



Synthetic DNA Real Sustainability

2024 CORPORATE RESPONSIBILITY REPORT

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The background features a dark blue base with intricate, wavy patterns of fine lines in shades of blue and green. Several large, semi-transparent circles are scattered across the scene, some in solid green and others in a lighter blue. A white circle in the top right corner contains the text 'SECTION 1'.

SECTION 1

INTRODUCTION

A letter from our CEO, Emily Leproust, Ph.D.

At Twist, we approach corporate responsibility in a fundamentally different way from what you might see elsewhere. We don't view it as a separate initiative or an afterthought. Instead, our business strategy itself drives our corporate responsibility efforts. This approach ensures that every responsible action we take is rooted in sound business logic and contributes directly to our company's growth and success. We include only the efforts that drive our business success in our corporate responsibility.

By miniaturizing the chemistry of DNA synthesis to enable synthesis at scale, our innovative and proprietary processes reduce emissions, eliminate waste and allow us to operate in a smaller physical footprint, providing our customers with high quality, sustainable solutions to advance their research.

We believe that synthetic DNA and innovation in synthetic biology has the power to solve some of humanity's greatest challenges. As we expand our portfolio of products and services, pushing the boundaries of innovation, we recognize our responsibility to ensure that our technology and products are developed and deployed ethically, sustainably, and for the benefit of society at large.

This report outlines our commitment to responsible innovation, environmental stewardship, social impact, and ethical governance. It serves as a testament to our dedication to creating long-term value not just for our shareholders, but for all stakeholders — including our employees, customers, partners, and the global community.



In the pages that follow, we detail our efforts and achievements across several key areas:

1. Product Innovation (our customers get sustainability for free):

We showcase how our synthetic DNA technology is enabling customers to develop eco-friendly alternatives to petrochemical-based products, create more resilient crops, and drive breakthroughs in renewable energy.

2. Diverse Industry Applications: Our customers are changing the world for the better. They develop novel therapeutics, revolutionary diagnostic tests, solutions that break down plastics and so much more. We take pride in being the Robin to their Batman, a trusted partner that provides products that enable them to innovate rapidly, sustainably and truly make a difference.

3. Environmental Stewardship: We quantify how our proprietary process to manufacture DNA minimizes our environmental footprint. In addition, we report on energy efficiency, recycling, waste reduction programs, sustainable packaging and forward-thinking lab practices.

4. Empowering Our Workforce: We highlight our commitment to fostering a diverse, inclusive, and supportive work environment that nurtures talent and drives innovation.

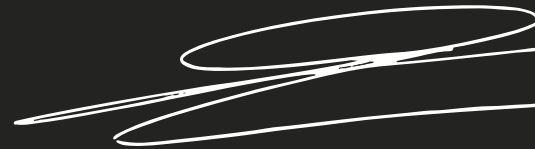
5. Community Engagement: We share our efforts to inspire the next generation of scientists through STEM education programs and our support for local communities.

6. Ethical Innovation and Responsible Governance: We detail our approach to ensure ethical business practices, transparency, and accountability at all levels of our organization. We showcase our biosecurity program, our commitment to keeping customer and partner data protected and our manufacturing operations located solely in the United States.

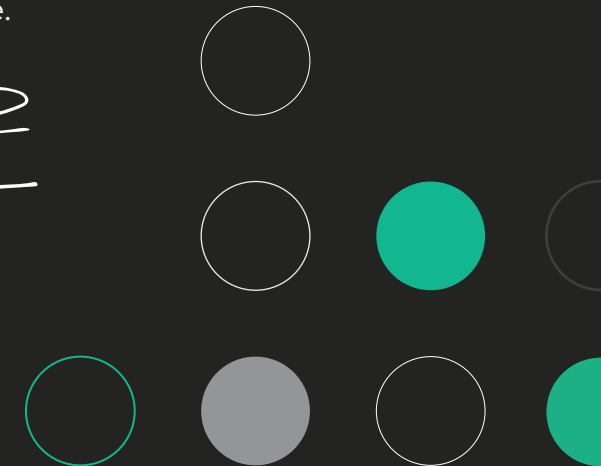
At Twist, sustainability is more than an objective — it's a fundamental aspect of our technology, environments and corporate culture. We strive to innovate, collaborate and lead by example as a force for positive change in the industry.

