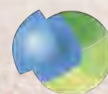


Purpose + Impact

2018 Corporate Social Responsibility Report



Biogen

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This report contains forward-looking statements made pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995, including statements relating to Biogen’s business activities; Biogen’s strategy and plans; potential of Biogen’s commercial business and pipeline programs; capital allocation and investment strategy; clinical trials and data readouts and presentations; regulatory filings and the timing thereof; and anticipated benefits and potential of investments, collaborations and business development activities. These forward-looking statements may be accompanied by words such as “aim,” “anticipate,” “believe,” “could,” “estimate,” “except,” “forecast,” “goal,” “intend,” “may,” “plan,” “potential,” “possible,” “will” and other words and terms of similar meaning. Drug development and commercialization involve a high degree of risk, and only a small number of research and development programs result in commercialization of a product. Results in early stage clinical trials may not be indicative of full results or results from later stage or larger scale clinical trials and do not ensure regulatory approval. You should not place undue reliance on these statements or the scientific data presented.

These statements involve risks and uncertainties that could cause actual results to differ materially from those reflected in such statements, including risks relating to difficulties in obtaining and maintaining adequate coverage, pricing and reimbursement for Biogen’s products; the occurrence of adverse safety events, restrictions on use with Biogen’s products or product liability claims; uncertainty of success in developing, licensing or acquiring other product candidates or additional indications for existing products; the risk that positive results in a clinical trial may not be replicated in subsequent or confirmatory trials or success in early stage clinical trials may not be predictive of results in later stage or large scale clinical trials or trials in other potential indications; risks associated with clinical trials, including Biogen’s ability to adequately manage clinical activities, unexpected concerns that may arise from additional data or analysis obtained during clinical trials, regulatory authorities may require additional information or further studies or may fail to approve or may delay approval of our drug candidates;; problems with Biogen’s manufacturing processes; Biogen’s dependence on collaborators and other third parties for the development, regulatory approval and commercialization of products and other aspects of Biogen’s business, which are outside of Biogen’s control; failure to successfully execute on Biogen’s growth initiatives; risks relating to investment in and expansion of manufacturing capacity for future clinical and commercial requirements; failure to comply with legal and regulatory requirements; environmental risks; risks relating to the sale and distribution by third parties of counterfeit versions of Biogen’s products; and the other risks identified in Biogen’s most recent annual or quarterly report and in other reports Biogen has filed with the Securities and Exchange Commission.

These statements are based on Biogen’s current beliefs and expectations and speak only as of the date of this report. Biogen does not undertake any obligation to publicly update any forward-looking statements.

Purpose + Impact



Overview

At Biogen, our mission is clear: we are pioneers in neuroscience. We care deeply about making a difference and we are passionate about our commitment to patients, our employees, the environment and the communities where we live and work. The foundation for these commitments is reflected in our approach to corporate social responsibility (CSR) – an approach that we believe provides real benefit for our business and the world.

Our purpose is to improve the lives of patients, which is echoed in our philosophy: **Caring Deeply. Working Fearlessly. Changing Lives.™**

Our purpose is to improve the lives of patients, which is echoed in our philosophy: **Caring Deeply. Working Fearlessly. Changing Lives.™** Using our expertise and technology, we have pioneered drug discovery and we remain committed to expanding access to new potential treatments with the goal of making a meaningful difference in the lives of people suffering from devastating neurological conditions. This continued pursuit of scientific and therapeutic excellence is powered by the talent and commitment of our people. As champions for diversity and inclusion, we steadfastly believe that humanity benefits when employees can bring their whole selves to work and contribute to their fullest potential.

We strongly believe in the importance of science – for our business and for the environment. Our climate reduction targets are science-based and we embed science and context in our broader commitment to environmental sustainability. We also aim to inspire future generations of scientists and we believe this approach is central to our mission as we build on our legacy of science and discovery to pursue increasingly complex challenges in neuroscience.

We are passionate about our CSR efforts: they reflect who we are, and our commitment to patients and the overarching goal of health. They also create value for our business and the world – helping us attract the best and brightest and sparking innovation to not only change lives, but also change the world we live in for the better.

CEO Statement



Pioneers of a Better Future

In 2018 we celebrated the 40th anniversary of Biogen – a pioneer in the independent biotechnology space. Today we remain as forward thinking and determined as our founders, whose vision for the treatment of devastating diseases has helped transform countless patient lives and set an example in medical innovation.

Not only have we expanded our therapeutic focus within neuroscience, positioning us to lead in an area of medicine that has vast unmet needs, but we also continue to demonstrate leadership in how we work.

As we strive to improve patient outcomes, we care deeply about making a difference and keep social and environmental outcomes top of mind. We are passionate about our commitment to patients, our employees, the environment, and the communities where we live and work. We have a great sense of responsibility about our role as corporate citizens and our impact on society both today and in the future. This is why we monitor and report on our progress; so we can constantly look at how we can improve. Ultimately, we want to help make the world a healthier place for the greatest number of people. We take pride in tackling intractable diseases and in taking a comprehensive approach to health.

Pioneers for Patients & Access

First and foremost, our purpose is to improve the lives of patients. This goal is the animating force behind every therapy we explore – and one we have achieved with SPINRAZA, the first approved treatment for the rare neurological disease, spinal muscular atrophy (SMA).

As we strive to improve patient outcomes, we care deeply about making a difference and keep social and environmental outcomes top of mind

Since its launch two years ago, it has become the standard of care in SMA, and as of December 31, 2018, SPINRAZA has been approved in over 40 countries and received formal reimbursement in 30 countries.

But our commitment doesn't end there. Knowing the importance of awareness and early treatment, we also successfully advocated for the addition of SMA to the Recommended Uniform Screening Panel for newborns in the U.S. and launched a new collaboration with genetics company, Invitae, to offer genetic testing at no cost to individuals suspected of having, or have been clinically diagnosed with, SMA.

We also continue to adapt our thinking and approach to the pricing and access to our breakthrough therapies. Our newly revised pricing principles are a clear and transparent set of guidelines aimed at supporting our pricing and access actions in an increasingly ambiguous and changing environment.

Our culture and mission attract some of the world's leading scientific minds – individuals who are passionate about improving the lives of this generation and future generations



Pioneers for Diversity & Inclusion

Our culture and mission attract some of the world's leading scientific minds – individuals who are passionate about improving the lives of this generation and future generations. These individuals come from all walks of life, and we are strengthened daily by the value of their diversity of thought and experience.

That's one of the reasons we were an early industry supporter of the Yes On 3 campaign, which aimed to preserve Massachusetts protections for transgender people. Through our advocacy, time, financial support and collaborative work with others in the business community, we helped to make the Yes On 3 campaign a success, and we continue to encourage diversity and inclusivity in our industry.

Pioneers in STEM Education

We continue to strengthen our ongoing investment in the next generation of pioneering scientists through our efforts to make STEM education and careers accessible to diverse populations. Our Community Lab programs engage and inspire middle and high school students in science learning. Since 2002 more than 50,000 students have participated in Community Lab at our Cambridge, Massachusetts and Research Triangle Park (RTP), North Carolina locations.

In 2018 we added to that with the launch of STAR – an innovative \$10 million multi-year coordinated funding strategy designed to help catalyze the development of a STEM education ecosystem in Cambridge and Somerville, Massachusetts. The goal is to nurture a diverse pipeline of students interested in pursuing STEM from middle school through high school and into college.

interested in pursuing STEM from middle school through high school and into college.

Pioneers in Science-Based Environmental Commitments

We employ science in our approach to environmental sustainability, both in terms of our resource use and in our daily operations. We also strive to be a catalyst for positive change by encouraging others in our value chain to adopt responsible environmental policies.

Our science-based approach is demonstrated by our 2030 greenhouse gas (GHG) reduction target of 35 percent. This target, which was approved by the Science Based Targets Initiative, can also be seen in our context-based water targets for our major facilities. Since 2014 we've been proud to be a carbon-neutral company, with a 100% renewable power commitment, and this approach has generated a 76% reduction in our operational carbon intensity since 2006.

Looking ahead: Our commitment to society

This is a remarkable time for Biogen. As we reflect on the accomplishments of our first 40 years, our commitment to patients is undimmed. We continue to be pioneers in neuroscience and have taken a leadership role in multiple aspects of corporate social responsibility, including diversity and inclusion and environmental sustainability. In fact, in 2018 Biogen was ranked as the most sustainable biotech company by the Dow Jones Sustainability Index. Additional details on how we are living that commitment can be found in this CSR report.

I would like to extend my gratitude to all of our employees for rising to the challenge of corporate social responsibility. It exemplifies our commitment to our patients, our communities and to the overarching goal of health. This is true leadership, because it enables us to not only change lives, but also change the world we live in for the better.

To that end, I am proud to share Biogen's 2018 Corporate Social Responsibility Report.



Michel Vounatsos
Chief Executive Officer

Since 2014 we've been proud to be a carbon-neutral company, with a 100% renewable power commitment, and this approach has generated a 76% reduction in our operational carbon intensity since 2006

About Biogen



Overview

At Biogen, our mission is clear: we are pioneers in neuroscience. Biogen discovers, develops and delivers worldwide innovative therapies for people living with serious neurological and neurodegenerative diseases as well as related adjacencies. One of the world’s first global biotechnology companies, Biogen was founded in 1978 by Charles Weissmann, Heinz Schaller, Kenneth Murray and Nobel Prize winners Walter Gilbert and Phillip Sharp. Today the company has the leading portfolio of medicines to treat multiple sclerosis, has introduced the first approved treatment for spinal muscular atrophy and is focused on advancing neuroscience research programs in Alzheimer’s disease and dementia, multiple sclerosis and neuroimmunology, movement disorders, neuromuscular disorders, acute neurology, neurocognitive disorders, pain and ophthalmology. Biogen also commercializes biosimilars of advanced biologics.

External Recognition

- #1 Biotech company on the Dow Jones Sustainable World Index (DJSI) in 2018
- Recognized as one of Most Innovative Companies of 2018 by Fast Company
- Five Consecutive Years ‘Best Place to Work’ for LGBTQ Equality in the U.S. by the Human Rights Campaign – Received a perfect score of 100 for 2018
- Recognized on Forbes’ 2018 World’s Best Employers Global List (#51), Best Employers for Women List (#38) and Best Employers for Diversity in the U.S. (#111)
- #1 Biopharma company on Forbes’ America’s ‘Most JUST Companies’ list in 2018 (#19 overall)
- 100 Best Corporate Citizens for 2018 by CR Magazine (#37)
- 2018 International Prix Galien Award as Best Biotechnology Product for SPINRAZA to treat SMA. Honor marks the seventh Prix Galien for SPINRAZA, following country recognitions in the U.S., Germany, Italy, Belgium-Luxembourg, the Netherlands and the United Kingdom
- #10 on IDEA Pharma’s 2018 Pharmaceutical Innovation Index
- 100% score on the Disability Equality Index (DEI) in 2018 – a joint initiative of AAPD and Disability:IN
- The Sustainability Yearbook (RobecoSAM) – Gold Class and Industry Mover Award (2019); Silver Class and Industry Mover (2018)
- Named to CDP’s Supplier Engagement Rating Leader Board in 2018
- One of 161 leading businesses committed to 100% renewable power via RE100 in 2018
- Environmental Protection Agency’s Green Power Partnership National Top 100 list in 2018
- 2018 Boston Biotech Lifetime Achievement Award presented by LeadingBiotech in honor of Biogen’s 40th Anniversary
- 2018 Climate Leadership Award for Excellence in Greenhouse Gas Management / Goal Setting from the Center for Climate and Energy Solutions (C2ES) and The Climate Registry (TCR) in partnership with Bloomberg Philanthropies
- 2018 “Breakthroughs in the Community” Award from Breakthrough Greater Boston for inspiring excitement for learning, creating paths to college and promoting careers in education
- 2018 Corporate Philanthropy Award from Triangle Business Journal (NC) for outstanding corporate partnership with the Museum of Life and Science in Durham
- 2018 STEMmy Award for STEM Industry Partner of the Year from STEM in the Park (RTP) celebrating the achievements of individuals, schools, organizations and partners for outstanding work in STEM
- Named one of top charitable contributors in Massachusetts by Boston Business Journal in 2018

Guiding Principles

Our Guiding Principles

Our commitment is grounded in our [Code of Business Conduct \(Values in Action\)](#), our [Sustainability Policy](#) and our other related policies and position statements. These principles and policies outline our focus on ethical business conduct, compliance, accountability and transparency and other topics, including:

Code of Business Conduct (Values in Action)

Our [Code of Business Conduct](#) provides guidance on making ethical decisions while conducting business on behalf of Biogen. Our clinical research and other ethical standards for our employees and business partners are included in the Code of Business Conduct.

Elements of Our Culture

Much like the periodic table of elements documents the building blocks of the universe around us, the [Biogen Elements](#) give shape to our company's culture. They include fundamentals like a pioneering spirit, strong ethics, personal accountability, inclusivity, agility and an unwavering customer focus.

Product Stewardship

We comply with applicable regulations and work to minimize adverse health, safety, environmental and social [impacts of our products](#), and we do this while working to maximize their benefits and value through their full life cycle. One example of our efforts in this area is that we are investing in serialization technology to make our product more difficult to counterfeit, with the goal of improving patient safety and health outcomes.

Patient Safety

[Patient safety](#) is our highest priority and we are committed to complete and timely evaluation of the benefits and risks of our therapies and to communicating this information to help patients and health care professionals make informed treatment decisions. We take seriously our ethical and regulatory responsibility to continually assess and communicate the benefits and risks of our products and investigational therapies to patients, health care professionals and regulators.

Global Privacy Program

We respect the [privacy and safeguard the security](#) of the personal information we collect. Doing so is fundamental to our commitment to patients, health care professionals, business partners, employees and the communities we serve.

Pricing & Access Principles

As a pioneer in neuroscience, we have the opportunity and responsibility to bring potentially transformative treatments to patients. We have a clear and transparent series of principles to guide our pricing and access actions for our breakthrough therapies. We recognize that prices for, and access to, treatments are chief concerns for patients, providers, payers and policy makers. We work collaboratively with all parties to help ensure that patients are not denied access to life-changing therapies. Learn more about our [access programs](#) and [pricing principles](#).

