community

Community involvement

We take on responsibility for the community in those areas where we can leverage our expertise. In particular, we support health, culture and education projects in the vicinity of our sites and in the countries where we operate. Moreover, we provide disaster relief in emergency situations.

Our approach to community involvement

Across all our facilities worldwide, we are deeply committed to supporting our communities. In selecting social projects, we choose initiatives that align with our strategic focus areas, namely health, environment, and education & culture.

We are particularly determined to facilitate access to health for people across the globe. To do so, we take a multi-pronged approach that includes **numerous health projects (p. 111)** aimed at supporting communities. In doing so, we apply our competencies, knowledge and experience in the health industry, joining forces with dependable partners to provide people the help they need.

We view education as a key component of culture – and vice-versa. Education can help us understand culture, but culture can also build a bridge to education; it can stimulate curiosity, nurture creativity and inspire scientific discovery. We therefore sponsor **cultural initiatives** (p. 115) and support a number of **educational projects** (p. 114) to **spark a passion for science** in the next generation. As part of these efforts, we deploy our expertise to encourage and inspire curious young people who share our passion for science and technology.

Our activities are intended to have a positive, long-lasting effect on the community, which is why we promote many long-term initiatives, an approach that strengthens our relationship with stakeholders and helps reinforce our social license to operate.

How we structure community support

Our Group function Corporate Affairs monitors our Group-wide community outreach and oversees a portion of our activities, including our Praziquantel Donation Program (p. 111), the Global Pharma Health Fund (GPHF) (p. 111) and the Deutsche Philharmonie Merck (p. 114). In addition to Group-wide efforts, our business sectors pursue their own projects such as our educational initiative SPARK (p. 114). Moreover, since 2017 several of our health initiatives in low- and middle-income countries have been operating under the auspices of the Merck Foundation (p. 111), a non-profit limited liability company. Furthermore, our regionally focused activities are planned and executed by our local subsidiaries, who choose for themselves the focus areas within our CR strategy (p. 9) that they would like to support.

The Merck family, too, has long been committed to philanthropic work. Since 2016, their activities have fallen under the umbrella of the Merck Family Foundation, which takes on social responsibility by supporting projects that bring benefits to the people in the vicinity of our sites. This organization focuses on healthcare and education, promoting citizens' initiatives, development cooperation, intercultural understanding, and non-profit objectives. It cooperates with government and scientific institutions as well as nongovernmental organizations, and especially supports projects that our employees are privately involved in.

Our commitment: Principles for our community support

We align our projects with our Group Policy on Contributions to Society, which defines community involvement for our company along with the objectives we pursue. This policy also sets out roles and responsibilities, emphasizing that our activities should have a long-lasting, positive effect on the community. With this in mind, we focus our efforts on long-term projects.

This guideline provides our business sectors and subsidiaries with a framework for structuring their own respective activities.

Our community involvement in numbers

In 2017, our subsidiaries were involved in 250 projects, spending a total of around € 34 million. This figure does not include initiatives that primarily serve to market our products.

Local efforts

In 2017, more than 400 of our U.S. employees took part in the annual EMD Serono Community Service Day. Trading their working day to help out in the community, they volunteered at various **non-profit organizations** in the vicinity of Boston, MA (USA). Here they engaged in a number of activities, such as painting pictures on hospital walls, planting gardens, giving science lessons to more than 150 elementary school children, helping out at local soup kitchens, and sorting packaged goods at local food banks. In total, our people in the United States invested over 1,500 hours in the local community.

In 2017, our employees in Brazil also engaged in **volunteer work** to help Rio de Janeiro's underprivileged inhabitants. Under our Community Action program, over 120 employees from Rio de Janeiro and São Paulo donated their time to support local institutions and provide assistance for services such as free health exams, legal advice and cultural activities. For instance, local residents had the chance to undergo vision screening, with

our company providing free eyeglasses to approximately 160 people with a visual impairment.

In Darmstadt, too, we view ourselves as **part of the community** and therefore contribute to a colorful, rich environment by supporting valuable ideas along with regional clubs and initiatives. In addition, we focus on promoting science education (p. 114) and cultural institutions.