This report not only showcases our progress but also sets forth our vision for the future — one where cutting-edge science and unwavering ethical standards go hand in hand.

Together, we are #WritingTheFuture.



Emily Leproust
CEO and Co-Founder
Twist Bioscience Corporation



Guiding principles



Passionate drive,
fierce determination.

Always strive for excellence
and persevere.

Adapt resiliently and learn
from each attempt.

Drive strategic and
sustainable outcomes.

Take ego-less ownership
and focus on resolution.



Bold ideas, daily
incremental contributions.

Skillfully deliver on ambitious
goals and stay humble.

Collaborate and share
knowledge to create value.

Diligently improve quality,
velocity and cost.

Voice your ideas, commit the
time, find new ways.



Always ask, what can I do for you?

Listen, hear and
dialogue empathetically.

Relentlessly focus on internal
and external customer needs.

Communicate to deliver
outstanding service.

Build mutually beneficial,
long-lasting relationships.



Vigilant stewardship,
transparent interactions.

Provide products designed and
intended for public benefit.

Protect the well-being of
people and our planet.

Demonstrate integrity
and ethical behavior.

Interact in an accountable,
respectful and transparent manner.

Our business

At Twist Bioscience, we work in service of our customers, who are changing the world for the better. Our synthetic DNA tools enable breakthroughs in various fields, including healthcare, food and agriculture, industrial chemicals, academic research, and data storage, enhancing lives and promoting sustainability. We believe that our customers' success benefits everyone, and we are dedicated to accelerating their progress through our advanced technology.

“Fiscal 2023 was a defining year for Twist as we grew our revenue 20% year over year with strength in NGS and synbio in particular,” said Emily M. Leproust, PhD, CEO and co-founder of Twist Bioscience.

Serving close to 3,500 customers worldwide, we reported record revenue of \$245.1 million in fiscal 2023, an increase of 20% over \$203.6 million in fiscal 2022. Additionally, customer orders increased to \$264 million in fiscal 2023, an increase of 17% over \$226.4 million in fiscal 2022.