Supply Chain Responsibility

Our [Code of Business Conduct](#), [Human Rights Position Statement](#) and [Anti-Slavery and Human Trafficking Statement](#) establish the principles and practices of ethical business, which we expect all of our suppliers, business partners and employees to follow. In addition, our commitment to inclusive sourcing and procurement practices is represented in our supplier diversity program.

Human Rights Position

Biogen respects fundamental [human rights](#) and believes that every individual deserves to be treated fairly and with dignity. Biogen is committed to supporting internationally recognized fundamental human rights activities and initiatives.

Biogen Anti-Slavery and Human Trafficking Statement

At Biogen, we are committed to upholding human rights and ensuring that [modern slavery](#) (in all its forms) is not tolerated within our global business or our supply chain. We have a zero tolerance approach to modern slavery wherever we conduct business around the world,

Transparency Reporting

Biogen is committed to meeting its global transparency reporting requirements. We believe [transparency](#) is an important part of our ongoing collaboration with the health care community, helping to build a community of trust and respect with healthcare professionals, patients, industry peers, shareholders and the public.

Clinical Trial Transparency and Data Sharing

We are committed to [sharing information about our clinical research](#) with patients and researchers to enhance public health.

Supplier Diversity – Working With Us

We believe that partnering with [small and diverse](#) suppliers supports economic growth, fosters innovation and enables us to achieve a competitive advantage globally. Our supplier diversity program ensures that small and diverse business enterprises have an equitable opportunity to compete for Biogen’s business. As such, supplier diversity is integrated into our procurement procedures. Our supplier diversity program includes businesses owned by minorities, women, veterans and service-disabled veterans, lesbian, gay, bisexual and transgender individuals and persons with disabilities.

Clinical Research and Bioethics

We are committed to the safe and ethical use of biotechnology to improve the quality of human life, and we recognize that we must approach technology with a balance of vigilance, diligence and humility. [Our approach to bioethics](#) is guided by the Biotechnology Industry Organization’s (BIO) principles, including a respect for the potential significant benefits of biotechnology and a commitment to use it only for the benefit of humankind.

Research Collaborations

We are committed to bringing novel therapies to market and focusing on hard-to-treat disease areas with significant unmet medical needs. As this challenge is often bigger than any individual company, we [work with collaboration partners](#) in both the public and private sectors to harness the latest advances in science and technology.

Animal Welfare

At times, we are required by standards of scientific best practice, or by government agencies charged with the protection of public health, to conduct or sponsor research that uses animals. When we do so, we adhere to applicable national and international laws, policies and guidelines on the humane treatment of animals used in research. These include, but are not limited to, the Animal Welfare Act, the U.S. Public Health Service Policy, the National Institutes of Health and the Association for Assessment and Accreditation of Laboratory Animal Care.

Sustainability Policy

[Sustainability at Biogen](#) stems from our commitment to both innovation and ethical conduct. By continually expanding our approach to sustainability and encompassing economic, social and environmental factors, we believe we will build a stronger, more vital company capable of making new discoveries that could improve the lives of many more people in the future.

Climate Strategy

Our impact on the environment factors significantly in how we view our mission to improve the lives of patients and operate as a responsible and sustainable company. We [carefully manage the way we use resources](#), striving to reduce, mitigate and, in the case of carbon emissions, neutralize our footprint wherever possible.

Comprehensive Compliance Program

To conduct our business with the highest level of integrity, we have established and maintain a [comprehensive compliance program](#) in accordance with the laws of our industry and the “Program Guidance for Pharmaceutical Manufacturers” published by the U.S. Department of Health and Human Services.

Corporate Governance Principles

The Company’s Certificate of Incorporation and Bylaws, together with our [corporate governance principles](#), provide the framework for the corporate governance of Biogen.

Environmental Health and Safety Policy

Our [Environmental, Health and Safety Policy Statement](#) sets forth our commitment to provide and maintain a healthful and safe work environment and to minimize the impact of our business operations and products on the environment.

Political Contributions Policy

Our [political contributions policy](#) outlines Biogen’s participation in the political and legislative processes.

Patients



Overview

We are driven by the unmet needs of people living with serious neurological and neurodegenerative diseases, their families and caregivers as well as society. Our employees care deeply about what they are doing because they come to work every day knowing that hundreds of thousands of people worldwide depend on Biogen and our products to make a meaningful difference in their lives. As a pioneer in biotechnology, we have one overarching focus: developing novel medicines with the potential to improve the lives of people living with devastating neurological and neurodegenerative diseases.

As a pioneer in biotechnology, we have one overarching focus: developing novel medicines with the potential to improve the lives of people living with devastating neurological and neurodegenerative diseases. Our commitment to improving lives goes beyond scientific research and development. We prioritize engagement with patients and caregivers to understand their needs and identify how we can help them achieve better health outcomes.

We proactively engage with a variety of stakeholders as we work to achieve our goal of ensuring broad access to our treatments through clinical trials and expanded access programs (EAPs). We also recognize that prices for, and access to, treatments are chief concerns for patients, providers, payers and policy makers, and we work with all parties with the goal of ensuring patients are not denied access to life-changing therapies.

Ultimately, we measure our success by the impact we have on individuals living with these diseases as well as their families and caregivers, and the opportunity to change lives.

Our employees care deeply about what they are doing because they come to work every day knowing that hundreds of thousands of people worldwide depend on Biogen and our products to make a meaningful difference in their lives

Our Focus

RESEARCH & DEVELOPMENT AND PIPELINE

We believe that no other disease area holds as much need or as much promise for medical breakthroughs as neuroscience. Our focus on neuroscience, our deep scientific expertise and our courage to take risks make us leaders in the research and development of medicines with the aim of transforming neuroscience to benefit patients and society.

The field of neuroscience is vast, with many intersecting disciplines. Therefore our strategy is to focus on four core and four emerging growth areas.

Our core growth areas include:

- MS and neuroimmunology
- Alzheimer’s disease and dementia
- Movement disorders, including Parkinson’s disease
- Neuromuscular disorders

Our emerging growth areas include:

- Acute neurology
- Neurocognitive disorders
- Pain
- Ophthalmology

We have added or advanced 15 clinical programs across since the beginning of 2017. We are working to build a multi-franchise therapeutic portfolio and to create new sources of value by diversifying our pipeline in order to deliver new treatments and improve access to critical therapies. In 2018 we made progress in movement disorders such as Parkinson’s disease and in neuromuscular disorders such as ALS.

We announced positive interim results from our Phase 1 study of BIIB067 in amyotrophic lateral sclerosis (ALS) with superoxide dismutase 1 (SOD1) mutations, a genetic form of ALS representing approximately 2% of all ALS patients, developed in collaboration with Ionis Pharmaceuticals. The results demonstrated both proof-of-biology and proof-of-concept with a concordance across multiple clinical and biomarker endpoints.

In 2018 we maintained our market leadership in our core franchise of multiple sclerosis (MS) and made progress toward building a neuromuscular disease franchise with the expansion of SPINRAZA, the first approved treatment for spinal muscular atrophy (SMA), a rare neurological disease. By the end of 2018 SPINRAZA had been approved in over 40 countries and had received formal reimbursement in 30 countries.

We continued to build momentum by adding depth in our core growth areas (MS and neuroimmunology, AD and dementia, movement disorders and neuromuscular disorders) and by advancing our emerging growth areas (acute neurology, neurocognitive disorders and pain).

We continue to explore new opportunities and external innovation. In December 2018 we entered into an agreement with C4 Therapeutics to investigate the use of protein degraders for neurological diseases in our areas of interest. In January 2019 we entered into an agreement with Skyhawk Therapeutics, Inc. to leverage their SkySTAR technology platform with the goal of discovering innovative small molecules.

Read more about our approach to R&D through [Patient Focused Drug Development](#) and our [MIT Consortium](#) collaboration in our Spotlight Stories feature.

Learn more about our [scientific expertise](#) and [our pipeline](#).

ACCESS TO TREATMENTS

At Biogen, our goal is to improve the lives of patients by researching and developing new and innovative therapies. Before these therapies are commercially available to patients, they must go through clinical trials and be approved by a regulatory authority — such as the U.S. Food and Drug Administration (FDA) and the European Medicines Agency (EMA) — to treat a specific disease. Once our products are approved by regulatory authorities, we begin the complex task of ensuring patient access to our therapies through public and private health care programs.

We employ two complementary approaches to help accomplish this:

- Investigational Access through clinical trials, expanded access programs (EAPs) and single patient access or emergency use.
- Affordability Access by adhering to an access and pricing philosophy that helps secure reimbursement in public and private health care programs and offers financial assistance to patients who are otherwise unable to access our medications. We assess the value of our therapies in terms of clinical outcomes, improvements in daily living and quality of life, and whether the medicine meets a high unmet medical need and advances clinical practice.

Clinical Trials

Clinical trials are an essential part of the drug development process. They are designed to answer specific research questions related to the efficacy and safety of a potential therapy. Deciding to participate in a clinical trial requires careful consideration because, in most cases, the therapies being investigated in clinical trials are not yet approved by regulatory agencies. We are grateful to the patients, healthy volunteers, healthcare providers, hospitals and clinics that participate in testing our investigational therapies.

For some patients, participation in a clinical trial means access to a potentially life-improving medication when there may not be any other options. These experimental treatments are not available elsewhere and sometimes can be a last resort for patients who have tried many other therapies with limited or no success.

We added or advanced 11 clinical stage programs in 2018 and we had more than 140 active studies underway with approximately 32,000 patients enrolled on all studies active in 2018.¹

Learn more about our approach to [clinical trials](#).

Access to Investigational Therapies Outside of Clinical Trials

Our Expanded Access Programs (EAPs) bridge an important availability gap for therapies that have not yet become commercially available, providing access to treatment for patients with unmet medical needs while the regulatory approval process and reimbursement negotiations take place.

The complexity of the healthcare marketplace requires us to always be vigilant and committed to ensuring patients who need our therapies have access to them. For example, our EAP for spinal muscular atrophy (SMA) offers early access for infant and childhood SMA patients who would not otherwise be eligible for clinical trials, including supporting dozens of SMA patients in Poland until the Polish Ministry of Health recently approved reimbursement for SPINRAZA. Including clinical trials and our EAP, as of December 31, 2018, more than 6,600 patients have benefited from this remarkable therapy. In some situations, Biogen may be able to provide access to investigational therapies through what is essentially emergency use, also known as single patient access.

Approach to Pricing and Access

As pioneers in neuroscience, we need to continue adapting our thinking and approaches to pricing and access in an increasingly ambiguous and changing environment. Our intent is to describe a clear and transparent series of principles to guide our pricing and access actions for our breakthrough therapies.

Footnote:

1. Includes patients in all active studies between pre-Study Management Team (SMT) formation and Clinical Study Report (CSR) as defined by internal systems in 2018

When pricing our medicines, we consider the following key principles:

- value to patients
- present and future benefits to society
- fulfilling our commitment to innovation
- evolution towards value based health care
- affordability and sustainability.

We believe it is our shared responsibility with all healthcare stakeholders to find solutions to ensure patient affordability for new innovations. We partner with health care systems so that patients can continue to access our medicines in a sustainable way and we remain flexible to ensure that our medicines are affordable for patients across a wide range of economic circumstances. This includes recognizing that economic circumstances and ability to pay for medicines vary greatly across countries. We may pursue different approaches to make our drugs accessible depending on a country's economic situation, health care infrastructure and overall commitment.

For example, we are currently developing an SMA-focused individual patient humanitarian access program in lower-middle and lower income countries to bring medical education and treatment to SMA patients in need. With a planned launch in 2019, we plan to pilot the program in India first and hope to expand pilots to other countries in the future.

Learn more about our [access programs](#) and our [pricing principles](#).

PATIENT HEALTH OUTCOMES

Through ongoing dialogue, dedicated research and interactions with advocacy groups, we support patients and listen to and, if possible, work to help address their key concerns – from the safety and availability of our therapies to the costs of treatment, the overall patient experience and the long-term health outcomes. We help patients and their support networks navigate the emotional and logistical considerations that often accompany a chronic disease, and we provide important therapeutic information with the aim of enhancing their quality of life.

We believe it is ideal for patients to be backed by services that support them emotionally, financially and medically. By learning from and working with patient advocacy organizations, we are able to better understand the needs and challenges patients face as we work to improve access to treatments and services. These organizations provide a critically important voice, representing the interests of patients and families affected by diseases throughout the healthcare system. As part of this collaboration, we met with leaders of patient advocacy organizations in the U.S. and E.U. in 2018 to develop recommendations on how to support early, ongoing patient involvement in the drug development process with the goal of being able to deliver potentially high-value treatments to patients with unmet needs.

We also prioritize engagement with patients and caregivers to understand their needs and identify how we can help them achieve better health outcomes. For example, we successfully advocated for the addition of SMA to the Recommended Uniform Screening Panel for newborns in the U.S. in 2018, opening the door to newborn screening for SMA at the state level. We also launched [SMA Identified](#) – a new program in collaboration with genetics company Invitae Corporation to offer no-charge genetic testing to individuals suspected of having, or have been clinically diagnosed with, SMA. We have also been working closely with those affected by SMA through the disease education website [Together in SMA™](#). This program provides information about SMA and its symptoms, insight into care options and perspectives on a range of topics – such as nutrition and adaptive equipment – from experienced caregivers and healthcare professionals.

In addition to our [Above MS™](#) program, which offers tips, tools and inspiration for people living with multiple sclerosis (MS), we launched the [Aby mobile app](#) in the U.S. and [Cleo mobile app](#) in Europe in 2018 to provide access to tools and resources based on feedback from people living with MS and healthcare providers. In the United Kingdom, our [1MSg™](#) campaign encourages people with MS to work with medical specialists to educate themselves about their condition and how to best manage their treatment. Our [MS PATHS](#) program, an innovative collaboration with ten leading MS centers, uses technology to capture real-time, standardized data to help us better understand the disease.

Read more about our efforts to help patients through the [SMA Identified](#) program and the Aby & Cleo MS apps in our Spotlight Stories feature.

Learn more about our [Patient Advocacy Program](#).

