



CONNECT!

Corporate Responsibility 2018

A NETWORK OF POSSIBILITIES

We live in an interconnected world filled with possibilities. A world constantly being transformed by new ideas. We believe in science and technology as a force for good, a belief that has driven our work since 1668 and will continue inspiring us to find more joyful and sustainable ways to live. Yet, recognizing that no single individual can solve tomorrow's challenges alone, we are convinced that the key to a better future lies in connecting with others. We therefore network with companies, scientists and innovators from across the globe. Together, we want to bring new ideas to life - for patients, for customers and for society as a whole.

"At Merck, we are developing technological advances that benefit all humankind. We believe that the march of digitalization is bringing the world closer and closer and thus carrying us farther forward than ever before. We are living up to the massive responsibility that arises from utilizing big data and technologies such as artificial intelligence. What's more, we connect with strong partners across the globe to leverage our enormous combined potential for our business and for society as a whole."

Stefan Oschmann,

Chairman of the Executive Board and CEO



PROGRESS THROUGH CURIOSITY

2018 was our big anniversary, marking 350 years in pursuit of curiosity, science and technology – the great driving forces behind progress. Over the past three and a half centuries, we have transformed ourselves into a vibrant science and technology company. With some 52,000 employees across 66 countries, we now make a positive difference to millions of people's lives every day. But throughout our continual evolution, one thing has always stayed constant: a founding family that remains the majority owner of the company to this day.

Fiscally speaking, 2018 was a good year for us. Sales rose slightly, increasing by 2.2% to € 14.8 billion (2017¹: € 14.5 billion). EBITDA pre, our key earnings indicator, totaled € 3.8 billion, thereby com-

ing just short of our 2017 EBITDA pre. Finally, we divested our Consumer Health business for non-prescription products at the end of 2018.

We are Merck. The only exceptions are the United States and Canada, where we operate as EMD Serono in the Biopharma business, as MilliporeSigma in the Life Science business and as EMD Performance Materials in the materials business.

Spanning Healthcare, Life Science and Performance Materials, science is at the heart of everything we do. It drives the discoveries we make and the technologies we create.

¹ Excluding the Consumer Health business divested in fiscal 2018. Key figure for fiscal 2017 adjusted.

Healthcare

We are here for people every step of the way, helping to create, improve and prolong life. We commercialize prescription drugs to treat conditions such as cancer, multiple sclerosis, diabetes, and cardiovascular disease and deliver personalized treatments for some of these serious conditions. In addition, we help many couples to realize their dream of becoming parents. Often working hand in hand with external partners, our research and development teams innovate groundbreaking discoveries that benefit patients.

Life Science

We empower the scientific community and work together to tackle the greatest challenges faced within our sector. For instance, we supply scientists with laboratory materials, technologies and services that help them to deliver breakthroughs more quickly. This practice accelerates access to health by assuring that tests are accurate and medicines can be trusted.

Performance Materials

Whether high-tech materials for the electronics industry, liquid crystals and OLED materials for displays, or effect pigments for coatings and cosmetics: Our science can be found in technologies that are enriching everyday life and changing the way we access and display information. Going forward, we will continue our efforts to make mobility safer, homes and devices smarter, and technology more sustainable.

A TOAST TO SUCCESSFUL OUTREACH



60%

of our projects received hands-on support from our employees.

350 years celebrated, and just as many charitable activities. During our anniversary in 2018, we wanted to do one good deed for every candle on our birthday cake, ultimately surpassing our goal with 366 projects total. In particular, we sought to reach out to people in the direct vicinity of our sites across the globe. Our efforts focused on issues that were near and dear to our employees, with many of our people getting personally involved

by volunteering or donating money and supplies. They also had the chance to vote for their favorite projects, with the four most popular initiatives receiving additional funding from our company. All in all, we supported projects across 60 countries during our 2018 campaign.

CREATING ADDED VALUE

Our new corporate responsibility strategy seeks to create added value both for us as a company as well as for the community. In 2018, we revised and realigned our CR approach, adapting our three strategic spheres of activity to bring them more in line with our businesses. Our new focus areas are "Global Health", "Sustainable Solutions" and "Broad Minds".