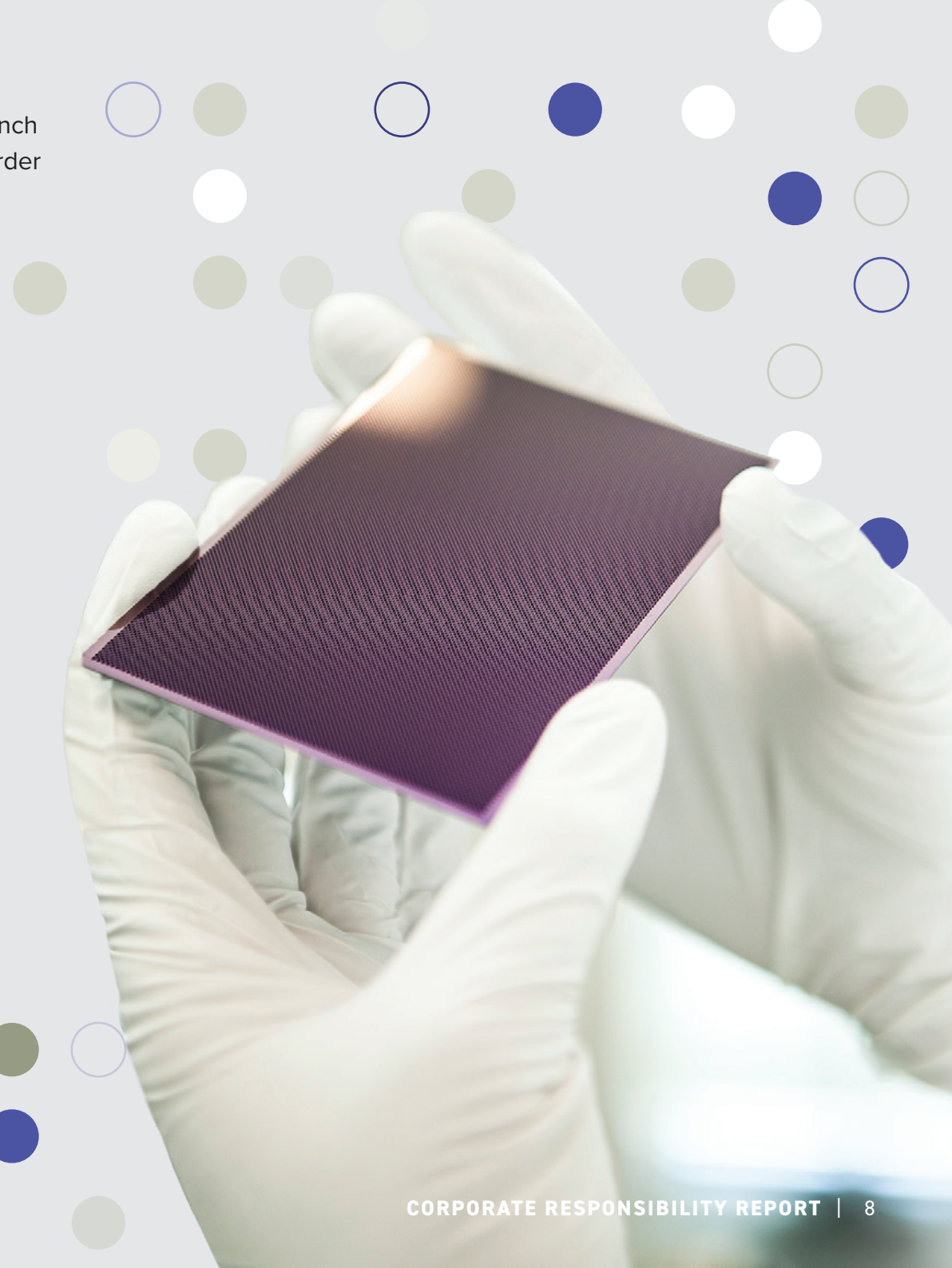
Enabled by our state-of-the-art manufacturing facility in Wilsonville, Oregon, we reached a key milestone in November 2023 with the launch of Express Genes, our new leading gene synthesis service with an order to shipping turnaround time starting at five business days.¹

This premier service provides our customers with NGS-verified, sequence perfect Clonal Genes, synthesized between 0.3–5 kb in length and cloned into the vector of their choice, all within 5–7 business days¹. Relying on our fast production time and high quality, our customers have come to expect speed and precision for all applications, including antibody engineering, drug discovery research, mRNA synthesis, and many more.

Our proprietary DNA synthesis platform underpins our innovative products for diverse applications and markets. We've developed a revolutionary technology that “writes” DNA on a silicon chip, industrializing synthetic DNA production. This proprietary method allows us to miniaturize conventional chemical DNA synthesis reactions, writing over one million pieces of DNA at a time on a silicon chip about the size of a large mobile phone. Because we miniaturized the chemical process for making DNA, we reduced the chemical reagent consumption by 99.8%, making our process significantly more sustainable and eco-friendlier than traditional methods.* By utilizing our synthetic DNA into their products and workflows, we offer our customers more sustainable inputs for their product development.