2018 GOALS & PERFORMANCE

~35%

MS PATIENTS TREATED WITH OUR MEDICINES GLOBALLY IN 2018¹

1ST

APPROVED TREATMENT FOR SPINAL MUSCULAR ATROPHY (SMA)

>1M

MS PATIENTS TREATED WORLDWIDE¹

25+ years

CLINICAL EXPERIENCE

140+

ACTIVE STUDIES WITH TOTAL OF 32K PATIENTS ENROLLED ON ALL STUDIES ACTIVE IN 2018²

~20%

ANNUAL REVENUE INVESTED IN R&D OVER THE PAST DECADE

3

ANTI-TNF BIOSIMILARS OFFERED IN EUROPE

>90K

PATIENTS TREATED WITH OUR BIOSIMILARS IN 2018¹

5

PIPELINE CANDIDATES TRANSITIONED FROM RESEARCH TO DEVELOPMENT IN 2018

11

CLINICAL STAGE PROGRAMS ADDED OR ADVANCED IN 2018

Aby / Cleo App

LAUNCHED THE MOBILE APP 'ABY' IN THE U.S. AND 'CLEO' IN EUROPE IN 2018 FOR PEOPLE LIVING WITH MS

No-charge SMA genetic testing

LAUNCHED COLLABORATION WITH INVITAE TO OFFER NO-COST GENETIC TESTING FOR SMA

¹ Biogen data on file

² Includes patients in all active studies between pre-Study Management Team (SMT) formation and Clinical Study Report (CSR) as defined by internal systems in 2018



Biogen Collaborates with Invitae to Offer No-Charge Genetic Testing for SMA

As pioneers in spinal muscular atrophy (SMA) therapies, we are committed to working to make access to SMA treatment as widely and easily accessible as possible.

Important strides were made in 2018 when the United States (U.S.) Department of Health and Human Services (HHS) added SMA to the Recommended Uniform Screening Panel (RUSP) for newborns.

- SMA treatment, with or without newborn screening, requires a genetic test to confirm diagnosis and disease type
- Cost of genetic testing, even with insurance, is often a barrier to diagnosis and treatment
- Part of our commitment to widening access to critical treatments

Yet, while newborn screening can help identify the disease, not all states currently have it as part of the standard screening panel. Additionally, a genetic test is needed for those who are suspected of having SMA or who have clinical diagnosis but do not have genetic testing confirmation – without it, patients face greater challenges gaining access to treatment. This genetic test confirms diagnosis through identifying SMN1 gene deletion and SMN2 gene copy number. In the U.S. this confirmation of the disease helps to set insurance coverage in motion. Currently, prior authorizations for treatment by many U.S. insurance companies require confirmation of diagnosis via genetic testing. Some also require an SMN2 copy number.

To ensure patients receive this test as quickly and easily as possible, in April 2018 we announced [SMA Identified](#), a collaboration with genetic testing company Invitae. SMA Identified provides genetic testing at no cost to individuals suspected of having SMA, or who have been clinically diagnosed with, SMA.

Life with SMA is challenging enough without barriers to treatment, and we will continue to search for means to ensure those with SMA have the access and support they need

While genetic testing is typically required, insurers do not always fully cover the cost of the test resulting in high out-of-pocket costs for patients or their families. This can be cost prohibitive for some individuals and result in long delays or prevent access to potential treatment options.

Even once testing happens, some labs take up to 4-6 weeks to send results. This is precious time when every day without treatment — particularly for newborns — is critical. Even with the increased availability of newborn screening, a genetic test is the only way to confirm SMA copy number, and many older patients also rely on genetic testing to confirm a prior diagnosis.

SMA Identified was designed with the goal of bypassing these barriers and offering the widest possible access to this critical test. We believe the collaboration will help avoid delays, remove challenges related to costs and ensure access to comprehensive SMA genetic testing, which Invitae turns around quickly — currently between 10 and 21 days. In order to enhance the offering and address additional market needs, Biogen has further collaborated on two new tests provided at no charge: an SMA STAT Test, providing results within four days, and an SMA Carrier Screen, to assess the risk of SMA in families. It is important to note that, while Biogen funds the program, we receive no genetic information.

SMA Identified is currently offered in the U.S. and Puerto Rico with Biogen and Invitae hoping to expand the program to other countries. We believe *SMA Identified* means increased access to information, which in turn may mean faster access to treatment. Life with SMA is challenging enough without barriers to treatment, and we will continue to search for means to ensure those with SMA have the access and support they need.



Global ‘Digital Companion’ Apps Aby and Cleo Launched to Support People Living with MS

Biogen has pioneered the development of multiple sclerosis (MS) treatments for over two decades. Yet daily life with MS can still be deeply challenging. That’s why we’ve launched digital companions [Aby](#) (US and Canada) and [Cleo](#) (Europe) to support people living with MS.

MS patients, health care professionals and advocacy groups were requesting a way to get up-to-date, trustworthy MS information, extensive lifestyle support, an easy way to track symptoms and have general questions answered. And they wanted it quick and easy and all in one place.

A mobile app seemed the perfect solution. After extensive development and substantial testing – we collaborated with more than 100 MS patients in various countries – we pioneered Aby and Cleo, twin apps designed for MS lifestyle support.

- Support for anyone living with MS regardless of treatment plan
- Enables individuals to learn more about living with MS, track symptoms and get support with diet, exercise and lifestyle
- Designed using ideas from MS patients, healthcare professionals and advocacy groups

Aby and Cleo are available to anyone, regardless of their treatment plan, and with more than 120,000 downloads worldwide as of December 31, 2018, it's clear this is something MS patients want. More than 200 MS patients continue to be involved since the two apps launched and we hope to have the apps available in ten markets by the end of 2019. Health-related matters also require particular sensitivity when it comes to privacy and accordingly we've developed a comprehensive [privacy policy](#) specifically for these apps to safeguard those concerns. We do not sell any data collected by our software.

So, while our ongoing research may bring us closer to a cure for MS down the road, right now Aby and Cleo are here, with 24/7 support, for anyone living with MS.

The apps encompass the four significant features requested by patients:

1. An updated feed of the latest articles, videos and tips on living with MS – in their native language, and customized to their culture
2. A journal for tracking symptoms, moods and activities in real time. As MS patients tend to see their neurologists an average of twice a year, the tracker also collates downloadable reports, so doctors get a detailed understanding of what happened and when
3. Health and wellness programs, exercises and activities which can be personalized to three levels of intensity
4. And finally, a way to ask general questions about MS via text message conversation



Biogen Engages Patient Communities with the Aim of Enhancing the Early Drug Development Process

As part of our 40th anniversary celebration in 2018, we hosted advocacy roundtables in the U.S. and Europe to help us better understand ways we could increase and improve our engagement with patient communities with the aim of ensuring the patient perspective is captured across the drug discovery continuum.

For the past few decades, patient organizations have significantly shaped regulatory health authorities' expectations around the importance of the patient perspective in early research and development. Regulatory leaders at the U.S. Food and Drug Administration (FDA) and European Medicines Agency (EMA) are actively engaged in externally led patient-focused drug development meetings, making the patient perspective a strategic priority and a critical part of the drug approval process.

We also recognize that the patient perspective is a key driver in our future success – which we believe will enhance our ability to develop and deliver potentially high-value treatments to patients with unmet needs.

- Recognizes patient involvement as essential to changing R&D culture and practice
- Helps embed patient and advocate perspective in R&D, which we hope will enhance our ability to develop and deliver potentially high-value treatments
- Part of our commitment to be a leader in engaging patient communities

Through our dialogue with patient advocacy organizations at these roundtables, we were able to gather feedback and insights to help us co-create ideas for further embedding the patient-perspective in the drug development process.

“To me, the story of spinal muscular atrophy is the combination of amazing science and technology combined with a cohesive, collaborative community prepared to take advantage of that science,” said roundtable participant Kenneth Hobby of CureSMA. “Biogen coming in very early, talking about its plans, being open and honest with the community and helping prepare us for what was coming is very important. You established yourselves as true partners.”

Roundtable participants believe we have an opportunity to take a leadership position engaging patients as partners due to our nimble size, competitive nature and focus on neurological and neurodegenerative diseases.

“The relationship needs to be seen as an equal partnership, recognizing that you need them as much as they need you. You get the drugs approved that can then help improve patients’ lives,” concurred Alison Evans with Alzheimer’s Research UK.

We have already made efforts to turn these lively and insightful discussions into concrete actions. One critical way is to prioritize top-down commitment to early, ongoing patient involvement as essential to changing culture and practice within the organization. These include consistently and systematically engaging and integrating patient perspectives across each therapeutic area and within clinical programs. It also includes utilizing existing frameworks, tools and resources to help speed adoption and process change.

“We recognize we need to be bigger risk-takers in transforming our internal community at Biogen to be more responsive externally, to keep the dialogue moving forward, to show up differently, to be consistent and transparent and to make a real difference,” stated Jessica Riviere, Senior Director for Global Patient Advocacy.

By engaging and communicating early and often, we hope to continue the momentum of these roundtables to help us be more strategic about the way we work with advocacy organizations to understand the perspectives of patients at all stages of drug development.



Collaborating with MIT Consortium with the Goal of Finding Faster, More Efficient Processes

At Biogen we have some of the finest scientific minds working to solve some of the world's most intractable medical problems. Other biotech companies also represent incredible scientific expertise, as do the laboratories at the world's great universities. Because great minds do not always think alike, collaboration can help lead to solutions for incredibly complex, time consuming and expensive processes. By using an open-source model to create a common knowledge base, we may be able to better serve patients with potentially high-value treatments more quickly and affordably.

- MIT Consortium for the Open Advancement of Alternative Hosts is a new collaboration with the Love Lab at MIT with the goal of building faster, more efficient processes for biologics
- Open-source model creates common base of knowledge with the potential for better recombinant protein therapies
- Collaboration aims to result in faster, less expensive methods to develop potential new therapies

Such is the impetus for the Research Consortium for the Open Advancement of Alternative Hosts, a two-year collaboration among the Love Lab at the Massachusetts Institute of Technology (MIT), Biogen and other biotech companies.

The goal of the consortium is to discover new manufacturing processes capable of achieving higher productivity and lower costs while facilitating rapid process development cycles. To date, many promising alternative hosts for manufacturing and related knowledge have been largely held in private by small numbers of companies.

The consortium, on the other hand, will be working on an open-source basis, with low-cost access to resulting intellectual property. Specifically, the project intends to bioengineer certain yeasts and other microorganisms into ‘alternative hosts’ – living ‘chassis’ with the potential to hold materials from other organisms for a variety of manufacturing purposes. The primary goal of this two-year exploratory project is to engineer and develop alternative hosts for the production of recombinant proteins. We believe this could enable manufacturing at significantly lower cost than is currently possible.

What this means to the non-scientist, and especially to the patient, is the potential for improved access: potentially faster development of new drugs, a potentially more nimble and scalable manufacturing process and potentially far lower costs to patients and health care systems.

We are proud to be working with the Love Lab at MIT and our industry peers with the goal of finding faster, more scalable and less costly production and manufacturing methods. We believe this work will, in the long run, make life better for patients.

The goal of the consortium is to discover new manufacturing processes capable of achieving higher productivity and lower costs while facilitating rapid process development cycles



Employees



Overview

Biogen attracts some of the world’s leading scientific minds – individuals who are passionate about improving health outcomes for people around the world, supporting local communities, encouraging the next generation of scientists and making a global impact.

We empower these passionate individuals to build rewarding careers and we foster a culture of learning that pushes them to take initiative and seek growth opportunities. We are especially proud of our efforts to promote a diverse and inclusive workplace and to advance underrepresented talent in the organization. These are a few of the reasons why the employee engagement category results from our 2019 People Survey, which covers 2018, is aligned with global benchmarks.

Caring Deeply. Working Fearlessly. Changing Lives.™ is our philosophy. It guides our actions as an organization and as individuals.

Our Focus

WORKPLACE COMMUNITY & TALENT

In early 2018 we launched the [Biogen Elements](#), which define who we are, how we work and what we strive to be: Customer Focused, Inclusive, Pioneering, Agile, Accountable and Ethical. The Biogen Elements give shape to our company’s culture and promote a unified approach to our individual jobs – strengthening our mission, informing our leadership, expanding our impact and fueling our growth.

Our success depends on our ability to attract, develop and retain exceptional talent – people who embrace our mission to be pioneers in neuroscience. To produce cutting-edge therapies, we must encourage innovative thinking and agility, promote diversity and inclusion and foster a culture that protects the wellness and safety of our people.

This shows in the results of our most recent People Survey. Seventy-five percent of employees said they would recommend Biogen as a great place to work, which scored three percentage points above the global benchmark of 72 percent. Similarly, 86 percent of employees said they understand how their work contributes to Biogen’s success, which scored five points above the global benchmark of 81 percent. These results indicate a clear connection to how our employees feel about their work and our mission as an organization.

Our employees are not only passionate about how their work at Biogen may help improve lives, they are also engaged across a broad range of activities to improve our company’s work and role in the community, such as our Care Deeply Day, a volunteer day of service. Many Biogen employees at our manufacturing sites also participate in Communities of Practice (CoP), employee-led groups engaged in activities around a common interest. One such group is ourIMPACT, a CoP focused on furthering our environmental sustainability initiatives at Biogen.

This group tackles issues such as reducing waste in the workplace through reuse programs, improving energy use in laboratories and bringing healthier and more climate-friendly meals into Biogen’s cafeterias.

Other examples of programs that show how we support and internally recognize behaviors that are linked to our culture are the Biogen CEO Elements Awards that celebrate and reward teams and individuals that have made significant contributions and accomplishments to Biogen’s strategy – and our annual Environmental, Health & Safety (EHS) Awards that recognize employee efforts in four areas: safety, health & wellness, sustainability and resiliency.

We are honored to be recognized as a company of choice for employees. In 2018 Biogen was ranked #51 on the Forbes list of the World’s Best Employers and one of the Best Employers for Women at #38. On the Forbes’ 2018 list of America’s ‘Most JUST Companies’, we were #19 overall and #1 among 41 pharmaceutical and biotech companies.

Read more about the [Biogen Elements](#) in our Spotlight Stories feature.

Learn more about our workplace community and talent philosophy at [Working at Biogen](#).

DIVERSITY & INCLUSION

Biogen is committed to bringing in a rich mix of talent into our organization, of all backgrounds and experiences, and assure that our employees reflect the communities we serve. We believe that having a diverse and inclusive workplace empowers our workforce, fosters innovation and helps us achieve better business results. It leads to better teamwork and collaboration, creates a climate of respect and trust, reinforces cultural competence and helps to drive success with our patients, providers and suppliers.

