Research talents: the Bayer Science & Education Foundation promotes natural science projects conducted by school children and students. Scholarship recipient Karola Gerecht (photo, left) and the "Lights, Camera ... Chemistry!" school club (photo, right) from Babelsberg have both benefited from this support.

Even brilliant researchers need a helping hand, especially at the start of their careers – and innovative companies such as Bayer need extremely well-trained recruits. After all, it takes brilliant minds to generate exceptional innovations. Bayer gives them a head start early on – offering support to budding young scientists and introducing them to the Group's own researchers face to face. Biochemistry student Karola Gerecht has already benefited from this approach. She is one of the 100 recipients of the "Deutschlandstipendium" scholarships awarded by the Bayer Science & Education Foundation, providing practical benefits as well as financial support. Her three-month internship at Bayer HealthCare Global Drug Discov-

ery in Cologne offered her the chance to pursue hands-on research in her core subject of oncology. "The research laboratory where I had my internship was working on identifying and characterizing therapeutic antibodies that might

be used to combat cancer, for example," Gerecht explains. She has fond memories of her internship experience. "I gained an insight into laboratory procedures and got to work on exciting projects of my own. I also became acquainted with

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## "Deutschlandstipendium" scholarship students

*The "Deutschlandstipendium" was launched by the German government in 2011 and is funded in equal parts by the state and a particular sponsor – companies, foundations or private individuals. The Bayer Foundation was a trailblazer for this program and has created a total of 100 places at 22 universities throughout Germany. In addition to financial support, the Bayer scholarship students also benefit from the opportunity to make valuable contacts at the company.*

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*“My grandfather wanted to provide good training opportunities for young people because he saw this as a means of ensuring long-term benefits for society.”*

Dr. Carl-Heinz Duisberg, scientific committee member and youngest grandchild of the program's benefactor and former Managing Director of Bayer, Dr. Carl Duisberg

other areas within the Bayer Group and made valuable new contacts,” she says. Gerech is currently on a internship at prestigious Princeton University in the United States. The Bayer foundation's “Deutschlandstipendium” scholarship helped her to finance this nine-month trip abroad as well, bringing her yet one step closer to her goal. “I want to understand what causes diseases so that I can find new approaches to their treatment.”

However, the discovery of a new medical treatment takes many years, meaning that researchers need a lot of patience and a great deal of enthusiasm. The Bayer Science & Education Foundation aims to ignite this spark early on by promoting particularly innovative teaching methods that can spur budding researchers' enthusiasm for scientific, medical and technical subjects during their early years at school. The teenage pupils at the Bertha-von-Suttner High School in Babelsberg who are part of the “Lights, Camera ... Chemistry!” club share a well-established passion for research. Chemistry teacher Sonja Wessner helps them “burn” sodium in water and “cook” with dry ice. “We want

## Bayer school support program

*The program provides targeted support for teachers at schools near Bayer's German sites who use special teaching initiatives in the areas of natural science and technology to take new approaches and bring their inventive spirit into the classroom. The foundation provides funding of up to EUR 500,000 each year for projects that promote an interest in science and technology, provide support to talented young people and assist students' career choices.*

to inspire the children's enthusiasm for chemistry by performing spectacular experiments and to reveal its natural beauty to them,” explains Wessner, the club's founder. She passes on her own enthusiasm for the subject to the pupils this way. “I really enjoy conducting experiments, but lesson time tends to be too restrictive. At club meetings the pupils are always really enthusiastic, very creative and cooperative during experiments.” The added bonus is the use of high-tech equipment to record their undertakings. The experiments are recorded in short sequences that are then edited, given a soundtrack or set to music, and turned into film clips or photo posters. It was money from the Bayer Science & Education Foundation that funded the purchase of the technical equipment – such as laptops, video and photo cameras, tripods and editing software – and particular chemicals. “This combination of chemistry and film highlights the interdisciplinary character

*“We have to teach children in such a way that they are inspired to experiment and think for themselves, and come up with creative projects that fascinate both boys and girls.”*

Professor Ilka Parchmann, Kiel University, Leibniz Institute for Science and Mathematics Education

of the club – something that attracts a broad spectrum of school kids. Some are mainly interested in the camera work, photography and editing, whereas others prefer experimenting with the chemical substances,” Wessner says. Once the project is in the can, the pupils' experiments can then be presented to the general public.