* Calculated Twist internal data using Dr. Oligo benchmark January 2021

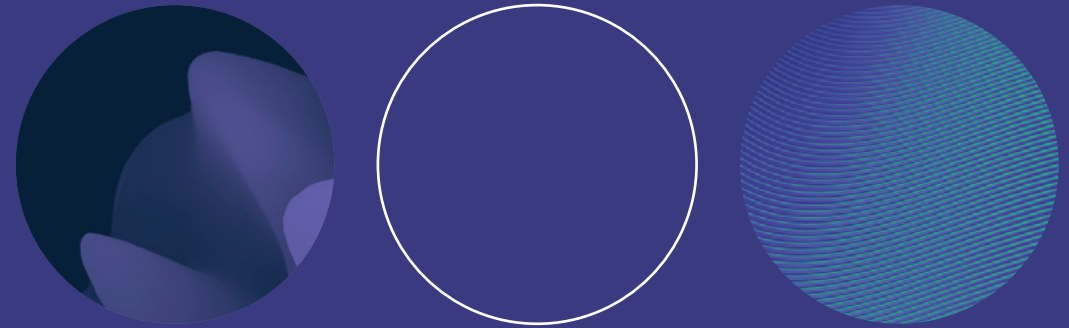
1. Express Genes ship in 5–7 business days. This time will vary based on complexity and length of the sequence. Orders placed outside of the US may incur additional delivery turnaround time



We quantified the carbon emission impact of our sustainable approach for making all of our Clonal Genes in fiscal 2023. We shipped approximately 634,000 genes to customers during the year. Manufacturing 634,000 genes using a traditional plate-based approach would have generated 14,675,670 kg of CO₂e, whereas we generated vastly less CO₂e of 22,802 kg.*

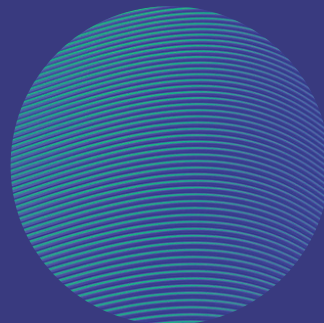
Our unique technology enables the production of a diverse range of synthetic DNA-based products, including synthetic genes, next-generation sequencing (NGS) tools, and antibody libraries for drug discovery and development. Our products can help customers conduct research more efficiently and effectively. In fiscal year 2023, we shipped our products to approximately 3,450 customers worldwide, covering a wide range of industries.

Additionally, we are expanding our capabilities by leveraging our proprietary platform to innovate within larger market opportunities and new applications for synthetic DNA. We offer antibody discovery services using in vitro, in vivo, and in silico methods, and we are developing solutions for storing digital data in DNA.



“Modern global sustainability is the integration of the environment, people, and the economy, each of them is needed to thrive.”

**EMILY LEPROUST, PH.D.
CEO AND CO-FOUNDER, TWIST BIOSCIENCE**



* Calculated Twist internal data using Dr. Oligo benchmark January 2021

Supply chain management

Oversight

Our dedication to social and environmental responsibility and ethical business practices extends throughout our supply chain. We implemented a Supplier Code of Conduct to identify and engage with businesses that adhere to principles consistent with the Code. Furthermore, we conduct an annual outreach for our suppliers to acknowledge and respond to our Corporate Responsibility Commitment Letter, and we track the responses as part of our business review process.

Strategy

Our supplier code of conduct states that all Twist suppliers are expected to comply with the applicable laws, regulations and rules in all countries to which they travel, in which they operate and where they otherwise do business. Suppliers should have compliance programs designed to ensure that their business activities with and/or on behalf of Twist are conducted in full compliance with all applicable laws and regulations, and must, without limitation, meet the requirements including human rights and labor, forced labor and human trafficking, child labor, working hours, wages and benefits, health and safety, environment, business practices and ethics, legal and regulatory compliance (trade, antitrust, boycotts, anti-corruption), sustainable procurement and non-compliance reporting.



As part of our updated Supplier Scorecard process, we are implementing specific grading dedicated to our supply chain partner's effectiveness in employing corporate responsibility techniques. Having this specific grading allows us to not only qualify which suppliers are engaging with industry-leading responsible business practices, but also to quantify their improvements.