Our approach to Diversity & Inclusion (D&I) relies on partnerships across the company, including our Diversity & Inclusion Strategic Council (DISC) – a governing body of employees that helps set overall D&I strategy and goals. DISC recently helped shape our new, multi-year D&I strategic focus where we hope to further strengthen our longstanding commitment to D&I by building inclusive talent systems fully aligned with the Inclusive Biogen Element, creating a culture of ownership and accountability where “Everyone Owns D&I” and driving health equity for underserved populations in the disease areas we treat.

Diversity is also essential in our business and is one of the keys to understanding the complex and varied needs of the patient communities who use our medicines. For example, nearly two-thirds of patients in two of our disease focus areas – MS and Alzheimer’s disease – are women. And the majority of caregivers are also women.

As a company, we must understand how to meet the needs of a patient community that is largely women, which is one reason why we focus on women in leadership roles. We also believe that working towards gender parity at all levels is critical to innovation. One way we support this is through our Women’s Leadership Program, a partnership with Babson College that cultivates high potential entrepreneurial women leaders. In 2018 women comprised half of our global employee population and held 44 percent of Biogen’s director-level and above positions.

In 2018 women comprised half of our global employee population and held 44 percent of Biogen’s director-level and above positions. In addition, 22 percent of Biogen’s U.S. management (director-level and above) were ethnic or racial minorities in 2018. High potential mid-career underrepresented minorities participate in The Partnership, Inc.’s BioDiversity Fellows Program, supporting our efforts to build our talent pipeline with a rich and diverse mix of leaders.

Additionally, Biogen remains committed to taking actions to ensure all employees feel supported in the workplace. We scored 100% on the 2018 Disability Equality Index (DEI), putting us among America’s best places to work for disability inclusion. For five consecutive years, we’ve been recognized as a ‘Best Place to Work’ for LGBTQ Equality in the U.S. by the Human Rights Campaign, scoring 100% on the 2018 Corporate Equity Index. Biogen was also recognized in 2018 by Forbes Magazine for our leadership in diversity & inclusion.

Employee Resource Networks

Our Employee Resource Networks (ERNs) are internal groups for employees of shared characteristics, life experiences and interests.

These networks provide opportunities to share knowledge, find mentors and receive support, all of which can be invaluable for career development. Allies, supporters and all those interested in helping to advance inclusion are welcome to join any ERN. Close to 30 percent of our global workforce is a member of one or more ERN.

Our current networks include:

- **AccessAbility** – Highlights our commitment to employees with disabilities and employees who are caretakers of individuals with disabilities
- **Biogen Veterans Network (BVN)** – Provides opportunities for veterans and allies of veterans to connect
- **Mosaic** – Focuses on fostering awareness and appreciation of different cultural backgrounds while promoting networking and development opportunities for members
- **ReachOUT** – Embraces LGBTQ employees and their allies by supporting a best-in-class working environment for LGBTQ employees
- **Women’s Innovation Network (WIN)** – Creates networking, mentoring and learning opportunities for women and allies worldwide

WORKPLACE HEALTH & SAFETY

Everyone at Biogen has a role to play in creating and maintaining a safe and healthy workplace. We work hard to reduce risk and prevent injuries and other types of workplace health and safety incidents. Our employees are accountable for working safely, whether they spend most of their days in a lab, in a manufacturing plant, at a desk or in a car. We engage our employees to help us ensure our policies and practices support their and their colleagues’ well-being in addition to protecting surrounding communities.

In 2018 we made significant progress integrating Human Performance (Hu) into our EHS programs. Hu incorporates a ‘new view’ on safety, recognizing that workers are a part of the solution. Through practices such as Open Reporting and Work Observation and Risk Conversation (WORCs), employees collaboratively engage in proactive problem solving to enhance safety performance and manage risk. We believe our approach to Human Performance is changing the performance paradigm in our industry and beyond.

Because health and safety are important, we consistently track our performance to monitor our progress and, in 2018, implemented new leading indicators towards measuring safety as a capacity rather than a result. These indicators include evaluating proactive versus reactive activity trends, monitoring high risk training completion and tracking the age and completion of actions tied to higher risk events. We continue to track the frequency of work-related illnesses and injuries that lead to an absence from work through the Days Away Case Rate (DACR). In 2018 our Days Away Case Rate (DACR) and our Total Injury and Illness Rate were both below the industry average.

Read more about our approach to [Human Performance](#) in our Spotlight Stories feature.

2018 GOALS & PERFORMANCE

75%

EMPLOYEES SAID THEY WOULD RECOMMEND BIOGEN AS A GREAT PLACE TO WORK IN OUR 2019 PEOPLE SURVEY (COVERING 2018)

86%

EMPLOYEES SAID THEY UNDERSTAND HOW THEIR WORK CONTRIBUTES TO BIOGEN'S SUCCESS IN OUR 2019 PEOPLE SURVEY (COVERING 2018)

44%

DIRECTOR-LEVEL POSITIONS AND ABOVE WERE HELD BY WOMEN IN 2018

5

CONSECUTIVE YEARS 'BEST PLACE TO WORK' FOR LGBTQ EQUALITY IN THE U.S.

22%

BIOGEN'S U.S. MANAGEMENT (DIRECTOR-LEVEL AND ABOVE) WERE ETHNIC OR RACIAL MINORITIES IN 2018

100%

SCORE ON 2018 DISABILITY EQUALITY INDEX® - A JOINT INITIATIVE OF AAPD AND DISABILITY:IN

51%

WOMEN IN THE WORKFORCE GLOBALLY

#1

BIOPHARMA COMPANY ON FORBES' AMERICA'S 'MOST JUST COMPANIES' IN 2018 LIST (#19 OVERALL)





freedom
for all
MASSACHUSETTS



THIS BUSINESS SAYS **YES** TO DIGNITY & RESPECT

for our

TRANSGENDER NEIGHBORS IN MASSACHUSETTS!

We Came Together to Take a Stand for Transgender Equality and Helped ‘Yes on 3’ Win in Massachusetts

In 2016 Biogen joined a broad coalition of citizens, interest groups and businesses promoting a Massachusetts bill to protect transgender people from discrimination in public accommodations, including restaurants, retail stores and health care facilities.

- Biogen worked with the biotech community to get behind the Yes on 3 campaign
- Yes on 3 Campaign highlighted the clear business case for inclusion

Soon after successful passage, a petition began to repeal the law via a ballot initiative, called Question 3. A ‘no’ vote would repeal the law while voting ‘yes’ would preserve it. Therefore, the campaign to protect transgender rights in Massachusetts became known as ‘Yes on 3.’

We believe [diversity and inclusion](#) are essential to our business and it was important for us to take a stand. After getting involved with the initiative, ReachOUT, our Employee Resource Network (ERN) for LGBTQ employees and allies, engaged our employees in several initiatives. In collaboration with other ERNs, the group sponsored voter registration drives across the United States and hosted a lunch-and-learn that aimed to educate employees on what it means to be an ally for the transgender community.

Additionally, CEO Michel Vounatsos signed a letter to other Massachusetts' biotech companies, asking them to join us in conversation to discuss the case for keeping the law in place and to raise awareness of the 'Yes on 3' campaign.

“There is a business case to retaining and recruiting talent,” noted the ‘Yes on 3’ coalition director, Krina Patel, who herself joined Biogen as Northeast Region Associate Director for State Public Policy and Government Affairs once the campaign ended – successfully – with the nondiscrimination measure still in place.

“The number one reason I picked Biogen is because of how active they were on this issue,” she added. “They cared before it became a big deal.”



Human Performance’s Proactive Approach Produces Improved Safety and Quality Results

We believe focusing on human interaction with processes and systems, rather than on human error, can be a key driver to understanding and improving overall performance. To embrace this new way of thinking, we have instituted Hu, or Human Performance, a new, integrated risk management approach to workplace safety and quality.

- Human Performance (Hu) fosters collaboration at all levels, helping to resolve issues before and after the fact
- New leading indicators with Hu measure safety as a capacity rather than a result

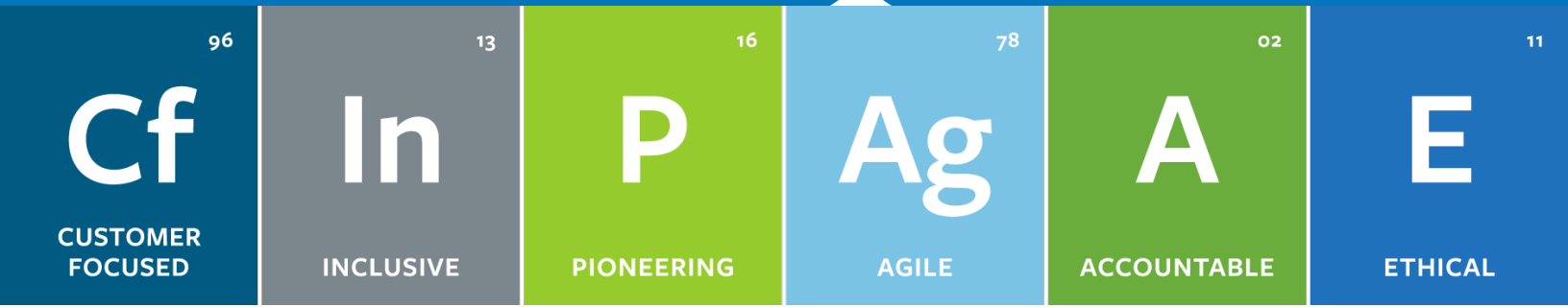
Standard practice employs a reactive approach to unwanted events while the Hu model understands that fallibility is part of the human condition. With Hu, we observe activities through a process called WORC: Work Observation and Risk Conversation, a system that fosters collaboration at all levels for resolving issues before and after the fact.

WORC is more than just a catchy acronym, it is constantly in use. In 2018 we conducted more than 1,600 work observations and our open reporting practices led to 1,409 implemented solutions. We also conducted approximately 2,700 post-job reviews, or after-task discussions, to support learning and improvement about what went wrong – as well as what went right. Hu also calls for pre-job briefings, where relevant personnel examine questions on equipment, potential mitigation strategies and all other aspects of the job at hand.

“Through Hu, we’ve addressed thousands of risk areas in our business,” said Amy Wilson, Director of Global Human Performance. “These proactive efforts are far outpacing our reactive efforts at a rate of 4:1 on the safety side and 3:1 on the quality side.”

Hu has also altered the metrics we focus on. While Days Away Case Rate (DACR) is still important, this new approach to safety recognizes that dealing with high-risk activities is different from lower-risk work. We are now more focused on making sure everyone is up-to-date on highest-risk training and tracking the age and completion of actions tied to higher-risk events. The goal of Hu is to continue to create an even safer workplace.

Our adoption of Hu has positioned us as a catalyst in the safety and quality space. We’ve been asked, and have gladly shared, our approach with other companies who hope to replicate our positive results.



The Six Biogen ‘Elements’ Permeate our Culture and Drive our Mission as Pioneers in Neuroscience

Beginning with a small Geneva meeting between our five founders – Charles Weissman, Heinz Schaller, Kenneth Murray and Nobel Prize winners Walter Gilbert and Phillip Sharp – in 1978, Biogen has grown into a vast organization working in many countries around the world. So how, we wondered recently, do we permeate all we do with our philosophy of Caring Deeply. Working Fearlessly. Changing Lives.™ even as we continue to change and grow?

- Our Elements: Customer Focused, Inclusive, Pioneering, Agile, Accountable, Ethical
- These six Elements inform our leadership, expand our impact and fuel our growth
- Performance management, leadership development and recognition are now aligned behind the Biogen Elements

Our answer is the Biogen Elements, six core ideals that give form and shape to our culture that were first launched in 2018. As the elements of the periodic table are the building blocks of nature, these six Elements are woven into the fabric of our every action.

The first Biogen Element, ‘Cf’ represents our strong customer focus while ‘In’ is emblematic of our commitment to inclusion. ‘P’ signifies our mission as pioneers in neuroscience. ‘Ag’ embodies agility and adaptability in a world of change and innovation while ‘A’ symbolizes accountability for our results and the impact we have. Finally, ‘E’ epitomizes our adherence to the highest of ethical standards.

Practically speaking, the Biogen Elements reflect how we work and are now embedded directly in our workflows and into our employee lifecycle, beginning with recruitment and continuing through performance management. Our Inclusive (In) Element, for example, informs our strategy of hiring a diverse workforce. We even celebrate and recognize one another’s contributions through the ‘Elements’ lens – from our BIG Awards (our peer-to-peer acknowledgements) to our CEO Elements awards, all of which are aligned with the six Biogen Elements.

Our Supply Chain Resiliency Team, for example, won a Biogen Elements award in 2018 for ensuring continuity of critical supplies despite serious supplier issues during a hurricane. They were selected for embodying the Customer Focused (Cf), Pioneering (P), Agile (Ag) and Accountable (A) Elements.

With the Biogen Elements as our bedrock, informing our leadership, expanding our impact and fueling our growth, we believe we are even better equipped to fulfill our mission as pioneers in neuroscience.

Environment



We are a science-based company and employ science in our approach to resource use and in our day-to-day business operations. Our goal is to mitigate any negative impacts and, where feasible, create positive ones – for example, by becoming a carbon neutral company and embracing green chemistry. We also aim to be a catalyst for positive change by encouraging other companies we do business with to adopt responsible environmental policies leading to improved environmental and business performance.

From a human perspective, the dedication and passion our employees bring to our mission of improving patient lives is the same, whether they are developing and manufacturing our therapies or reducing our impact on the environment we share with patients, employees and the greater community.

Our Focus

CLIMATE

Biogen is committed to utilizing a science-based approach when it comes to managing environmental resources, demonstrated by our [Science Based Targets Initiative](#)-approved 2030 absolute greenhouse gas (GHG) reduction target of 35 percent. Our practice of using science to inform our targets when possible is part of our broader commitment to context-based sustainability, an approach based on balancing resource use with the needs of our community and the planet.

To address climate change, Biogen believes businesses must take action to address the GHG emissions from their own operations – and they must also help reduce emissions from their suppliers. For Biogen, this is demonstrated by:

- Emitting zero net carbon emissions from our own operations since 2014. To achieve this, Biogen has matched 100 percent of its electricity use with electricity produced from renewable sources, such as wind and solar, around the world as well as financially supporting carbon offset projects, primarily in the communities in which it operates.
- Reducing fossil fuel and electricity usage within our operations through incremental and step-wise improvements in manufacturing, investing in more efficient and healthier buildings (we have two LEED Platinum and two LEED Gold buildings) and ensuring our existing facilities operate at peak performance. This continuous improvement approach has generated a 76 percent reduction in our operational carbon intensity since 2006. Take a look at our [spotlight stories](#) to see our climate champions in action.
- Engaging with our ten highest climate-impacting supply chain partners to advocate for direct climate reductions in the products and services Biogen purchases. This year we partnered with Duke University to conduct a study on meeting our science-based targets through supplier reductions, and this study will help inform our strategy moving forward.