## Bayer Fellowship Program

*The Bayer Science & Education Foundation supports talented young individuals in Germany and other countries in realizing special study and career plans with the help of tailored scholarship programs. The Hermann Strenger scholarships are aimed at commercial, science/technical and health care trainees who are looking to gain some initial professional experience abroad. The Otto Bayer scholarships support students studying natural sciences and engineering, and the Carl Duisberg scholarships help students of human and veterinary medicine study in other countries. The Kurt Hansen program enables students training to become science teachers to study abroad, and the Science Teens program allows particularly enthusiastic students to attend selected natural science/technical summer camps.*

# New approaches to social issues

*Not looking away, taking responsibility and adopting new approaches – the Bayer Cares Foundation supports people who tackle social challenges and help close critical gaps in supply with new ideas.*



## Aspirin Social Award

*The Bayer Cares Foundation's social award is presented to charity projects that adopt new approaches and close critical gaps in health care provision through effective solutions – entirely in keeping with the motto "help that works." A total of EUR 35,000 in prize money is awarded each year. Alongside the top three prizewinners, every project is also in with a chance of winning the EUR 5,000 awarded to the public's favorite project, as determined in an online poll. In 2013, Förderverein Kinderhospiz Düsseldorf e.V. (photo on left) won this award. Up to eight children and their families can stay here and receive support.*

Looking after people who are ill and in need of care is no easy task. Family members generally have to take on this burden alone – and soon end up sick themselves as a result. A team of psychologists from the charitable organization Catania gGmbH wants to stop this from happening. They have founded the online portal pflegen-und-leben.de (caring and living) as an outlet for relatives acting as carers to vent their stress and worries. This project won

the team third place in the Bayer Aspirin Social Award 2013. The portal operators used the EUR 5,000 prize money to extend the services they offer. "The website is in extremely high demand because this is the first service of its kind to provide specific assistance for people caring for relatives," says Imke Wolf, the psychologist in charge of pflegen-und-leben.de. "It's all about finding the right way to deal with the stresses faced by relatives acting as carers so as to prevent burnout."

The Bayer Cares Foundation is also offering Hannes Nieleck and Norman Ohnstein, both employed at Bayer's Bitterfeld site, the assistance they need to put their ideas for helping people get along better into practice. Their projects – two of the 150 winning projects from a total of 62 countries in the volunteering campaign "Being a role model pays off" initiated as part of the "150 years of Bayer" anniversary year – received a total of EUR 9,000 from the foundation for their neighborhood projects in Bitterfeld. Ohnstein helps children in difficult family situations as a kind of "emotional mentor." "I want to give children a break from their problems and,

in doing so, I've learned to see the world a little bit from a child's perspective again," he explains. Nieleck is in charge of a project promoting regional culture. On his own initiative, he is restoring a derelict movie theater and turning it into a youth and social center.



*"Charitable social offers supplement the services provided by the health care system."*

Professor Karl Max Einhüpl, Chairman of the Executive Board of the Charité Berlin.

## The Bayer volunteering program

*As part of the Bayer volunteering program, the Bayer Cares Foundation supports people who have their own project ideas for improving living conditions and resolving social problems in the communities surrounding Bayer's sites. To mark Bayer's anniversary, the foundation recognized 150 employees involved in voluntary work worldwide based on the motto "150 years – 150 good examples."*

THE BAYER FOUNDATIONS – INVESTING IN SCIENCE AND SOCIETY

# Taking the world forward with a pioneering spirit

*The Bayer Group foundations promote cutting-edge research, talented individuals and innovative educational and social projects with the aim of improving the long-term entrepreneurial framework conditions for a technology-based company. The sponsorship programs focus on people – their commitment to science and education, their creativity in resolving social challenges, and also their needs in times of emergency. The foundations' work underlines the Group's long-term commitment to finding new solutions to the issues our society will face in the future.*

The Bayer foundations are part of a long tradition within the Group. Company founder Friedrich Bayer initiated the first foundation program as early as 1897 to tackle a pressing social problem that was very much a focal point at the Bayer sites at that time, by offering medical aid to employees' children suffering from tuberculosis. Dr. Carl Duisberg, who later became the Managing Director of Bayer, systematically expanded the scope of foundation work from 1923 onward. He was keen to