We received a Bronze medal from EcoVadis in a recent assessment, validating our commitment to improving sustainability in the supply chain and our role in supplying our customers sustainably.

Product quality and management

Oversight

At Twist Bioscience, we are dedicated to providing and promoting quality across our entire organization. Our Quality Policy underlines our commitment to customer satisfaction, legal and regulatory compliance, and delivering exceptional products and services. We consider this commitment to be a fundamental aspect of our organizational culture and values. As a collective, we hold ourselves accountable for achieving our quality objectives, continuously improving our practices, and maintaining an efficient quality management system.

In February 2024, Twist Bioscience announced European Union (EU) *in vitro* diagnostic regulations (IVDR) compliant Twist Precision Dx NGS Products. In accordance with the IVD regulations put in place by the EU to ensure the safety and quality of *in vitro* diagnostic medical devices, Twist Precision Dx Products² are CE-marked and compliant with EU IVDR 2017/746 regulations demonstrating the quality of kit materials. The Precision Dx products are designed to enable panel sequencing within a clinical setting.

In April 2024, Twist Bioscience synthetic gene fragments were honored with a Silver Seal of Quality by SelectScience®, recognizing the product's consistently outstanding customer feedback and marking the second time Twist has received this prestigious award. This places the Gene Fragments among the top 0.1% of products on SelectScience® with the highest customer review ratings, a testament to their value for scientists and healthcare professionals worldwide.



With 79 reviews and an impressive average star rating of 4.9 out of 5, the Gene Fragments have clearly made their mark. As Mike Grupe from Washington University in St. Louis put it, “We only needed a single correct plasmid with the gene fragment from Twist. So far, every colony I have picked has the gene fragment that we ordered, without mistakes. That, plus the fact that we got the gene fragment more quickly than we expected, means that we are more likely to use Twist for this service again.”

Seals of Quality recognize the top 0.1% of products that consistently receive the highest customer review ratings on SelectScience® and are designed to help scientists and healthcare professionals worldwide immediately recognize the instruments and services their peers rate the highest.



². For *in vitro* diagnostic use. Not available in all regions and countries.

Strategy

The Quality Management System (QMS) at Twist is the core driver ensuring products are safe and effective for their intended use. In addition, consistently meeting the specifications as defined by results of clinical and/or detailed technical design and validation.

Quality Assurance (QA) is an integral part of QMS and supports various production functions (e.g., product release, calibration support, environmental monitoring, facilities, validation).

Our Regulatory Affairs (RA) team ensures Twist complies with all of the regulations and laws pertaining to Food and Drug Administration, European Union Regulators (e.g., IVDR), and local Food and Drug Branch. They also support Clinical Trial activities.

To align with our Quality Policy, we obtained ISO 13485:2016 certification for the Quality Management System (QMS) of our key products, which is the industry's gold standard for medical devices. ISO is a globally recognized network of international standards with over 18,000 standards that cover nearly every aspect of technology and business. ISO 13485 emphasizes the importance of a robust risk management process and ensures personnel are competent to perform their assigned tasks. Our training programs, competency assessments, and ongoing professional development initiatives demonstrate our commitment to a skilled workforce.

We identify, assess, and mitigate risks throughout the product lifecycle, including design, production, and distribution. Additionally, given the complexity of the supply chain in biotechnology, we ensure the quality of raw materials and components sourced from suppliers. This involves supplier audits, quality agreements, and ongoing monitoring. Our corrective and preventive action process includes how quality events are investigated, root causes identified, and corrective actions implemented, which enhances transparency.

At Twist Bioscience, customer feedback is systematically collected, analyzed, and used to drive continuous improvement, which specifically includes product quality. To ensure quality sustainment, we conduct regular internal audits for verifying the effectiveness of the quality management system. We have a well-documented quality management system, which is crucial for traceability and compliance. Our approach to post-market surveillance, including complaint handling, data analysis, and reporting to regulatory authorities, demonstrates our commitment to patient and end-user safety.