We will continue searching for innovative ways to further reduce our own emissions and those of our suppliers, while decreasing our need for carbon offsets.

Learn more about our approach to [environmental sustainability](#) and our [climate change position](#).

WATER

With water security in mind, we strategically situate our manufacturing sites in water rich areas and, as a result, water scarcity is not a significant risk to our business. However, water remains a precious commodity as well as a business cost, and we continuously look for ways to reduce water use – such as by making our processes and equipment more efficient and by reusing water. Additionally, we are committed to ensuring our wastewater treatment practices consistently meet quality and safety regulations and standards.

To understand the impact of our water use on the communities surrounding our facilities, we have committed to utilizing a context-based water approach for our major facilities. This makes it possible to assess water withdrawal relative to the local watershed’s sustainable water supply. Assessment of two of our major facilities using the Corporate Water Gauge tool developed by the [Center for Sustainable Organizations \(CSO\)](#) is complete, and water withdrawals were determined to be within what the CSO calls “[fair, just and proportional share](#)” of the local watersheds’ sustainable water supply.

Our goal is to assess water use at the remaining major facilities in 2019 using this same approach. In the event that any facility’s water withdrawal exceeds our fair, just and proportional share of the local water resources, a secondary target has been established to bring water withdrawals below that threshold by 2030. Simultaneously, we maintain an internally used water intensity metric¹ to drive and communicate operational efficiency.

Footnote:

1. Metric: cubic yards used per million dollars USD of revenue

GREEN CHEMISTRY

At Biogen, we embrace green chemistry as an opportunity to make our drug discovery and development processes safer, more efficient and better for the environment – while also reducing costs.

Our green chemistry program helps drive process innovations that both improve product performance and also deliver environmental benefits. As part of our efforts, we use green chemistry concepts and tools, such as those developed by the [ACS GCI Pharmaceutical Roundtable](#), to increase our chemical process efficiency, reduce our waste and optimize materials used.

For example, we’ve adopted a ‘green-by-design’ approach to drug substance manufacturing for two of our early phase pipeline projects to treat multiple sclerosis and neuropathic pain, respectively.

This approach reduced waste upwards of 70 percent, based on process mass intensity (PMI) measurements. By designing for sustainability early in the development process, we are not only reducing waste and saving on resources, we are also reducing our development time and increasing the opportunity to bring critical drugs to patients sooner.

Externally, we are working to effect change throughout our industry. We are involved in the green chemistry working group of the International Consortium of Innovation & Quality in Pharmaceutical Development ([IQ Consortium](#)), with a focus on the development of green chemistry metrics. We are also actively engaged in two working groups of the ACS GCI Pharmaceutical Roundtable – one working group on influencing the research agenda and one on flow chemistry.

Read more about our [Green Chemistry](#) initiatives to support our climate strategy in our Spotlight Stories feature.

2018 Goals & Performance

Goals & Commitments

As Biogen grows, we remain committed to reducing our environmental footprint by maintaining our carbon neutral status and by minimizing resources used to manufacture our therapies.

- Maintain Carbon Neutrality across our own operations (as we have since 2014)
- Continue to match 100 percent of our electricity use with electricity produced from renewable sources, which has been our public commitment to the RE100 initiative since 2014
- Reduce by 35 percent our absolute GHG footprint – across Scopes 1, 2 and 3 – by 2030 (compared to our 2013 footprint)
- Assess our water use and keep use within our determined fair share (what the Center for Sustainable Organizations calls our “[fair, just and proportional share](#)” of local water resources)
- Maintain Zero Waste to Landfill status for our manufacturing facilities
- Continue to leverage our 2020 intensity-based metrics for internal operational excellence and benchmarking
- Engage with our highest climate impacting suppliers to lower GHG emissions in our supply chain

2018 GOALS & PERFORMANCE

Carbon Neutral

COMPANY SINCE 2014

100%

RENEWABLE POWER COMMITMENT

1,000,000+

METRIC TONS WORTH OF CARBON OFFSETS RETIRED SINCE 2014

1.2 GWh+

RENEWABLE ELECTRICITY PURCHASED SINCE 2014

76%

REDUCTION IN OPERATIONAL CARBON INTENSITY SINCE 2006¹

Zero Waste to Landfill

STATUS MAINTAINED

95%

TOWARDS REACHING OUR GOAL OF REDUCING CARBON INTENSITY BY 80% BEFORE THE END OF 2020¹

53%

RECOVERY AND RECYCLING RATE (REUSE, RECYCLE, COMPOST, NON-COMBUSTION ENERGY RECOVERY)

64%

REDUCTION IN POTABLE WATER INTENSITY¹

10

SUPPLIERS ENGAGED TO LOWER GHG EMISSIONS IN OUR SUPPLY CHAIN REPRESENTING 31% OF OUR SUPPLY CHAIN TOTAL GHG EMISSIONS

80%

TOWARDS REACHING OUR GOAL OF REDUCING POTABLE WATER INTENSITY BY 80% BEFORE THE END OF 2020¹

32%

ABSOLUTE INCREASE IN VALUE CHAIN CARBON EMISSIONS². SEE GRI DATA TABLE FOOTNOTES 4 AND 5 FOR MORE DETAIL

¹ Based on 2006 baseline, MTCO₂e or cubic meters / million \$ revenue. Please note Biogen is using science and context-based goals but will continue to leverage intensity-based metrics for internal operational excellence and benchmarking

² Based on 2013 baseline



Natural Moss Replaces 80% of Chemicals in RTP Cooling Towers

Seventy-five hundred pounds of chemicals and millions of gallons of water annually. That’s what it took to keep the cooling towers at our Research Triangle Park (RTP) facilities clear of scale (mineral buildup), corrosion and bacteria.

Many manufacturing facilities use water for cooling and that water, in turn, must be cooled for reuse or disposal.

- Moss cleans towers and removes scale and corrosion, projected to save nearly 1.5 million gallons of water annually
- Projected to reduce chemical use by approximately 6,000 pounds
- Opportunity to scale results at other Biogen facilities

RTP has six towers in all, in which water is pumped to the top for cooling. Some evaporates, leaving problematic mineral concentrates behind. The rest cools as it trickles through vertical matrices, collecting impurities from the air during its descent through the open structures.

We were intrigued when a vendor introduced us to a new, and far more environmentally sustainable, solution: natural sphagnum moss, now available for commercial use. The moss naturally cleans water, removes scale and corrosion and allows significant reductions in water and chemical use.

RTP’s Maintenance Utilities team saw the moss’s potential and launched a pilot in the plant’s smaller towers in 2018.

The pilot's results were impressive, and the larger towers were then switched to the moss. Since that switch, we project chemical reductions of approximately 80 percent – about 6,000 pounds – and savings of almost 1.5 million gallons of water annually.

This new approach helps support our commitment to ensure that water use at our major facilities is within our “fair, just and proportionate” share of locally available renewable supply.

“It's pretty cool,” said Curt Lucero, Manager, Maintenance at RTP. “You take these drums of chemicals that you used to need and you just put them to the side. But the big savings is, we use less water. Down here in North Carolina this is especially helpful in mid-summer if we go into a drought. The clear message is, this works.”

Others in the company agree, as demonstrated when the Maintenance Utilities team received a Biogen EHS Award for Sustainability for this promising and environmentally meaningful project.

We are evaluating the results and data of this pilot project and, based on those results and data, may roll out this technique to our other manufacturing facilities.



From Theory to Practice: Our Ongoing Commitment to Green Chemistry

“If you’re not part of the solution, you’re part of the precipitate,” begins the slogan of the new green chemistry branch of ourIMPACT, an employee-led group focused on furthering environmental sustainability initiatives at Biogen.

Chemical humor aside, in recent years we’ve shown that green chemistry can improve our processes, reduce costs and lower resource needs, resulting in positive environmental benefits.

- ‘Green-by-design’ approach to two early phase pipeline projects may result in up to 70% waste reduction
- Employee-led Community of Practice develops roadmap to help us better implement the principles of green chemistry both inside and outside the lab

Green chemistry underscores our mission in the Pharma Development organization to develop therapeutic products designed for both patients and the environment.

Most recently, we’ve adopted a ‘green-by-design’ approach for two of our early phase pipeline projects. By focusing on ways to reduce the material needed to produce the active pharmaceutical ingredient (API) for two investigational therapies, one to potentially treat multiple sclerosis and one to potentially treat neuropathic pain, we were able to lower the process mass intensity (PMI) measure for both by upwards of 70 percent. PMI measures how environmentally sustainable a process is.

By reducing the amount of solvent (both organic and water), reagents and catalysts used, we were able to eliminate some process steps and increase our chemical process efficiency. This led to both improved yields for the API as well as a reduction in our environmental impact. By designing for sustainability early in the drug development process, we are not only reducing waste and saving on resources, but we may also be able to reduce our drug development time.

In recent years we've shown that green chemistry can improve our processes, reduce costs and lower resource needs, resulting in positive environmental benefits

We will continue to leverage green chemistry tools to support our drug development efforts. This includes using tools from the [ACS GCI Pharmaceutical Round Table](#) with the aim of improving our metrics and moving towards employing lifecycle assessments to better measure our outcomes.

Building on this momentum inside the lab, ourIMPACT recently developed a green chemistry roadmap to help us better implement the principles of green chemistry beyond the lab to ensure that no employee is "part of the precipitate."



RTP Adapts Cell Culture Filters, Reduces Plastic Waste

It all started with a workshop and a humble yellow Post-it® Note. In early 2018, at the *Biogen Forward* ideas session, Michael Perkins, Manager of Large-Scale Manufacturing Technical Operations at Biogen’s RTP facility in North Carolina, wrote “filter optimization” on his sticky yellow square.

- Evolution in culture media enables a projected reduction of 1,400+ plastic filters used in biologics manufacturing
- Projected \$1.2 million and more than one ton of plastic in annual savings

RTP grows cells for cell culture processes, and the media that feed them is blended in-house. In the years since RTP began operations, however, there has been an evolution in the type of media used for newer products. Perkins, who once was a Process Engineer for the filter transfer stations, believed the newer media might allow a reduction in the number of heavy plastic filters required.

Studies of product flow followed, along with the creation of a model to calculate an optimal number of filters required for the new media based on expected flow rate. The results were clear: RTP’s plant filter use could be significantly reduced.

“I knew there was an opportunity to go back and save,” Perkins said. “What shocked me was just how big an opportunity there was. I didn’t realize, annually, just how many of these we use.” In fact, Perkins’ team projected that RTP could potentially eliminate 1,420 filters yearly for an annual savings of \$1.2 million. Additionally, this program could also potentially prevent 2,600 pounds of plastic from entering the waste stream.

These results have had a ripple effect throughout Biogen and we plan to scale our other facilities that use similar cultures. Apparently that humble Post-it® Note was not so humble after all.

Community



The foundation of Biogen’s philosophy – Caring Deeply – can be seen in the ways we engage with the communities where we work.

At Biogen, we are dedicated to inspiring the next generation of scientists through our support of youth and science, technology, engineering, and mathematics (STEM) education and to being agents of positive change with lasting impact by building stronger and healthier communities.

We aspire to be a positive presence wherever we operate, demonstrated by our employee volunteerism efforts, such as Care Deeply Day, the grants we make through the Biogen Foundation and our unique, hands-on Community Labs, which have provided more than 50,000 students a hands-on introduction to the wonders of science since 2002.

Our Focus

COMMUNITY ENGAGEMENT

Our commitment to making a positive impact in the world includes locations that are close to home: the communities in which we operate. This commitment is enshrined in our annual global day of volunteer service – Care Deeply Day. Since 2011 we have set aside this day to enable all employees to reach out and make an impact on their local communities. Service projects have included serving meals to the homeless, providing support at and senior centers, fixing up youth centers, participating in park clean-ups, tending community gardens and assisting at local food banks. At our 2018 Care Deeply Day, more than 3,200 employees in 28 countries supported over 60 volunteer projects.

In recognition of our efforts in the community, we received the 2018 “Breakthroughs in the Community” Award from Breakthrough Greater Boston – one of our STAR Initiative recipients – for inspiring excitement for learning, creating paths to college and promoting careers in education. Additionally, Biogen’s Research Triangle Park (RTP) facility was recognized with two community awards in 2018: the Triangle Business Journal’s Corporate Philanthropy Award for our corporate partnership with the Museum of Life & Science in Durham, North Carolina, and the 2018 STEMmy Award for STEM Industry Partner of the Year from STEM in the Park. The latter celebrates our ongoing commitment to investing in the future of the next generation of scientists and our efforts to make STEM education and careers accessible to diverse populations.

Read more about our collaboration with [Food for Free](#) in our Spotlight Stories feature.

Learn more about our [Community Engagement](#) efforts.

BIOGEN FOUNDATION

The Biogen Foundation supports access to science education and to essential human services for children and their families in the communities in which we work and live. The Biogen Foundation is deeply committed to sparking a passion for science and discovery, supporting effective science education initiatives and strengthening efforts to make science education and science careers accessible to diverse populations. Most of all, we want young people to know that through science they have the ability to change the world.

The Biogen Foundation’s grant-making programs focus on two core areas: science education and strengthening our communities. As a result, the Biogen Foundation is committed to supporting nonprofit organizations that focus on four areas: providing access to hands-on science education, teacher development in science, college readiness and support and basic social needs (child hunger, poverty and social mobility). The Biogen Foundation has both a U.S. Grants Program and international Grants Program and, in 2018, gave \$4.85 million in community grants to a range of nonprofit organizations.

We deepened our commitment to science education in 2018 with two new innovative programs – the \$10 million-funded [STAR Initiative](#) and the SPARK Video Contest. Committing \$10 million over four years, the STAR Initiative is a coordinated funding strategy designed to help catalyze the development of local STEM ecosystems in Cambridge and Somerville, Massachusetts. STAR – which stands for Science, Teacher support, Access and Readiness – is intended to strengthen and support the educational landscapes in these cities by helping increase access to STEM resources and opportunities for middle and high school students most underrepresented in STEM college or career pathways.