Partnering with the Red Cross

We partner with the German Red Cross (DRK) in a bid to provide relief when disaster strikes. In 2017, for instance, we donated € 18,000 to provide **aid to Yemen**. This donation went towards the German Red Cross's efforts there, setting up health stations and providing clean drinking water and food. In addition to this monetary donation, we also supplied the local health stations with sterile gloves valued at more than € 21,000.

Our subsidiaries also make regular donations to local Red Cross and Red Crescent organizations. In the United States, for instance, our Life Science business sector donated more than € 80,000 in 2017 to help the victims of hurricanes in Texas, Florida and Puerto Rico. The money was used to provide **accommodation, food and medical aid**.

Emergency relief following earthquake in Mexico

After the powerful earthquake in Mexico in September 2017, our subsidiary there donated 5,000 packs of Dolo Neurobion®, our painkiller for neuropathic pain, to the Fundación IMSS, an organ of the Mexican Social Security Institute. This foundation distributed the medicine among people who were injured by partially collapsed houses or falling pieces of furniture, as well as to the wealth of helpers who were suffering pain due to the great physical strain. Our company also donated various toiletries, with our employees in Mexico donating an additional half-truck load of food and toiletries. We covered the cost of transporting the items to the affected communities.

Health

We use our expertise to support health initiatives all over the world, particularly concentrating on promoting local healthcare infrastructure, providing vocational training and continuing education for medical professionals, and educating people on health issues. In particular, we are dedicated to fighting the neglected tropical disease schistosomiasis.

Our commitment: The principles governing our community involvement

As in the other areas in which we support the community, we align our health activities with our Group Policy on Contributions to Society. (p. 110) In addition to this policy, our Access to Health Charter also governs all health initiatives, covering pharmaceutical product donations, counterfeit medicines, and research and development for neglected tropical diseases. We calculate the value of our pharmaceutical product donations according to the WHO Guidelines for Medicine Donations.

Fighting schistosomiasis

Worldwide, more than 200 million people suffer from schistosomiasis, a tropical parasitic infection that causes over 280,000 deaths in Africa every year. In an effort to battle this disease, we developed the active ingredient praziquantel in the 1970s under a joint research partnership. This drug is the only active ingredient that can treat all forms of schistosomiasis. Since 2007, we have been **partnering with the World Health Organization** (WHO) and providing them with donations of praziquantel tablets.

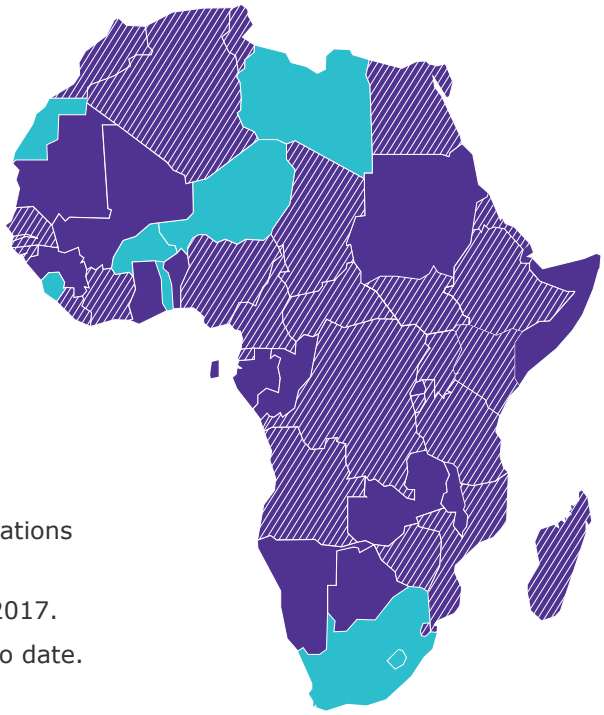
In 2017, we formed the Merck Global Health Institute (p. 41) with the aim of creating innovative and integrated healthcare solutions for underserved populations in developing countries. Through our institute, we are also an active member of the Pediatric Praziquantel Consortium, a partnership we initiated. Within this consortium, we are working hand in hand with our partners on the development of a pediatric formulation of praziquantel for children under six (p. 38). In a bid to achieve this objective, in 2016 the Merck Global Health Institute launched a Phase II study in Côte d'Ivoire. We expect the initial results of the study to be available in 2018.