Twist continues to expand our certifications to include several additional products in our South San Francisco and Wilsonville facilities. Additionally, Twist has acquired IVDR CE-mark certification for the EU market. In addition to the certifications, Twist manufacturing environment continues to comply with GMP regulations.

Background on synthetic DNA and how it fuels product development

DNA's role as the fundamental building block of biology makes it a key component of many applications throughout several different industries. The ability to design and engineer DNA to drive innovative products is expanding at an unprecedented rate, driving significant growth across fields as diverse as medicine and data storage. Synthetic DNA holds immense potential for developing sustainable products that are environmentally friendly and cost-effective, often replacing fossil fuels as primary materials. Through the power of our proprietary platform for manufacturing synthetic DNA, our customers can harness the capabilities of DNA to create groundbreaking applications across various industries, paving the way for a more sustainable future.



Synthetic DNA applications

MEDICINE

Research and thought leadership have shown that synthetic DNA plays a pivotal role in developing and producing next-generation therapeutics, including cell, gene, and nucleic acid therapies. The production of biologics and antibody drugs relies heavily on dependable synthetic DNA sources. Additionally, synthetic DNA is essential in creating NGS-based molecular diagnostic tools, crucial for personalized treatment of diseases, such as cancer, Alzheimer's, and Parkinson's. Personalized medicine depends on the availability of individualized synthetic DNA to correct genetic mutations identified through NGS-based diagnostics using technologies like CRISPR or other genome editing tools.

Specifically, synthetic DNA enables advancements in liquid biopsy—a blood test that can detect early-stage cancer—and tests for minimal residual disease (MRD), which can identify small amounts of circulating tumor DNA (ctDNA) in the blood. These developments have led to commercial availability of several tests, revolutionizing cancer detection and monitoring. Synthetic DNA is also critical for developing cell and gene therapies tailored to specific genetic mutations, potentially leading to more effective treatments.

Beyond personalized medicine, synthetic DNA plays a vital role in discovering new natural products through deep sequencing of environmental microbiomes and enables cost-effective production of key chemical compounds. These emerging applications highlight the importance of synthetic DNA in various scientific fields, emphasizing its potential to drive significant advancements in biotechnology, medicine, and beyond.

INDUSTRIAL CHEMICALS

The chemical production industry is evolving toward bioprocesses that use atmospheric carbon dioxide (CO₂) instead of petroleum as the carbon source. By introducing synthetic DNA into the genes of microorganisms like yeast, bacteria, and algae, these organisms can naturally ferment sugars to produce a wide range of chemicals.

This method offers several key benefits:

Sustainability: Utilizing CO₂ reduces dependence on petroleum, cutting greenhouse gas emissions and promoting environmental sustainability. This process leverages renewable resources, making it eco-friendly.

Diverse product range: Synthetic DNA enables the creation of chemicals that are not accessible through petroleum-based processes. This includes high-value products like synthetic silk, cosmetics such as squalene, and other advanced materials.

Our approach not only supports the shift toward greener and more sustainable industrial practices, but it also fosters innovation and may reduce production costs.

AGRICULTURAL-BIOTECHNOLOGY AND ANIMAL HEALTH

To ensure the security of the world's food supply, researchers continually engineer crops that can resist evolving pests and diseases, adapt to extreme drought and flood conditions, and grow more economically by increasing yield, which reduces the need for land, chemical pesticides and fertilizers.

Current and emerging genomic technologies use synthetic DNA to add optimal traits to plants and their synergistic microbes. These technologies also enable the addition of multiple traits at once, which is known as trait stacking.

Synthetic DNA has facilitated the development of robust and cost-effective livestock diagnostic tests that screen for diseases, drive breeding decisions and are pivotal for health management. Furthermore, NGS-based genetic tests make it possible for improved crop breeding and genomic selection. These tests allow for the identification of beneficial traits in plants (disease resistance, drought tolerance, and higher yields) at the genetic level. This facilitates selective breeding to develop crops with desired characteristics more quickly and precisely.