The Biogen Foundation’s [SPARK Video Contest](#) is an annual program open to Massachusetts and North Carolina middle and high school students. The contest encourages students to create fun and creative educational videos on the role of biotechnology in their lives. With a focus on genetic mutations, 86 videos were submitted from 60 eligible schools in 2018. Twenty finalist videos were featured in our general, month-long public voting period from which six grand prize winning schools were selected. Each winning school received \$10,000 to help support STEM education efforts at their schools and the students from the winning teams each received a GoPro.

In addition to the grants the Biogen Foundation makes on its own behalf, it also matches Biogen employee gifts to nonprofit organizations, up to \$25,000 per U.S. employee, per year. This matching grant program contributed \$1.35 million in 2018 to organizations ranging from groups that fight disease to camps for children with serious illnesses to disaster relief efforts.

Read more about the [STAR Initiative](#) and [SPARK Video Contest](#) in our Spotlight Stories feature.

Learn more about the [Biogen Foundation](#).

COMMUNITY LAB

Biogen’s Community Lab programs aim to spark middle and high school students’ curiosity for science learning and inspire them to become the science pioneers of tomorrow. As an industry leader in quality on-site, hands-on science programs for students, our mission is to get more young people excited about science and increase their knowledge of the wide array of career opportunities in the Biotech industry. Students in our programs engage in hands-on biotechnology experiments at our state-of-art facilities and interact with scientists and other biotechnology professionals. Since 2002 more than 50,000 students have participated in Biogen’s hands-on Community Lab programs at our Cambridge, Massachusetts and Research Triangle Park, North Carolina locations, including 4,787 students in 2018.

We intentionally focus on working with students from groups historically underrepresented in STEM. Through our programs, we believe we can move the needle on our goal to get more youth interested in a career in science. With the help of teachers, we bridge classroom curriculum with the cutting-edge work done at Biogen by bringing classroom concepts to life through unique and memorable hands-on lab experiences. Students get exposure to real-world experiments with DNA, gene mutations, protein purification and more while interacting with Biogen employees.

We also support teachers with the design and development of their science curriculum and labs. Additionally, we provide guidance to other schools and share our lessons learned with other organizations and companies to help spark a passion for science even further.

We recently examined the impact of our innovative Adventures in Biotechnology (AIB) summer program; one of 60 programs offered by the Community Lab. AIB is a free one-week lab-intensive program serving high school students who would typically not have access to similar programs. Results of this assessment suggest that students who participate in the AIB programs are 87 percent more likely to pursue a career in the sciences. After participating in a Community Lab program, more than 80 percent of students agreed with the statement, “I could be a scientist.”

Learn more about our [Community Lab](#) programs.

2018 GOALS & PERFORMANCE

\$6.2M

BIOGEN FOUNDATION COMMUNITY GRANTS IN 2018 (U.S. DOLLARS)

3,200+

EMPLOYEES IN 28 COUNTRIES SUPPORTED OVER 60 VOLUNTEER PROJECTS, AS PART OF THE 2018 CARE DEEPLY DAY

50,000+

STUDENTS GIVEN A HANDS-ON INTRODUCTION TO THE WONDERS OF SCIENCE IN OUR TWO COMMUNITY LAB PROGRAMS SINCE INCEPTION IN 2002, INCLUDING 4,787 STUDENTS IN 2018

\$10M

STAR INITIATIVE LAUNCHED, A \$10M (U.S. DOLLAR) COMMITMENT OVER FOUR YEARS TO SUPPORT STEM EDUCATION FOR CAMBRIDGE AND SOMERVILLE, MA-AREA STUDENTS

\$1.35M

EMPLOYEE MATCHING GIFTS IN THE U.S. IN 2018 (U.S. DOLLARS)

2018 Corporate Philanthropy Award

FROM TRIANGLE BUSINESS JOURNAL (NC) FOR OUR CORPORATE PARTNERSHIP WITH THE MUSEUM OF LIFE & SCIENCE IN DURHAM, NORTH CAROLINA

2018 STEMmy Award

FOR STEM INDUSTRY PARTNER OF THE YEAR FROM STEM IN THE PARK (RTP) CELEBRATING ACHIEVEMENTS OF INDIVIDUALS, SCHOOLS, ORGANIZATIONS AND PARTNERS FOR OUTSTANDING WORK IN STEM



Biogen Foundation Creates STAR, Cultivating a Coordinated 'Ecosystem' of Nonprofits to Promote STEM Education

In 2018 the Biogen Foundation launched a coordinated network of six local nonprofits to help students in Cambridge and Somerville, Massachusetts pursue science, technology, engineering and mathematics (STEM) education. The goal is to stimulate students' excitement about STEM, with a specific focus on helping low-income students develop and sustain an interest in science, gain deeper exposure to STEM learning opportunities, and successfully transition into post-secondary education in pursuit of STEM careers.

- Emphasizing STEM disciplines, STAR will follow students from middle school to college
- Designed with students from historically underrepresented communities in mind
- Commitment of \$10 million over four years in two Massachusetts communities

STAR, which stands for Science, Teacher support, Access and Readiness, exists within, and aims to support, the current educational landscapes in Cambridge and Somerville. The STAR nonprofits are aligning with, and complementing, school districts' goals as part of a unified effort to build a STEM education ecosystem that will effectively serve all students. For example, one grantee, Enroot, will support immigrant communities and English language learners (ELL), while another, uAspire, will help students find and use resources to make college affordable. Citizen Schools will focus on hands-on science for middle school students, while The Young People's Project will mentor students to be Math Literacy Workers, training their peers in after-school programs. Breakthrough Greater Boston will also use

Citizen Schools will focus on hands-on science for middle school students, while The Young People’s Project will mentor students to be Math Literacy Workers, training their peers in after-school programs. Breakthrough Greater Boston will also use a “students-teaching-students” model to prepare high schoolers for college, while nearby Lesley University will offer teachers professional development programs in math and the sciences.

The first year of STAR has been about learning and building relationships with our six nonprofit grantees and the two school districts as we know strong relationships across the organizations will be essential to catalyzing this STEM ecosystem

The Biogen Foundation has committed \$10 million over the next four years to enable this coordinated network of organizations to mentor, train, teach and guide students in a hands-on way, from the time they are in middle school through their early college years. Though these groups operate independently, they will lead students on a fully supported educational journey managed by Root Cause in collaboration with the Biogen Foundation.

The first year of STAR has been about learning and building relationships with our six nonprofit grantees and the two school districts as we know strong relationships across the organizations will be essential to catalyzing this STEM ecosystem. We are already seeing these relationships evolve and strengthen in different and meaningful ways, with new collaborations developing across the organizations that would not have happened otherwise – all of which we believe are positive indicators for the long-term success and impact of the STAR initiative.

STAR, along with our [Community Lab](#) programs – where young people have the opportunity to become biotech scientists working on real-world science problems in one of our on-site labs – underscores our commitment to act as a catalyst in STEM education, increase students’ success in science and ignite the next generation of scientists.



Photo courtesy of Food for Free

In-Kind Space Donation Will Enable Food for Free to Help Feed Hungry Families

Food for Free has for years collected donated fresh produce, dry goods, canned foods and breadstuffs from local stores to help feed Cambridge’s hungriest families.

Meanwhile, in the dining halls of nearby universities such as Harvard, MIT and Lesley, significant amounts of their commissaries’ prepared food winds up in the compost bin, at best. Until recently, no one had found a way to repurpose unused café meals into dinners for hungry kids and families.

- We donated space and brought together vendors to build a new kitchen, solving a key challenge facing the local nonprofit
- New kitchen will be a real win-win-win as families facing food insecurity will be fed, employees will have a new on-site volunteer opportunity and food waste will be avoided

“It’s insane,” asserts Food for Free’s Director, Sasha Purpura. “We are throwing away tremendous amounts of food and there are people next door that aren’t getting enough.”

To remedy this, the organization recently launched Family Meals, part of their Prepared Foods Rescue program, which collects prepared items frozen in bulk, then repurposes and packages them into thousands of heat-and-eat meals for local families that face food insecurity or barriers to cooking for themselves.

“Last year we rescued 57,000 pounds of prepared food,” Purpura notes. “This year we're projecting 64,000 pounds, or about 30,000 meals”. But when the lease for the rented kitchen used by Family Meals was not renewed last year, Food for Free did not know where to turn.

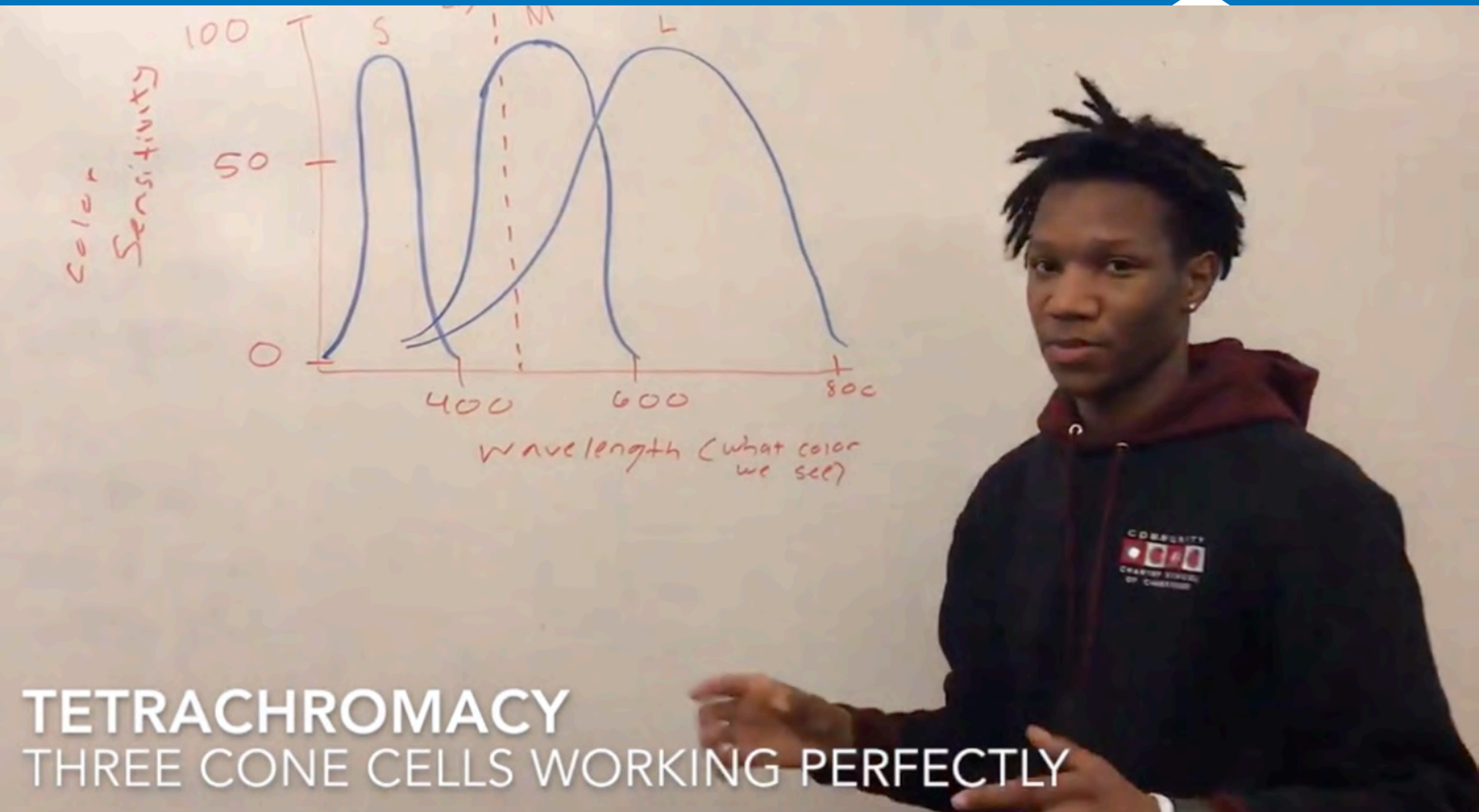
To explore a possible solution, a Food for Free board member and former Biogen employee reached out to Ed Dondero, Biogen’s Director of Facilities, to ask for help. “My first thought was, ‘we use all the space we have’,” recalls Dondero. “But we put our heads together and asked, ‘Is there anything we can do creatively?’”

“Last year we rescued 57,000 pounds of prepared food,” Purpura notes. “This year we're projecting 64,000 pounds, or about 30,000 meals”

There was a bicycle storage area at our Cambridge headquarters and a portion of the space was just being used to store surplus materials. Ed saw possibility in the space and collaborated with the landlord and city commissioners to rezone it for use as a kitchen. Several of our construction vendors built the space pro-bono, with materials we donated, and voila! – a fully dedicated 500-square-foot kitchen came to life. Family Meals moves into the new space in the spring of 2019 and, once fully operational, will have the capacity to produce up to four times the number of meals they currently can for Cambridge families who need them. Now, with a permanent and dedicated kitchen, Purpura believes 100,000 meals are just a few years down the road.

Life Science Cares, a Boston-based organization whose mission is to help families meet their basic needs, works closely with Food for Free and draws financial resources and employee volunteers from the strong community of life science companies in the area to assist the Family Meals program, including Biogen.

“It’s a win all around,” says Dondero. A win indeed. For Family Meals, for Biogen, for our employees and those from Life Science Cares eager to volunteer, and for children and families living with food insecurity and hunger in our community.



TETRACHROMACY

THREE CONE CELLS WORKING PERFECTLY

SPARK Video Awards Ignite Students' Excitement About Science

Motivated by their love of science, the chance to be creative – and maybe the prizes too – middle and high school students in Massachusetts and North Carolina created short science videos for the Biogen Foundation’s inaugural SPARK Video Awards. The students pulled teams together, conducted experiments, wrote scripts and let their excitement about science shine through while competing for a GoPro camera for themselves and \$10,000 for their school.

- Schools from Massachusetts and North Carolina challenged to make creative science videos
- What can you say about genetic mutation in under 3 minutes? A lot!
- Six winning schools each received a \$10,000 Biogen Foundation award and winning students won GoPros

In all, there were 86 entries from 60 schools in the two states from which 20 finalists were chosen by Biogen employees. Winners were selected by a combination of crowd-sourced public voting and input from Biogen employees – using a process open to all employees across the company.