Schistosomiasis: 150 million children treated

We keep production capacities at a level sufficient for manufacturing 250 million praziquantel tablets a year. In response to the needs of the World Health Organization, in 2017 we donated approximately 150 million tablets for distribution in 26 African countries. This year, our donation program was expanded to include Egypt and Uganda. Since its launch, we have **supplied almost 700 million tablets free of charge**, enabling the treatment of 150 million patients, primarily school children.

Countries that have received donations of praziquantel tablets

Since 2007, we've donated nearly **700 million** praziquantel tablets for distribution across 43 nations in Africa.



- African countries that started receiving tablet donations from us before 2017.
- African countries to which we donated tablets in 2017.
- Countries that have received no donated tablets to date.

* Launch of our Praziquantel Donation Program.

Spreading education and awareness

Since 2012, we've been donating comic booklets to African schools in a bid to help educate children on schistosomiasis. In easy-to-understand terms, these booklets explain how people can protect themselves against this tropical disease. In 2017, the materials went to 12 African countries, seven of which for the first time. In cooperation with WHO, we provided schools with approximately **200,000 booklets in five different languages**.

In addition to these efforts, we also supplied WHO with around 20,000 educational brochures and 2,000 posters on female genital schistosomiasis, the first time we have provided information on this specific manifestation of the disease. In endemic countries, this form of the infection is rarely mentioned in medical curricula or text books, meaning female genital schistosomiasis often goes undetected or is misdiagnosed. These materials aim to educate physicians on the symptoms to make it easier to diagnose the condition.

Merck Schistosomiasis Education Project

Since 2016, we've been financially supporting NALA, a foundation that works in concert with local communities to improve the water supply and sanitation while also **educating people about neglected tropical diseases (NTDs).** In 2017, the Ethiopian Federal Ministry of Health tasked the NALA Foundation with carrying out a national technical assistance project to combat NTDs. Through improving sanitation and education, the foundation aims to make lasting behavioral change – a crucial step to eliminating schistosomiasis. This project is set to reach approximately 290 schools with over 260,000 students in Bench Maji, a region in southwestern Ethiopia. The goal is to extend this model to other regions in Africa. Under the Merck Schistosomiasis Education Project launched in 2017, we're providing the NALA Foundation with nearly € 300,000 over a period of three years.

Central platform in the battle against schistosomiasis

We realize that we're not going to eliminate schistosomiasis with tablets alone. That is why, at the end of 2014, we launched the Global Schistosomiasis Alliance (GSA) and **joined forces with international partners** in a bid to address the remaining gaps in the fight against this infection. Its founding members include the Bill & Melinda Gates Foundation, the Schistosomiasis Control Initiative (SCI), the United States Agency for International Development (USAID), and World Vision International.

In 2017, the GSA expanded its role as a central platform in the fight against schistosomiasis, acquiring a series of international NGOs as new members. As well as organizing several conferences, it took part in various projects aimed at driving local efforts to combat schistosomiasis. In Egypt, for instance, the GSA contributed its expertise to support the Ministry of Health in implementing its national strategy to eliminate the tropical disease.

In addition to these efforts, the GSA garnered attention at the 2017 Neglected Tropical Diseases Summit in Geneva with its #MakingSchistory campaign. Conducted to mark the the tenth anniversary of our Praziquantel Donation Program, this campaign has helped raise awareness for the disease. Moreover, the GSA also published a report entitled "The people #MakingSchistory: The global fight against schistosomiasis. This work recognizes the outstanding successes of people dedicated to combating the tropical disease and explains how it can be defeated once and for all.

Fighting counterfeit medicines

According to a report published by the World Health Organization (WHO) in 2017, more than 10% of all medicines in developing and emerging countries are counterfeit or substandard, making them a major health risk. The Global Pharma Health Fund (GPHF), a non-profit initiative funded by our company, is fighting counterfeit medicines with its GPHF Minilab®.