*“Nothing is more important than promoting talented young people and giving them the opportunity to forge international ties.”*

Professor Ernst-Ludwig Winnacker, Secretary General of the Human Frontier Science Program Organization and Chairman of the Board of Trustees of the Bayer Science & Education Foundation

promote education and science. “Even though the world is an entirely different place these days, the original intentions of



Shaping the world of tomorrow: the Bayer foundations want to make their contribution and therefore support educational, scientific and social projects. They share the same objective as Bayer as a whole: to improve the lives of people all over the world.

the early pioneers at Bayer still guide our principles and remain as vital today as ever before,” says Thimo V. Schmitt-Lord, Managing Director of the Bayer foundations. The Bayer Science & Education Foundation thus encourages research excellence and talented scientists, while the Bayer Cares Foundation focuses on solution-oriented social projects. “Our programs target areas that are often difficult to incorporate in normal business operations but are relevant for our long-term success as an innovation company, for example in the fields of education and social medicine. We are seeing some exciting developments in

*“Foundations are a valuable addition to the services provided by the state and often contribute to completely new solutions.”*

Professor Hans Fleisch, Secretary General of the Association of German Foundations

these areas from which the company can also benefit. People in the non-profit sector are demonstrating how to close critical supply gaps with good ideas. They are



*“Ideally, companies contribute to the common good not only financially but also with their expertise and the engagement of their employees.”*

Professor André Habisch, Professor for Christian Social Ethics and Society at the Catholic University of Eichstätt-Ingolstadt and Chairman of the Board of Trustees of the Bayer Cares Foundation

full of pioneering spirit and creativity – often as a result of their own personal involvement,” says Schmitt-Lord. However, funding is in particularly short supply in the education and social sectors, which means good ideas often fail to be realized. That’s where the Bayer foundations come into their own. They make a point of using their program funds to invest in new approaches that attract the interest of committed individuals. The Bayer foundations support both leading researchers

who pave the way for new cancer treatments with ground-breaking fundamental research and social entrepreneurs who close gaps in health care provision with appropriate assistance and advice. “We as a company can also benefit from this and harness innovation for Bayer,” says Schmitt-Lord. The biggest challenge faced by foundations is to find the right projects to invest in. That is why the Bayer foundations have “idea scouts” who are always on the lookout for new approaches and people with a pioneering spirit. As Schmitt-Lord says, “Every invention needs an inventor.” To find the best minds and ideas, the Bayer foundations have therefore established a wide range of programs. They offer scientific and social awards, sponsorship programs for volunteering activities



*“Our objective is pioneering achievements – on all levels of society.”*

Thimo V. Schmitt-Lord, Managing Director of the Bayer foundations

*“Effective commitment is crucial for the development of our society.”*

Dr. Andreas Rickert, CEO of phineo gAG

and schools, and a whole host of grants and scholarships. Supporting pioneering achievements is also a self-energizing process in the long run. “Each project we support also creates impetus for new ideas – the inventor produces new inventors,” explains Schmitt-Lord. The Bayer foundations make a point of organizing events to bring together people working on the same subjects whose paths might otherwise never have crossed – such as doctors and people from the field of social medicine. This kind of exchange often provides new impetus and might even spark an idea that can resolve a long-lasting impasse. Bayer also benefits from this networking, with opportunities for rewarding collaboration and careers in the Bayer Group often emerging. The bottom line lies in sparking people’s enthusiasm for Bayer’s mission to drive progress through the spirit of invention – “Science For A Better Life.”

[www.foundations.bayer.com](http://www.foundations.bayer.com)  
Interested parties can apply and find further information here

## The Bayer foundations at a glance

 **Bayer Science & Education Foundation**

### Science, technology, medicine

- The spirit of invention in the classroom
- Talented young international scientists
- Outstanding research and acceptance of technology

 **Bayer Cares Foundation**

### Social innovation

- Neighborhood projects
- Social medicine
- Reconstruction projects after natural disasters

 **Bayer USA Foundation**

### Science, education, social concerns

- Education innovation
- Health care and social projects
- Outstanding science