Global Health

We provide assistance to people in low- and middle-income countries and conduct research on neglected tropical diseases.



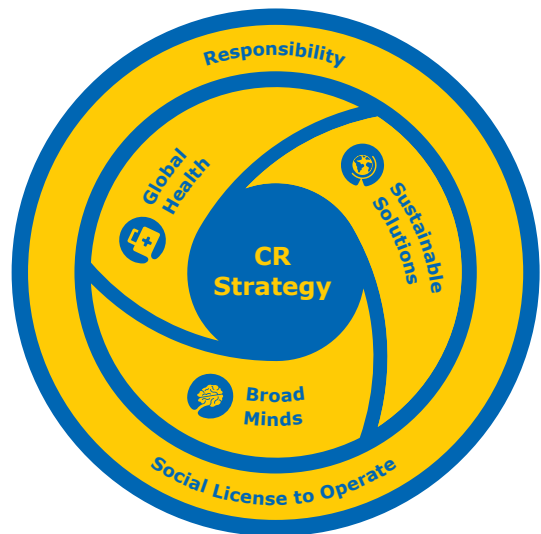
Sustainable Solutions

We are constantly working to improve the sustainability footprint of our products.



Broad Minds

We endeavor to excite people about science and culture, inspiring curiosity and helping their creativity take flight.



IMPROVING HEALTH WORLDWIDE

An estimated 400 million people in low- and middle-income countries lack access to equitable and affordable basic health services. Hand in hand with our partners, we help provide local solutions and develop treatments for neglected tropical diseases. Through our Global Health Institute, we are discovering and delivering new diagnostics, therapies and preventive approaches to address infectious diseases such as malaria and schistosomiasis. Moreover, we are working on highly pressing therapeutic challenges such as antimicrobial resistance.



What can we do to control dangerous infectious diseases, or eliminate them altogether?

How can we enable access to health and address healthcare gaps?

We are striving to make health solutions affordable, to raise awareness of diseases and to teach people how to manage them. Moreover, we are researching innovative drugs, optimizing existing programs and developing new approaches to help people at the point of care. Recognizing that no single company or organization can overcome the immense access to health challenges alone, we closely collaborate with a wide range of partners, taking part in industry-wide initiatives and working hand in hand with others to blaze new trails.



At a school in Ethiopia, tablets are given out to treat schistosomiasis, a tropical parasitic disease.

DIGITAL NETWORK TO DELIVER HEALTH

Across the globe, about 200 million people are affected by schistosomiasis, a tropical parasitic infection that also impacts numerous children. In a bid to completely eliminate this disease, we have been donating our schistosomiasis drug to WHO for over a decade, sometimes providing up to 250 million tablets per year.

In Kenya, for instance, school children receive this medicine through a government-operated treatment campaign. But there are logistical challenges. In Africa, for instance, the infrastructure outside of urban areas is often inadequate, with medicine deliveries going missing or being distributed inefficiently. In response to this situation, we have implemented a pilot project called NTDeliver Last Mile.

Under this initiative, teachers in Kenya send a text message to our software system every time they administer the medication, thereby reporting the number of children treated and the number of tablets remaining. This information helps us pinpoint treatment gaps and enhance the distribution process for the medicine.

12,000

Kenyan teachers collaborated on the project in 2018.

NTDeliver

NTD stands for neglected tropical diseases.



FIGHTING ANEMIA

In India, more than 50% of women suffer from anemia, which gives rise to symptoms such as fatigue, physical weakness and difficulty concentrating. In March 2018 we partnered with a not-for-profit called Doctors for You to launch "Swasth Nari Sashakt Parivar" ("Healthy woman, healthy family"). Part of our "Healthy women, healthy economies" initiative, this program screened women for anemia and, as needed, provided them with nutritional advice and medical care. To encourage these women to take care of their health and stick to their course of treatment, this organization also offers them skill development courses. Starting in 2019, around 100 women who have shown health improvement will receive training as a beautician or tailor.