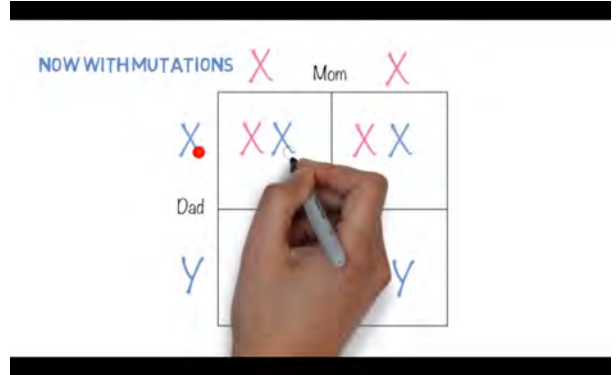
The six winners – three from each state – each submitted a short, creative video on the topic of genetic mutation. The winning entries from Massachusetts included a talking puppet that used DNA sequencing to explain why a quarter of all people hate grapefruit, vanishing teens explaining the roots of color-blindness and one video asking, “What’s wrong with my chromosomes?”

North Carolina winners included a skit that asked, “Dude, what even is genetic mutation?” – and received a surprisingly expert reply. Another, Mutation Station, used a copier to illustrate mitosis and the team behind Project DNA proved that you can rap about anything, including genetics.

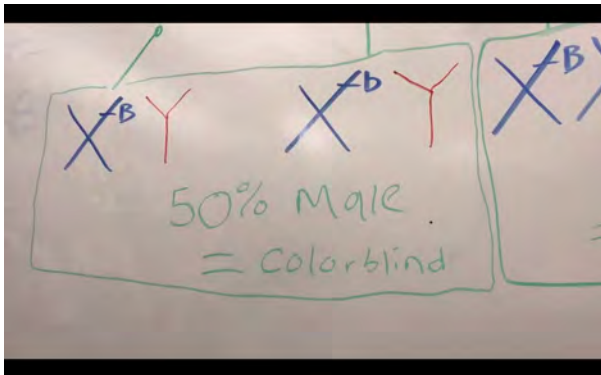
All six winners earned their schools a \$10,000 award from the Biogen Foundation. Congratulations to all those who participated. We can’t wait to see what SPARKS fly in 2019!



PCR Taster Lab, Medford Vocational Technical High School, Medford, MA



What's Wrong with my Chromosomes? Robert Adams Middle School, Holliston, MA



Perception: Genetics Vs. Color Blindness, Community Charter School of Cambridge, MA



Project DNA, Smithfield-Selma High School, Smithfield, NC



Mutation Station, Gates County High School, Gatesville, NC



Genetic Mutation, GR Whitfield School, Grimesland, NC

GRI Report



About this Report

Since 2009 Biogen has conducted materiality assessments every two to three years to identify and prioritize the corporate responsibility topics and issues most important to the company and its stakeholders. These assessments have been informed by the Global Reporting Initiative (GRI) Principles for Defining Report Content. We are in the midst of conducting a new materiality assessment for the 2019 Corporate Social Responsibility (CSR) Report to align with a review of our global CSR strategy.

The 2018 CSR Report contains data from calendar year 2018. In some instances, we include information on initiatives or activities that may have begun in 2018 but have continued into 2019. This report was prepared in accordance with the GRI Standards “core” option. Please refer to the GRI Content Index below to see which material aspects and relevant indicators are reported and how we track our efforts in alignment with the United Nations’ Sustainable Development Goals (SDGs). The SDGs comprise 17 goals and 169 associated targets that incorporate the economic, social and environmental dimensions of sustainable development. At Biogen we support all 17 goals and encourage all businesses to consider how they may also contribute. We continue to refine our CSR strategy to align with the SDGs that are most relevant to our business.

Data in this report covers our worldwide operations, including consolidated subsidiaries but excluding joint ventures. Our operations in 2018 encompassed our major facilities in North Carolina, Denmark, Switzerland and Massachusetts. The boundaries also include our global offices and our commercial fleet operations. With regard to environmental data presented in this report, the scope includes operations over which we have operational control.

ERM Certification and Verification Services, Inc. (ERM CVS) assured the 2018 data for a number of indicators, including Scope 1 and Scope 2 GHG emissions, Biogen’s carbon neutrality methodology and select environmental and social indicators. See the ERM CVS Assurance Statement below for full details of the assurance scope, assurance standards used, work undertaken and conclusions, and see the GRI Data table below for data that was assured (when a 2018 data point is printed in bold, that means that data point was assured).

- [GRI Data Table](#)
- [GRI Content Index](#)
- [Independent Assurance Statement to Biogen Inc](#)

GRI Materiality Approach & Process

We are currently in the midst of conducting a new materiality assessment for next year's CSR Report in alignment with a review of our global CSR strategy. Therefore, we are using the 2016 GRI materiality assessment for this report, the most recent assessment available. In this 2016 assessment, we identified 18 potentially material issues for further attention.

After reviewing the entire list, a set of tier one priorities was agreed upon for immediate attention, including: access to treatments, investments in R&D to ensure a robust pipeline and improving patient outcomes. Throughout this 2018 CSR Report, we explain how Biogen is addressing these issues and measuring performance.

The process to develop the 2016 GRI materiality assessment involved external stakeholder interviews, desk research to establish the broader sustainability context, an internal visioning workshop to prioritize and validate the issues and external stakeholder meetings to review the findings and gather feedback.

GRI Materiality Assessment Process



Our Guiding Principles

Our commitment is grounded in our [Code of Business Conduct \(Values in Action\)](#), our [Sustainability Policy](#) and our other related policies and position statements. These principles and policies outline our focus on ethical business conduct, compliance, accountability and transparency, among other topics. To review the full list of our commitments, visit [Our Guiding Principles](#).

Report Archive

- [2017 Report](#)
- [2016 Report](#)
- [2015 Report](#)
- [2014 Report](#)
- [2013 Report](#)

GRI Data Table

The 2018 data indicated in **bold** form part of ERM CVS' assurance engagement. This Assurance Statement can be found at [GRI Report](#).

	UNITS	2015	2016	2017	2018
ABOUT BIOGEN					
Revenue	Million USD	10,764	11,449	12,274	13,453
R&D Spend	Million USD	2,013	1,973	2,254	2,597
No. of Employees	#	7,350	7,400	7,300	7,800
Corporate Equality Index ¹	%	100	100	100	100
CDP Climate Change ¹	Score	96 C	B	A	A-
CDP Water ¹	Score	B	B	A	B
Dow Jones Sustainability Index ^{1,2}	Score	79 (Industry Leader)	80	80	83 (Industry Leader)
ENVIRONMENTAL IMPACT					
Climate					
Scope 1 (fossil fuels and refrigerants)	Metric Tons (MT CO ₂ e)	60,179	61,970	61,616	68,448
Scope 2 Location-based method (electricity and steam)	MTCO ₂ e	38,173	45,899	42,408	40,172
Scope 2 Market-based method (electricity and steam)	MTCO ₂ e	187	155	59	61
Scope 3 ²	MTCO ₂ e	262,358	254,791	482,465	436,265
Purchased goods and services (category 1) ^{4,5}	MTCO ₂ e	152,900	191,599	396,055	325,928
Capital goods (category 2) ^{4,5}	MTCO ₂ e	47,700	16,664	35,424	51,635
Upstream/downstream energy and water-related activities (category 3)	MTCO ₂ e	9,120	9,321	10,533	11,047
Waste generated in operations (category 5) ⁶	MTCO ₂ e	437	637	573	758
Business travel (category 6)	MTCO ₂ e	21,506	17,542	21,111	27,190
Employee commuting (category 7) ⁴	MTCO ₂ e	15,947	8,549	8,106	8,133
Upstream leased assets (category 8)	MTCO ₂ e	3,612	0	0	0
End of life treatment, sold products (category 12)	MTCO ₂ e	11,136	10,479	10,438	11,574
Total Value Chain (Scopes 1, 2 Market and 3) ⁴	MTCO ₂ e	322,725	316,916	544,139	504,774
Absolute Value Chain Reduction from 2013 (Target: 35% by 2030) ³	%	15	17	-43	-32
Carbon Neutrality					
Renewable Electricity Certificates Retired ⁷ (for Biogen operations)	MWh	114,919	142,988	130,532	132,751
Renewable Electricity Certificates Retired ^{5,7} (for Suppliers operations)	MWh	217,282	227,015	9,652	0

	UNITS	2015	2016	2017	2018
Carbon Offsets ⁸	MTCO2e	322,563	316,917	69,783	76,642
Net Operational Emissions (Scopes 1 & 2)	MTCO2e	0	0	0	0
Net Value Chain Emissions (Scopes 1, 2 & 3)	MTCO2e	0	0	474,356	428,133
Energy					
Total Energy	MWh	427,717	465,007	451,253	491,194
Total Energy (non-renewable)	MWh	312,798	322,019	320,721	358,443
Fossil Fuels (gas, oil, diesel, gasoline)	MWh	312,328	321,374	320,480	358,198
District Steam	MWh	292	644	239	236
Electricity (non-renewable)	MWh	178	0	2	10
Electricity (renewable) ⁷	MWh	114,919	142,988	130,532	132,751
Renewable Energy (% of Total Electricity)	%	100	100	100	100
Renewable Energy (% of Total Energy)	%	27	31	29	27
Fleet Efficiency (US Only)	g CO2e / mile	365	375	397	409
Water					
Total Net Water Use	Million Cubic meters (m3)	0.94	1.11	0.99	1.31
Reused/Recycled Water ⁹	%	10	8	8	7
Water Withdrawal	Million Cubic meters (m3)	0.86	1.03	1.31	1.63
Municipal Supply (potable & grey water)	Million Cubic meters (m3)	0.86	1.02	0.90	1.22
Fresh Surface Water	Million Cubic meters (m3)	0	0.01	0.40	0.41
Rainwater	Million Cubic meters (m3)	0.001	0.001	0.001	0.001
Water Discharges	Million Cubic meters (m3)	0.48	0.60	0.94	1.21
Fresh Surface Water	Million Cubic meters (m3)	0	0	0.39	0.40
Wastewater	Million Cubic meters (m3)	0.48	0.60	0.54	0.81
Assessment of Water Withdrawal ¹⁰ (Target: 100% by 2019)	% of Major Facilities	25	50	50	40
Major Facilities with Fair Share of Water Withdrawal (Target: 100% by 2030)	% of Major Facilities	25	50	50	40
Waste ⁵					
Non-hazardous Waste ¹¹	Metric Tons	4,975	7,961	7,606	8,161
Waste Reused	Metric Tons	N/A	48	31	11
Waste Recycled	Metric Tons	949	1,123	1,012	932
Waste Composted	Metric Tons	1,802	3,543	3,461	3,334
Energy Recovery via Anaerobic Digestion	Metric Tons	43	57	76	70
Waste to Energy	Metric Tons	1,138	1,195	1,014	1,309

	UNITS	2015	2016	2017	2018
Incineration	Metric Tons	988	1,929	1,990	2,472
Waste to Landfill	Metric Tons	55	60	60	33
Waste to Landfill Diversion (Target: 100 percent each year)	%	99	99	100	100
Recovery & Recycling Rate (Reuse, Compost, Recycle)	%	56	60	60	53
Hazardous and Biohazardous Waste	Metric Tons	222	227	211	233
SOCIAL IMPACT					
Community Engagement					
Total Grants ¹²	Million USD	5.2	4.9	4.5	4.8
Matching Gifts Program	Million USD	1.5	1.3	1.7	1.4
Care Deeply Day Volunteer Hours	Hours	14,000	12,000	11,000	12,200
STAR Initiative Investment ¹³ (Target: \$10M by 2022)	Million USD	N/A	N/A	N/A	2.0
Diversity & Inclusion					
Total Diversity Spend ¹⁴	Million USD	196	202	153	160
Total Diversity Spend of US Spend ¹⁴	%	9	10	8	7
Women in Workforce	%	50.1	49.2	49.6	50.6
Women in Management ¹⁵	%	47.3	47.7	47.1	48.4
Minorities in Management (US Only) ¹⁵	%	26.4	26.5	26.4	28
Women on Executive Team	%	18	22	25	30
Women on Board of Directors	%	27	27	27	27
Employee Development					
Employee Satisfaction ¹⁶	%	89	89	89	77
Management Effectiveness Training ¹⁷ (Target: 100% of managers by 2020)	%	N/A	31	52	51
Health & Safety					
Total Injury and Illness Rate (TIIR) ¹⁸	Cases / 200,000 working hours	0.43	0.39	0.22	0.23
Days Away Case Rate (DACR) ¹⁸	Cases / 200,000 working hours	0.16	0.19	0.05	0.11
3-Year Average DACR Industry Rank ¹⁹ (Target: 1st Quartile by 2019)	Rank	5	5	5	4
Contractor DACR ²⁰	Cases / 200,000 working hours	0.41	0.42	0.30	0.21
Number of Fatalities	#	0	0	0	0
Collisions per Million Miles (US Fleet)	Collisions / million miles	5.5	4.6	5.6	5.0

Footnotes for 2018 Data Table

N/A = Data was not collected in reporting year.

All prior environmental data was adjusted with the most recent emission factors available, as applicable.