The GPHF Minilab® is a **portable, compact laboratory** that fits into a tropics-resistant suitcase and can detect falsified medicines quickly, easily and inexpensively. The GPHF develops the Minilabs, supplies them at cost and provides training on how to use them. According to the aforementioned WHO report, the Minilab is one of the most important tools for detecting counterfeit, substandard and falsified medicines. As part of a study published in this report, more than 20,000 pharmaceutical samples were tested using the Minilab, with more than 1,000 of them identified as counterfeit. An international study conducted by the Difäm-EPN Minilab Survey Group in 2017 also reaffirmed how the GPHF Minilab® has helped ensure access to safe medicines in developing countries. The Minilab is currently the only product of its kind.

The majority of Minilabs are deployed in countries in Africa and Asia. These test kits are primarily utilized by national health agencies, often in partnership with the labs of governmental drug inspection centers or within multilateral health initiatives led by various UN organizations, U.S. and German aid organizations, faith-based networks, or the incoming goods inspection unit of faith-based healthcare facilities.

Expanding Minilab use

In 2017, the GPHF developed testing methods for five additional active ingredients. As of early 2018, the Minilab **can now test 90 active ingredients**, ranging from antimalarials, antihistamines and analgesics, to antipyretics and antibiotics.

Since 1998, the GPHF has supplied a total of 836 Minilabs to nearly 100 countries, 41 of which were provided in 2017 alone. Of these 41 test kits, our company donated six to the pharmaceutical regulatory agency in Sierra Leone. The frequent reordering of materials confirms that the Minilabs are in high circulation.

Minilab training seminars

In 2017, the GPHF and its partners held a total of ten seminars for Minilab users, mainly in Sub-Saharan Africa, which were attended by well over 100 people. During these seminars, participants learn how to correctly test medicines using the compact laboratory. While the number of Minilab seminars is increasing every year, the GPHF itself is called on for support less and less. This is a good sign: The Minilab is gaining traction, and users are taking the initiative to share their knowledge with others.

Health projects worldwide

We are dedicated to improving medical care around the world. Every year, our Global Medical Education Department sponsors an **array of continuing education initiatives** for healthcare professionals. In doing so, we are helping build the capacities of nurses and physicians, increasing their awareness of symptoms and familiarizing them with advanced treatment methods, which ultimately benefits patients. In 2017, we supported more than 70 different continuing education programs offered by 30 independent educational institutions in the medical sector with over € 7 million. Via e-learning platforms and continuing education courses, more than 350,000 medical professionals took advantage of the offerings of these institutions.

In 2017, we launched the Broaden Your Horizon program, which encourages our Biopharma employees to spend three months working at an NGO in a developing or emerging country. During their stay, they have the opportunity to contribute to **improving the quality of local healthcare**, while also broadening their own horizons. Four of our employees took part in an initial pilot project in India, where they contributed their expertise in fields such as laboratory management and data analysis.

Established in 2017, the Merck Foundation also seeks to raise health awareness (p. 47) and improve healthcare in low- and middle-income countries. Consolidating many of our existing projects under one roof, its main aim is to bolster our access to health efforts.

We also support a wide variety of other projects, an overview of which can be found on our website.

education and culture

Underpinned by a longstanding tradition, the promotion of education and culture is a core element of our commitment to society. By making education and culture accessible, we nurture characteristics that are essential to us as a high-tech company, namely creativity, enthusiasm for new discoveries, curiosity, and the courage to transcend boundaries. With this in mind, we sponsor such initiatives at many of our sites, grant scholarships and facilitate learning in specific subjects.

Our commitment: Principles for our community involvement

When it comes to our commitment to the community, we align our educational and cultural activities to our Group Policy on Contributions to Society, which is detailed under Community involvement (p. 110).

Dedicated to education worldwide

We are committed to **igniting a passion for science** especially among young people, which is why we've been supporting initiatives such as the "Jugend forscht" competition for more than 30 years. Since 1996, we've been organizing the state-level competition for the German Federal State of Hesse and have also hosted the nationals twice.