4,800

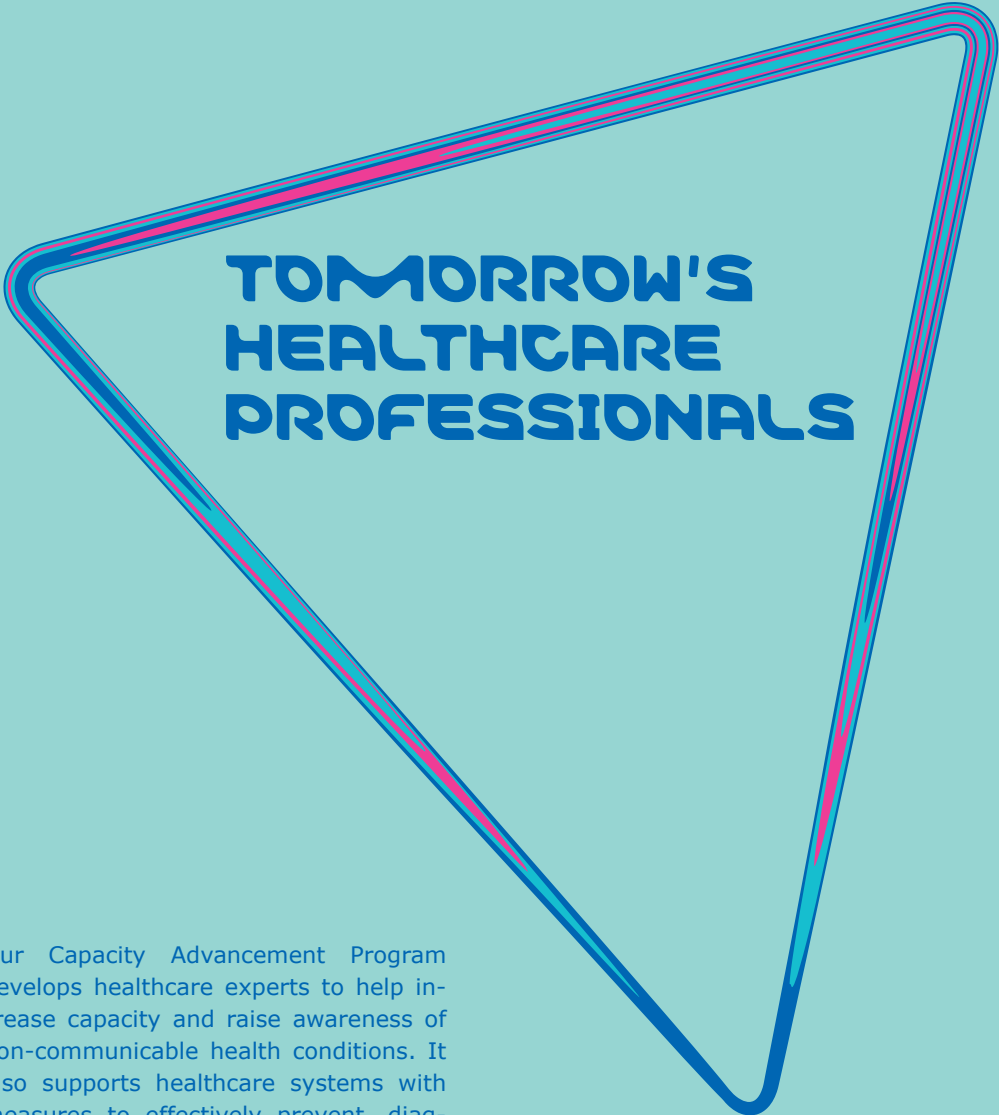
women aged 18 to 35 were treated in 2018 through the anemia program.





**A world where
everyone can
lead a healthy
and fulfilling
life**





TOMORROW'S HEALTHCARE PROFESSIONALS

Our Capacity Advancement Program develops healthcare experts to help increase capacity and raise awareness of non-communicable health conditions. It also supports healthcare systems with measures to effectively prevent, diagnose and manage these conditions.