Researchers have used Twist NGS technology to identify the region of DNA in diverse noncommercial peanut varieties that have resistance to smut fungus. They now use this DNA as a marker to confirm efficient transfer of this resistance gene to commercial peanut varieties through genomic selection and speed breeding.

Sustainable maintenance and optimization of production plants and livestock are crucial for supporting local and global economies. Overall, synthetic DNA and genomics are revolutionizing agriculture by providing tools and insights that optimize productivity, sustainability, and resilience in farming systems.



Pursuing vertical market opportunities

DRUG DISCOVERY AND DEVELOPMENT

Our antibody discovery services combine cutting-edge technologies, advanced bioinformatics, and unparalleled expertise to deliver custom antibody solutions that surpass expectations for our partners. Whether our partner is navigating complex target landscapes or seeking to optimize antibody performance, our team applies in vitro, in vivo and in silico approaches to identify lead antibodies against specific biological targets for our partners.

STORING DIGITAL DATA ON DNA: NATURE'S WAY

The exponential growth of digital data worldwide poses significant challenges for current data storage technologies. Mainstream storage media, such as hard drives and solid-state drives, are struggling to keep pace with the increasing demand, both in terms of capacity and efficiency. As a result, the industry is actively seeking alternative storage solutions, with archival storage emerging as a critical area of focus. Archival storage, which refers to data that is stored and accessed infrequently, is projected to account for a significant majority (60–80%) of total data storage. This trend is driven by the overall decrease in data access frequency, making archival storage the fastest-growing storage tier.

However, existing storage technologies face several limitations when it comes to archival storage. These include:

Longevity: Current storage media have limited lifespans and require regular data migration to prevent data loss, which can be costly and labor-intensive.

Maintenance and energy consumption: Maintaining and powering traditional storage systems requires substantial energy, leading to higher operational costs and environmental impact.



DNA-based data storage offers a promising alternative to overcome these limitations. Here are some key advantages of DNA storage:

Density: DNA storage has an unparalleled data density, capable of scaling from large data lakes to even larger data oceans. This means vast amounts of data can be stored in a very small physical space.

Longevity: DNA is a remarkably stable molecule, capable of preserving data for centuries or even millennia under the right conditions. This makes it ideal for long-term archival storage without the need for frequent data migration.

Immutability: Once data is encoded into DNA, it remains unchanged, providing a stable and reliable medium. DNA can always be read, ensuring data integrity over time.

Sustainability: DNA storage has a significantly lower energy and carbon footprint compared to traditional storage media. It does not require continuous power to maintain the stored data, making it a sustainable option for large-scale data storage.

In summary, DNA storage has the potential to revolutionize the data storage industry by offering a scalable, long-lasting, stable and sustainable solution to meet the growing demand for archival storage.