Laboratories at TU Darmstadt expanded

We encourage young people to come to our Junior Labs and explore their **enthusiasm for conducting experiments.** This initiative links classroom lessons with trending topics and modern methods of research. Since 2008, we've been partnering with the Technical University (TU) of Darmstadt to operate a junior laboratory for chemistry. In 2017, we upped our efforts by adding experiments in new subject areas such as dyestuff synthesis and enzyme kinetics. Over the course of 2017, approximately 2,500 students conducted research here. Since 2016, we've also been running the "livfe BioLab", where students can perform biology experiments under professional guidance. In 2017, more than 1,000 students took advantage of this laboratory.

Continuing education for teachers and expanding school partnerships

As part of our school booster program in Darmstadt and the surrounding area, in 2017 we provided approximately 70 schools with numerous science lesson materials. Around 1,500 students visited our research labs, select manufacturing plants and the classroom laboratory at our headquarters.

In Darmstadt, we support teachers through **continuing education classes** in their field of expertise and also provide educational concepts. In 2017, we once more hosted a science conference attended by more than 200 teachers from the region. In tandem to this, we offered three continuing education courses on the digitalization of classroom laboratory experiments. For our efforts, we were honored with the SchuleWirtschaft-Preis (School-Business Germany Award). In the German Federal State of Hesse, we were awarded first place in the "Business-School partnership for digital education" category.

In 2017, we initiated a pilot project to leverage the experience we've gained through long-standing school partnerships in the Darmstadt area and apply it in other countries. Having already launched one **project in India** in 2017, others are scheduled to follow in Chile, Kenya and Tanzania in 2018. These efforts focus on providing teachers with the tools to design exciting lessons that will spark their students' curiosity in science. We are partnering closely with education experts to develop the concepts for these lessons. Thanks to their invaluable experience and knowledge of the cultural landscapes in the respective countries, we can adapt experiments to local environments and introduce our technologies. An experiment in Tanzania, for instance, will show how food analyses are conducted using the example of local fruits. You can read more about our international education efforts in the magazine section of this report.

SPARK: Igniting a passion for science in the next generation

As part of SPARK, our global volunteer program, employees from our Life Science business sector share their skills and experience with students in order to ignite a passion for science and inspire them to consider a STEM-related career. SPARK activities include our **Curiosity Labs™ program**, which educates students through exciting hands-on, interactive science lessons. Beyond this, we also offer them site tours and career discussions. In addition to providing all the materials pupils need for the practical lessons, we collaborate closely with education experts around the world to ensure that SPARK meets specific local requirements. In 2017, through this initiative, more than 2,500 of our employees volunteered over 13,700 hours around the world to provide exciting insights into the world of science and strengthen our communities.

Curiosity Cube tours the United States

As part of SPARK, in 2017 we launched the Curiosity Cube™, a retrofitted shipping container that has been transformed into a solar-powered **mobile science lab**. The goal of this mobile lab is to bring hands-on science experiments and

state-of-the-art technology in an innovative setting to spark curiosity in the next generation of scientists. In 2017, more than 38,000 students visited the mobile lab. Each one of the nearly 23,000 experiments conducted was led by a Life Science employee.

~29,000

kilometers were covered by the Curiosity Cube™ throughout the United States. It stopped at schools and city centers in over 85 communities.

Most importantly, the Curiosity Cube™ had a direct impact on student achievement and cognition. Following a visit, surveyed teachers indicated that 82% of students used terms and concepts learned at the Curiosity Cube™ in classroom discussions, while 95% of students increased their understanding of life science terminology.

Taiwan: Lab experiments in railway cars

In May 2017, we took part in Taiwan Railways of Popular Science, an event held in Taiwan in which a **science train** made a four-day journey across the country. With it, 27 of our employees traveled to 17 cities, teaching more than 3,000 students about the science behind everyday products and supervising experiments such as how to make liquid crystal display or cosmetics. The science train was developed by professors of two Taiwanese universities in 2016 and is sponsored by the Taiwan Ministry of Science and Technology.