Within this program, we launched our Diabetes and Hypertension Awards in 2016. Open to all medical postgraduates, these awards aim to establish a strong platform of specialized diabetes and hypertension experts in low- and middle-income countries. The winners are granted enrollment into an internationally recognized one-year postgraduate online diploma program that advances their clinical knowledge in tackling these chronic diseases.

50

diploma graduates from over 25 African and Asian countries have benefited from the program to date.

About the foundation

Established in 2017, the Merck Foundation is the philanthropic arm of our company and aims to improve the health and wellbeing of people as well as advance their lives through science and technology. The foundation's efforts are primarily focused on improving access to innovative healthcare solutions in underserved communities, building healthcare and scientific research capacity, and empowering people in STEM (science, technology, engineering and mathematics) with a special focus on women and young people.

BREAKING THE STIGMA

In many cultures, childless women still suffer from discrimination, stigma and ostracism. Their inability to have children results in isolation, disinheritance, physical and psychological violence, and often divorce. Our More Than a Mother program aims to increase access to regulated, cost-effective fertility care and build healthcare capacity in Africa as well as in low- and middle-income countries. This initiative seeks to empower these women by providing access to information, improving their health and boosting their self-confidence.

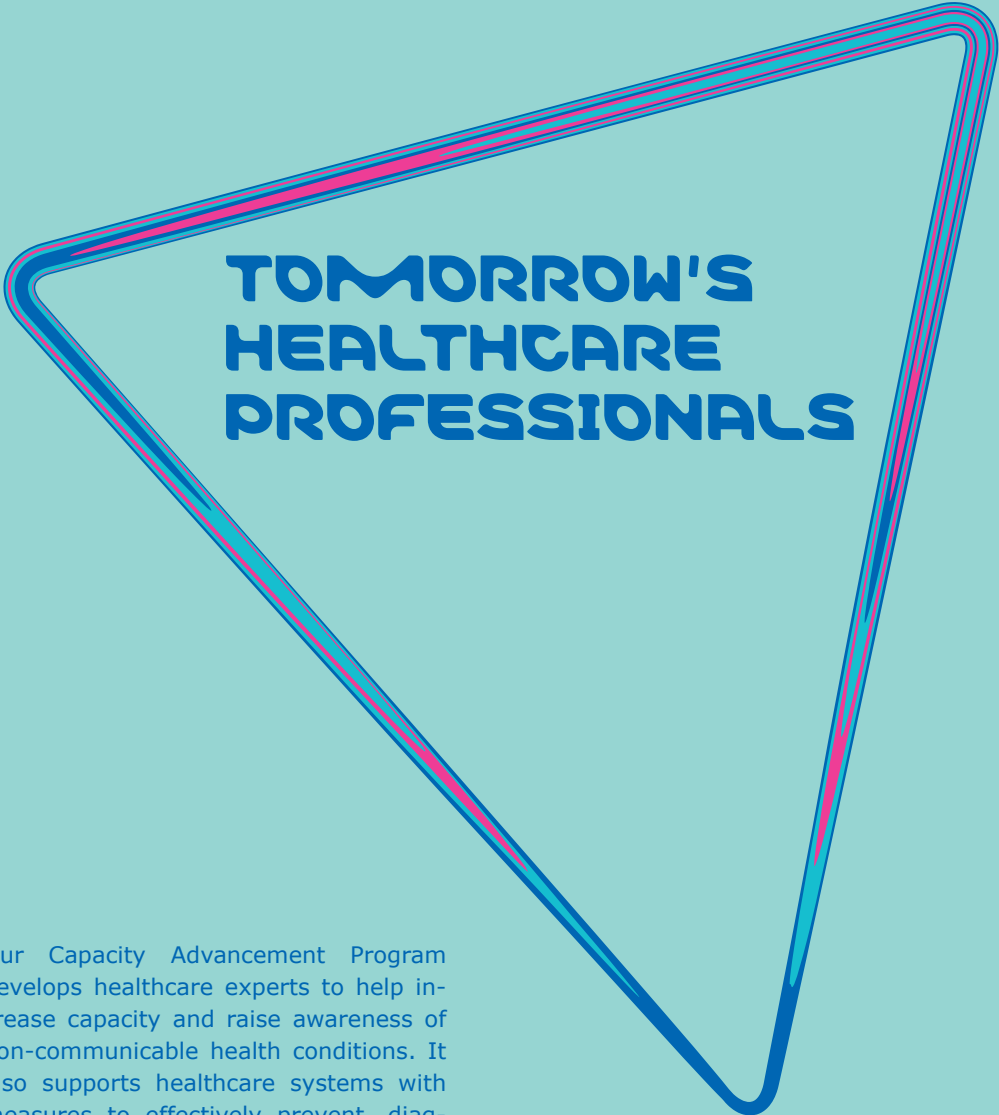
The program focuses on:

- raising awareness of infertility prevention and male infertility
- building advocacy in cooperation with African first ladies, ministries of health, academia, and the media
- providing medical education and practical training for fertility specialists and embryologists.

80

standalone African and Asian fertility specialists and embryologists from 35 countries have been established to date thanks to our help.





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IMPROVING ACCESS TO CANCER CARE

Our Oncology Fellowship Program builds professional cancer care capabilities to increase the limited number of oncologists in Africa and low- and middle-income countries worldwide. In partnership with African ministries of health, local governments and academia, we offer one- and two-year fellowship programs across all oncology disciplines.

45

future oncologists from more than 20 African countries have been trained since the program's launch in 2016.

"The Merck Oncology Fellowship Program is very important for Zambia. It provided me and other doctors with a unique training opportunity that will enhance pediatric oncology care, research and teaching in the country."



Justin Mulindwa

from Zambia is a fellow of the Merck Oncology Fellowship Program. He works in the country's only center for the treatment of children suffering from cancer.

OUR MISSION

Working together with select partners, the Merck Foundation aims to:

- raise awareness of disease prevention and early detection by providing access to information, improving health and changing mindsets
- expand professional capabilities in scientific research, technology and healthcare
- expand access to innovative and equitable healthcare solutions
- build advocacy to address health, social and economic challenges
- empower women and young people in STEM