1. Year of the result is based on the ranking publication year, which may use data from other time periods per the publication's methodology.
2. A [major scoring methodology update](#) occurred in 2018. For year on year comparison, only 2017 results have been recalculated.
3. Scope 3 categories 4, 9, 10, 11, 13, 14 and 15 were determined to not be relevant to our value chain or are aggregated into other categories.
4. Biogen adjusted its approach to carbon neutrality in 2017 to align with industry best practice of operational carbon neutrality. Scope 3 emissions will be noticeably higher as they are no longer 100% matched with renewable energy certificates (see Note 5) or carbon offsets with the exception of employee commuting, which was offset entirely. Biogen will continually improve its strategy towards achieving its science-based target.
5. Carbon emissions generated for the goods and services and capital goods we purchase are based on a proprietary EEIO model and actual supplier data, which can estimate the portion derived from electricity usage. Since 2014, Biogen has matched up to 100% of our share of supplier's electricity usage with renewable electricity certificates.
6. Waste generation at affiliate offices, excluding Weston, Massachusetts, is considered de minimis and excluded. However, waste generation is estimated for the purposes of calculating Scope 3 carbon emissions from Waste Generated in Operations - Category 5.
7. Renewable electricity certificates retired include unbundled Green-e certified Renewable Energy Certifications, Guarantees of Origin, Green Power Certificates, Australian RECs, I-RECs to match Biogen's electricity usage in the US/Canada, Europe, Japan, Australia and South America/China/Mexico, respectively.
8. Carbon offsets purchased and retired in 2018 originate from the following projects: Surrey Landfill in North Carolina, New Bedford Landfill Gas in Massachusetts.
9. Data reflects percentage of reclaimed water on-site, harvested rainwater and municipal grey water compared to total water use.
10. Percent of major sites assessed for water withdrawal using a context-based methodology. Fair, just and proportionate share of locally available renewable supplies is defined as a ratio of less than 1.0 using the Center for Sustainable Organization's Corporate Water Gauge tool, a context-based water metric.
11. Data includes non-hazardous solid waste and trucked off wastewater from our routine operations only. Waste derived from construction and demolition debris, incinerator ash and other contractor activities is not included.
12. Includes all grants awarded by the Biogen Foundation exclusive of the Employee Matching Gifts Program.
13. The STAR Initiative is a coordinated funding strategy designed to help catalyze the development of local STEM ecosystems in Cambridge, Massachusetts and Somerville, Massachusetts. STAR stands for Science, Teacher support, Access and Readiness and is intended to strengthen and support the educational landscapes in these cities by helping increase access to STEM resources and opportunities for students most underrepresented in STEM college or career pathways.
14. 2017 and 2018 diverse supplier spend and related percentage is limited to Tier I direct spend, while 2015 and 2016 includes both Tier I and Tier II direct spend. Excluding Tier II spend, 2017 and 2018 were similar to 2016.
15. Inclusive of all management levels, consisting of manager+ level employees.
16. The annual people survey question for which our employee satisfaction metric is derived changed in 2018 to help us better assess our overall employee engagement. The employee satisfaction value for 2018 is in line with global industry benchmarks.
17. Defined as People Managers completing at least one course in the manager training curriculum.
18. Includes permanent and contracted employees, excludes contractors (e.g. construction, janitorial, food services). TIIR values prior to 2016 exclude affiliate office employees.
19. Industry composed of 15 leading pharmaceutical company peers.
20. Contractor DACR: Includes construction-related contractors only.

GRI Content Index for Biogen's 2018 Corporate Social Responsibility Report

GRI INDICATOR	DESCRIPTION	REFERENCE	SDG ALIGNMENT
GRI 102: GENERAL DISCLOSURES 2016			
Organizational Profile			
102-1	Name of the organization	Biogen Inc.	
102-2	Activities, brands, products, and services	CEO Statement – 2018 Annual Report Item 1., Business, 2018 Form 10-K, page 1	
102-3	Location of headquarters	Corporate Headquarters: Cambridge, Massachusetts (U.S.)	
102-4	Location of operations	Pharmaceutical Operations & Technology Item 2., Properties, 2018 Form 10-K, pages 47-48	
102-5	Ownership and legal form	Corporate and Stockholder Information – 2018 Annual Report	
102-6	Markets served	Item 1., Business, 2018 Form 10-K, pages 10-12	
102-7	Scale of the organization	Highlights – 2018 Annual Report Item 1., Business, 2018 Form 10-K Item 6., Selected Financial Data, 2018 Form 10-K, pages 51-53	
102-8	Information on employees and other workers	Item 1., Business, 2018 Form 10-K, pages 30-31	
102-9	Supply chain	Item 1., Business, 2018 Form 10-K, pages 28-29	Goal 12
102-10	Significant changes to the organization and its supply chain	Item 1., Business, 2018 Form 10-K, pages 2-3	
102-11	Precautionary Principle or approach	Biogen applies the precautionary approach by achieving carbon neutrality, ensuring the safety of patients, and performing detailed risk analyses related to our operations.	
102-12	External initiatives	Our Guiding Principles Advocacy Engagement Environment – 2018 Corporate Social Responsibility Report	
102-13	Membership of associations	Environment – 2018 Corporate Social Responsibility Report Biogen membership associations: RE100 Company – Global initiative uniting more than 100 influential businesses committed to 100% renewable electricity Pharmaceutical Supply Chain Initiative (PSCI) – Organization of leading global pharmaceutical companies focused on increasing the capabilities and responsibility of our supply chains Pharmaceutical Product Stewardship Work Group – Association for drug and sharp manufacturers and marketers formed to address the disposal of unused and unwanted pharmaceutical products.	
Strategy			
102-14	Statement from senior decision-maker	CEO Letter – 2018 Annual Report CEO Statement – 2018 Corporate Social Responsibility Report	
102-15	Key impacts, risks, and opportunities	Item 1A., Risk Factors, 2018 Form 10-K, pages 34-47	
Ethics and Integrity			
102-16	Values, principles, standards, and norms of behavior	Code of Business Conduct (Values in Action) Our Guiding Principles	

GRI INDICATOR	DESCRIPTION	REFERENCE	SDG ALIGNMENT
102-18	Governance structure	Executive Committee – 2018 Annual Report Board of Directors Executive Leadership	
Stakeholder Engagement			
102-40	List of stakeholder groups	GRI Materiality Assessment	
102-41	Collective bargaining agreements	Approximately 5.3 percent of our employees are under a collective bargaining agreement. All of these employees work in our Hillerød, Denmark, manufacturing facility.	
102-42	Identifying and selecting stakeholders	GRI Materiality Assessment	
102-43	Approach to stakeholder engagement	GRI Materiality Assessment	
102-44	Key topics and concerns raised	GRI Materiality Assessment	
Reporting Practice			
102-45	Entities included in the consolidated financial statements	All major entities are included in the boundaries of this report. See the 2018 Form 10-K	
102-46	Defining report content and topic Boundaries	GRI Materiality Assessment	
102-47	List of material topics	GRI Materiality Assessment	
102-48	Restatements of information	No restatements were made	
102-49	Changes in reporting	No significant changes from the previous reporting period	
102-50	Reporting period	Data covers fiscal year 2018; ending December 31, 2018. Some activities from 2019 are also included	
102-51	Date of most recent report	April 30, 2019	
102-52	Reporting cycle	We report on an annual basis	
102-53	Contact point for questions regarding the report	Corporate Social Responsibility contact: public.affairs@biogen.com	
102-54	Claims of reporting in accordance with the GRI Standards	This report has been prepared in accordance with the GRI Standards: Core option	
102-55	GRI content index	GRI Index	
102-56	External assurance	ERM CVS Independent Assurance Statement to Biogen Inc.	
GRI 103: TOPICS AND TOPIC BOUNDARIES			
103-1	Explanation of the material topic and its Boundary	GRI Report GRI Materiality Process	
103-2	The management approach and its components	Strategy – 2018 Annual Report 2018 Corporate Social Responsibility Report	
103-3	Evaluation of the management approach	Consolidated Financial Statements, 2018 Form 10-K, pages F-83-84 2018 Corporate Social Responsibility Report	
GRI 200-400: TOPIC-SPECIFIC DISCLOSURES 2016			
ECONOMIC			
Economic Performance			
201-1	Direct economic value generated and distributed	GAAP to Non-GAAP Reconciliation – 2018 Annual Report Item 6., Selected Financial Data, 2018 Form 10-K, pages 51, F-78	
201-2	Financial implications and other risks and opportunities due to climate change	Environment – 2018 Corporate Social Responsibility Report Carbon Disclosure Project (CDP) Disclosure Item 1A., Risk Factors, 2018 Form 10-K, page 40 Consolidated Financial Statements, 2018 Form 10-K, page F-78	
201-3	Defined benefit plan obligations and other retirement plans	Consolidated Financial Statements, 2018 Form 10-K, page F-78	

GRI INDICATOR	DESCRIPTION	REFERENCE	SDG ALIGNMENT
Indirect Economic Impacts			
203-2	Significant indirect economic impacts	2018 Corporate Social Responsibility Report GRI Materiality Assessment	Goal 3 Goal 4 Goal 8
Procurement Practices			
204-1	Proportion of spending on local suppliers	Not applicable Biogen discloses this information only on a global level Our Guiding Principles Supplier Diversity – Working With Us	Goal 5 Goal 8
ENVIRONMENT			
Water and Effluents			
303-1	Interactions with water as a shared resource	Environment – 2018 Corporate Social Responsibility Report GRI Table – 2018 Corporate Social Responsibility Report Carbon Disclosure Project (CDP) Disclosure	Goal 6
303-3	Water withdrawal	Environment – 2018 Corporate Social Responsibility Report GRI Table – 2018 Corporate Social Responsibility Report Carbon Disclosure Project (CDP) Disclosure	Goal 6
303-4	Water discharge	Environment – 2018 Corporate Social Responsibility Report GRI Table – 2018 Corporate Social Responsibility Report Carbon Disclosure Project (CDP) Disclosure	Goal 6
303-5	Water consumption	Environment – 2018 Corporate Social Responsibility Report GRI Table – 2018 Corporate Social Responsibility Report Carbon Disclosure Project (CDP) Disclosure	Goal 6
Emissions			
305-1	Direct (Scope 1) GHG emissions	Environment – 2018 Corporate Social Responsibility Report GRI Table – 2018 Corporate Social Responsibility Report Carbon Disclosure Project (CDP) Disclosure	Goal 7 Goal 13
305-2	Energy indirect (Scope 2) GHG emissions	Environment – 2018 Corporate Social Responsibility Report GRI Table – 2018 Corporate Social Responsibility Report Carbon Disclosure Project (CDP) Disclosure	Goal 7 Goal 13
305-3	Other indirect (Scope 3) GHG emissions	Environment – 2018 Corporate Social Responsibility Report GRI Table – 2018 Corporate Social Responsibility Report Carbon Disclosure Project (CDP) Disclosure	Goal 7 Goal 13
305-5	Reduction of GHG emissions	Environment – 2018 Corporate Social Responsibility Report GRI Table – 2018 Corporate Social Responsibility Report Carbon Disclosure Project (CDP) Disclosure	Goal 7 Goal 13
Effluents and Waste			
306-2	Waste by type and disposal method	Environment – 2018 Corporate Social Responsibility Report GRI Table – 2018 Corporate Social Responsibility Report	Goal 12
Environmental Compliance			
307-1	Non-compliance with environmental laws and regulations	There were no significant instances of non-compliance in 2018 Our Guiding Principles Item 1A., Risk Factors, 2018 Form 10-K, page 46	Goal 12

GRI INDICATOR	DESCRIPTION	REFERENCE	SDG ALIGNMENT
Supplier Environmental Assessments			
308-1	New suppliers that were screened using environmental criteria	Environment – 2018 Corporate Social Responsibility Report 2018 Supplier Environment & Social Assessments	Goal 12
308-2	Negative environmental impacts in the supply chain and actions taken	Environment – 2018 Corporate Social Responsibility Report 2018 Supplier Environment & Social Assessments Item 1A., Risk Factors, 2018 Form 10-K, page 46	Goal 12
SOCIAL			
Employment			
401-1	New employee hires and employee turnover	Confidentiality constraints Break down by age group, gender is not shared publicly.	
Occupational Health and Safety			
403-1	Occupational health and safety management system	Employees – 2018 Corporate Social Responsibility Report Environmental, Health and Safety Policy Statement	Goal 3 Goal 8
403-2	Hazard identification, risk assessment, and incident investigation	Employees – 2018 Corporate Social Responsibility Report Environmental, Health and Safety Policy Statement	Goal 3 Goal 8
403-4	Worker participation, consultation, and communication on occupational health and safety	Employees – 2018 Corporate Social Responsibility Report Environmental, Health and Safety Policy Statement	Goal 3 Goal 8
403-9	Work-related injuries	Employees – 2018 Corporate Social Responsibility Report GRI Table – 2018 Corporate Social Responsibility Report Environmental, Health and Safety Policy Statement	Goal 3 Goal 8
Diversity and Equal Opportunity			
405-1	Diversity of governance bodies and employees	Employees – 2018 Corporate Social Responsibility Report Board of Directors	Goal 5
405-2	Ratio of basic salary and remuneration of women to men	Confidentiality constraints Biogen does not disclose externally any salary and wages related data except the Executive Compensation of the Executive Committee and Board of Directors	
Local Communities			
413-1	Operations with local community engagement, impact assessments, and development programs	Community – 2018 Corporate Social Responsibility Report Culture & Engagement – 2018 Annual Report Corporate Giving	Goal 3 Goal 4
Supplier Social Assessment			
414-1	New suppliers that were screened using social criteria	Employees – 2018 Corporate Social Responsibility Report Supplier Diversity – Working With Us Code of Business Conduct (Values in Action) 2018 Supplier Environment & Social Assessments	Goal 5 Goal 8 Goal 12
414-2	Negative social impacts in the supply chain and actions taken	Employees – 2018 Corporate Social Responsibility Report Supplier Diversity – Working With Us Code of Business Conduct (Values in Action) 2018 Supplier Environment & Social Assessments	Goal 5 Goal 8 Goal 12

GRI INDICATOR	DESCRIPTION	REFERENCE	SDG ALIGNMENT
Public Policy			
415-1	Political contributions	Our Guiding Principles Political Contributions Policy 2018 Form 10-K	Goal 16
Customer Health and Safety			
416-1	Assessment of the health and safety impacts of product and service categories	Patients – 2018 Corporate Social Responsibility Report Products & Pipeline – 2018 Annual Report Our Guiding Principles Patient Safety Product Stewardship	Goal 3
416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	There were no significant instances of non-compliance in 2018 Products & Pipeline – 2018 Annual Report Patient Safety Product Stewardship	Goal 3
Marketing and Labeling			
417-1	Requirements for product and service information and labeling	Our Guiding Principles Patient Safety Product Stewardship	Goal 3
417-2	Incidents of non-compliance concerning product and service information and labeling	There were no significant instances of non-compliance in 2018 Our Guiding Principles	Goal 3
417-3	Incidents of non-compliance concerning marketing communications	There were no significant instances of non-compliance in 2018 Our Guiding Principles	Goal 3
Customer Privacy			
418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	There were no significant instances of breaches of customer privacy or losses of customer data in 2018 Our Guiding Principles Global Privacy Program	Goal 16

*Assessed using the [SDG Compass: Linking the SDGs and GRI Standards](#) available on the GRI website's resource library.