Mobile research lab for environmental analysis

In 2017, we once more lent support to the "Chemistry on the go" initiative of Tamkang University in Taiwan. Under this initiative, Tamkang University has converted a truck into a **mobile research lab for environmental analysis** to give students even in remote parts of Taiwan the opportunity to perform scientific experiments. We've been supplying laboratory materials for the truck since 2014. In 2017, around 20 of our employees also taught classes to approximately 1,000 students. Beyond these efforts, in the course of 2018 we plan to donate a second, fully-equipped laboratory truck to Tamkang University in an effort to reach even more school children.

Partnering with Seeding Labs

In 2017, we sponsored a new online platform for Seeding Labs, an organization that provides **scientists in developing and emerging countries** with lab equipment, training and opportunities to collaborate with experts in their field. This TeleScience platform will feature 11 educational videos and training sessions led by our Life Science employees, who share techniques and tips on a wide range of topics such as sterile sampling and reducing cell culture contamination. Under the auspices of this organization, we also donated laboratory equipment to nine universities in seven countries in a bid to accelerate scientific research. More than 30 employees volunteered their time to help select, decontaminate, inventory, and pack items for donation.

Sparking the curiosity of Chinese primary school children

At the beginning of 2017, we launched the Green Crystal project in China by donating second-hand yet still fully functional tablets to two elementary schools in Sichuan province. The aim of this project is to improve **science education** for primary school students. In September 2017, 17 of our employees in Shanghai participated in this project, traveling to the schools, teaching lessons and supervising scientific experiments. In 2017, around 400 children benefited from this initiative.

Music and literature as ambassadors

Deutsche Philharmonie Merck

What began in 1966 as a company ensemble is now a professional symphony orchestra. The Deutsche Philharmonie Merck is an integral part of cultural life in Darmstadt and regularly goes on international concert tours. We also offer orchestra workshops where children and adolescents can experience playing in a professional orchestra for the first time. Through cushion concerts for children as young as four and youth concerts, we seek to inspire young people and ignite a passion for classical music.

In 2017, guest directors such as Joseph Bastian and Yoel Gamzou helped us celebrate the **50th anniversary of the Deutsche Philharmonie Merck**. Ben Palmer was appointed head conductor and gave his inaugural concert in the basilica of Eberbach Abbey in Eltville am Rhein (Germany). Other guest performers included the Klazz Brothers and the European Union Baroque Orchestra.

~21,000

people attended performances of the Deutsche Philharmonie Merck in 2017. As part of its international tour, the symphony performed concerts in Morocco, Austria, and the Czech Republic.

Building social inclusion through music

In the vicinity of our site in Rio de Janeiro (Brazil), where many children and young people face social instability, we support the School of Music and Citizenship. Since 2011, around 3,700 children and adolescents have received music lessons at this school, with approximately 1,100 in 2017 alone. The dedication of this music school has produced a successful youth orchestra with approximately 40 talented young musicians.

Literary awards for bridge builders

Like music, literature is also an important ambassador between cultures. We therefore award **five literary prizes worldwide.** The Johann Heinrich Merck Award for Literary Criticism and Essay Writing in Germany and the Premio Letterario Merck in Italy are presented on an annual basis, while the Merck Kakehashi Literature Prize in Japan, the Merck Tagore Award in India, and the Merck Translation Award in Russia are granted every two years. These prizes particularly recognize authors who distinguish themselves as bridge-builders between cultures, as well as between science and literature.

Worth € 20,000 and launched in 1964, the Johann Heinrich Merck Award for Literary Criticism and Essay Writing went to journalist and author Jens Bisky in 2017. According to the German Academy for Language and Poetry, he was chosen for his "brilliant style, cosmopolitan outlook and witty level-headedness, which, given the acuity of his judgment, makes him one of the most reliable voices in current discourse".

In Italy, we've been awarding the Premio Letterario Merck since 2003 in recognition of authors who make science accessible to a broad audience. Worth € 10,000, the 2017 prize was presented to U.S. author Sam Kean for his essay "The Violinist's Thumb". The jury decided on an honorable mention for Paolo Zellini, an Italian mathematician, author and professor. Both have a special understanding of how to bridge the gap between literature and science.

In Italy, we also pledge resources to promoting the **next generation of literary genius**. In addition to creative writing workshops, we host a youth writing competition. The winners of La Scienza Narrata are chosen together with the winners of the Premio Letterario Merck.