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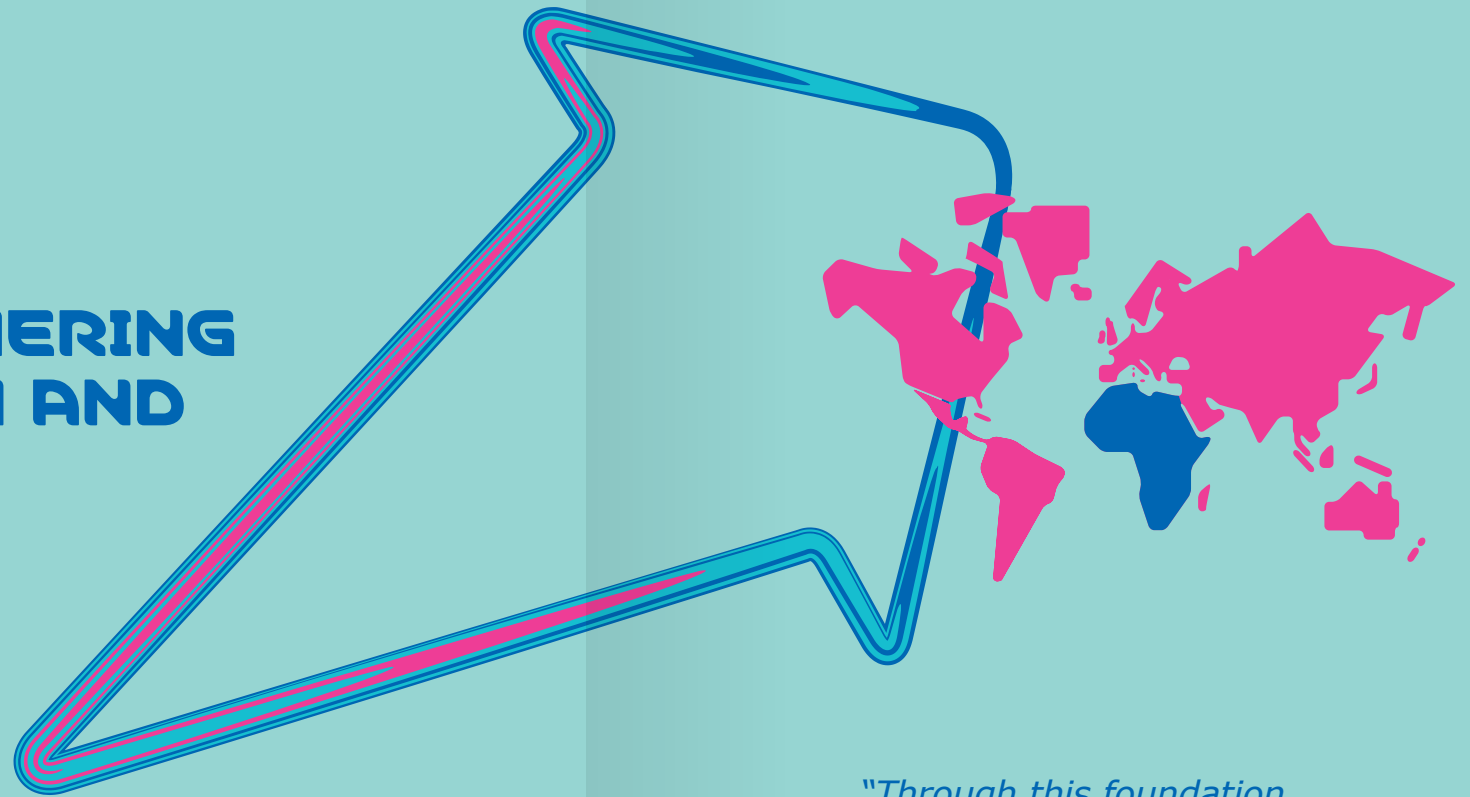
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EMPOWERING WOMEN AND YOUTH



Under our STEM program, we partner with global and local institutions and organizations to empower women and young people in the areas of science and technology. We see education as an important factor in promoting economic well-being in Africa. Our annual Best African Woman Researcher Award and Best Young African Researcher Award recognize the outstanding accomplishments of African scientists in order to promote their research and honor their contributions to STEM education.



Manasi Thakur
empowers Indian girls
and women in STEM.

"Through this foundation, Merck combines many of its corporate responsibility activities under one roof and considerably expands its scope to address the health, social and economic challenges of the 21st century."

Rasha Kelej, CEO Merck Foundation

To read more about the Merck Foundation programs and their impact, visit www.merck-foundation.com

FINDING SUSTAINABLE SOLUTIONS

We are constantly working to improve the sustainability footprint of our products across their lifecycle – all the way from development through to use by our customers. We take this approach because many of our customers seek to drive sustainability and have set ambitious goals that our products can help them achieve.



How can we help our customers enhance the sustainability of their products?

How can we rapidly transform cutting-edge technologies into functional, sustainable products?



Energy-efficient liquid crystal displays in the foyer of our Innovation Center in Darmstadt (Germany).

Working hand in hand with our customers, we develop solutions to help them make their products more sustainable. Within our Life Science business sector, our own Design for Sustainability program allows us to systematically enhance the sustainability footprint of our instruments and devices. We endeavor to reduce the environmental and health impacts of our products across their entire life cycle, from cradle to grave. For its part, our Performance Materials business sector focuses on solutions for the electronics industry such as specialty chemicals used in the manufacture of microchips and materials for displays. We thus offer smart solutions that help save energy on a day-to-day basis.

GOING FOR GREEN

Solvents are used for a variety of purposes such as dry cleaning, printer ink and nail polish remover. The problem? Most of them are not particularly eco-friendly and are subject to increasingly stringent regulatory restrictions. To address these issues, we have joined forces with the Green Chemistry Centre of Excellence at the University of York (United Kingdom) to launch a “greener” solvent called Cyrene™.

This solvent is more environmentally sustainable and safer to use than conventional options. Bio-derived from rapidly renewable raw materials, it is manufac-

tured from waste cellulose extracted from the Monterey pine (*pinus radiata*), a softwood that is very popular as an agricultural crop and for reforesting fallow land.

1.4

meters is the average annual growth of a Monterey pine.



OLED materials can be used in a variety of ways – for example in lighting.



FLEXIBLE DISPLAYS

Believe it or not, there is such a thing as ultra-thin displays that you can roll up! In fact, thanks to organic light-emitting diodes (OLEDs), these screens can be not only rolled up, but also bent and twisted as well! Although mass application is still a long way off, OLEDs are already taking many smartphones and televisions by storm with their brilliant colors. One major advantage is that OLEDs enable extremely thin, lightweight displays that use hardly any power. We are one of the leading manufacturers of OLED materials and, going forward, aim to make our production processes more resource efficient. To further drive the develop-

ment of innovative OLED applications, we opened an OLED Technology Center in June 2018. Located in Shanghai (China), the center serves as a collaboration space to work with customers on ideal solutions for OLED display products. As well as this new venture, at the end of 2018 we entered into a strategic partnership with Chinese supplier Visionox Technology to accelerate the development of these materials.

INSPIRING PEOPLE

As a science and technology company, we believe that creativity and curiosity are the bedrock of science, giving us a vested interest in sparking enthusiasm for STEM. Because music and literature inspire people and encourage them to think outside the box, we not only support education and research programs at schools and universities, but also promote a myriad of cultural initiatives worldwide.



How can we make young people more interested in science?

How can we create the optimal conditions for cutting-edge research worldwide?

Our company has a long tradition of promoting education and culture. Working hand in hand with our partners, we support education projects at schools and connect up-and-coming researchers around the world in a bid to improve the conditions for their vital work. At the same time, we seek to nurture the characteristics that underpin groundbreaking discoveries, such as creativity, a passion for discovery, curiosity, and the courage to push boundaries. Along these lines, we also support numerous projects in the fields of literature and music.





1,500

people from roughly 100 countries have visited the TeleScience platform since its launch.

CONNECTING RESEARCHERS WORLDWIDE

Although bright minds are spread across the globe, they often live in low- and middle-income countries, where they lack the support needed to make the next scientific breakthrough a reality. Given this situation, we are working to remove these barriers and bring the global scientific community closer together. In 2018, we partnered with Seeding Labs to launch TeleScience, a digital platform that accelerates access to scientific education and research for thousands of scientists in low- and middle-income countries. Through educational videos and training sessions led

by our Life Science employees, TeleScience offers everything from tips on better presenting research results all the way to instructions on extracting DNA from cells. And the best part: the videos are accessible from anywhere in the world.

MAKING GREAT THINGS HAPPEN

For hundreds of years, science and technology have been helping make the world a better place. Idea sharing is an essential element in this process. To mark our 350th anniversary, in 2018 we therefore launched the "Curious2018 – Future Insight" conference in Darmstadt. Representing top researchers from all over the world, 60 renowned speakers, including six Nobel Laureates, gave talks that inspired around 1,300 participants. During the proceedings, we also announced a new research award called the Future Insight Prize. Over the next 35 years, we intend to provide € 1 million annually in an effort to stimulate the

innovative development of key products to bring meaningful visions to life for the benefit of humanity. The Future Insight Prize will be presented for the first time in 2019 in the category of "Pandemic Protector".

1,300

participants discussed the future of science and technology at the Curious2018 – Future Insight conference.

 curious2020.com



CURIOUS?

Find out more about our work.

Our Corporate Responsibility Report provides extensive information about our sustainability efforts, along with all the details of the projects and activities we pursued in 2018.

To access the 2018 report online, please visit:

 www.merckgroup.com/en/cr-report/2018/



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