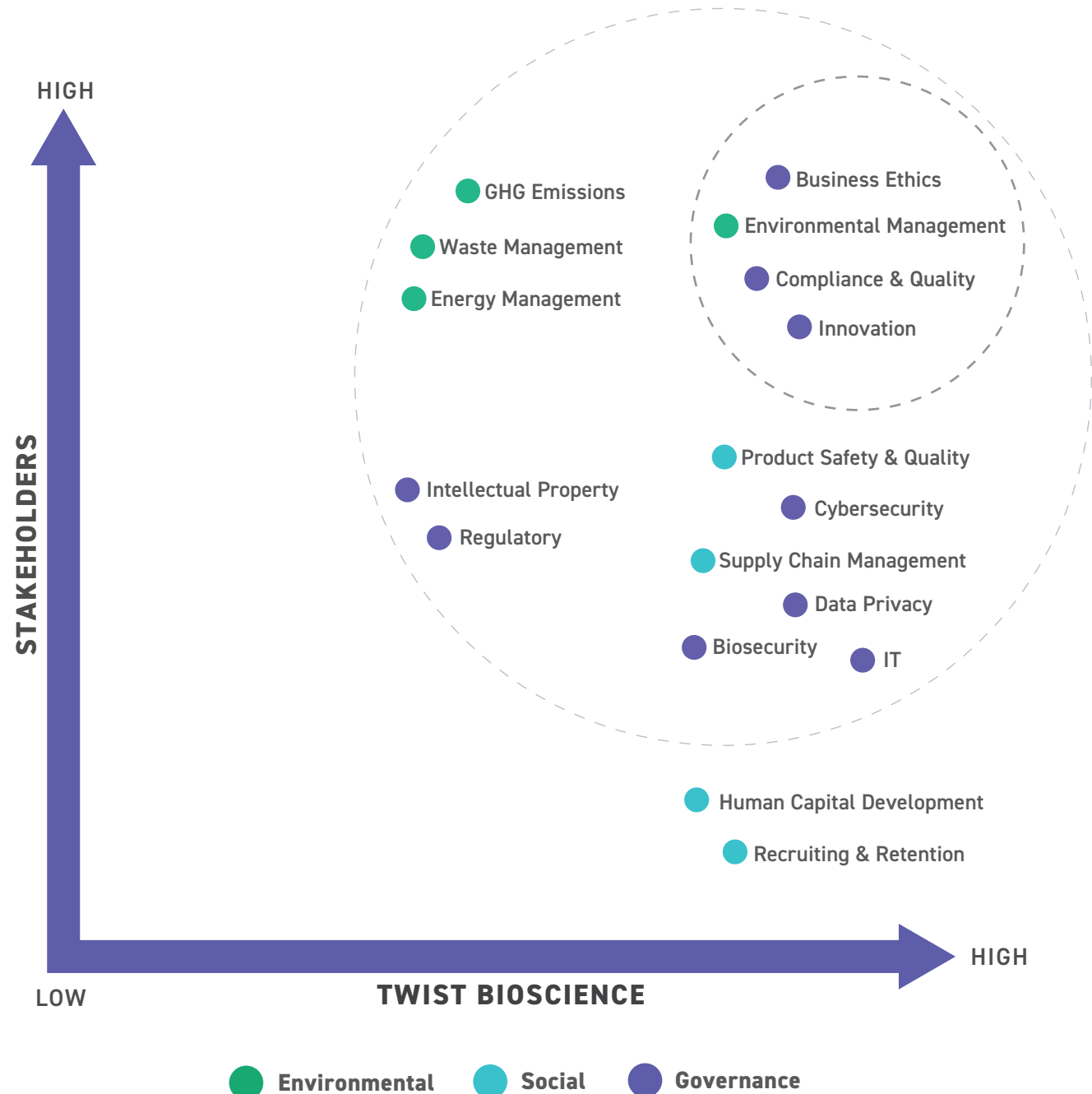
DNA storage has the potential to revolutionize the data storage industry by offering a scalable, long-lasting, stable and sustainable solution to meet the growing demand for archival storage.



Materiality assessment

An integral aspect of our Corporate Responsibility initiatives is our Materiality Assessment process. In 2024, we conducted a second assessment through a meaningful engagement with all our internal and external stakeholders to identify significant environmental, social, and governance risks that could impact Twist and our stakeholders.

This year's Corporate Responsibility Report includes a number of new disclosures as a result of our stakeholder engagement process. We have engaged executive members and various departments throughout the company. We have significant and meaningful engagement with our employees, customers, investors and suppliers. We then assessed the outcomes with the executive leadership team to determine the prioritization of risks and shared the findings with the Board of Directors. For each risk identified, we have established plans to mitigate them.



Corporate Responsibility at Twist Bioscience

As a company, we are committed to Corporate Responsibility goals and have established an internal Corporate Responsibility Team with the following members.

Nelson Chan is our Board of Directors representative overseeing our Corporate Responsibility efforts. Angela Bitting is our Chief Corporate Responsibility Officer, with executive objectives and compensation tied to achieving Corporate Responsibility goals. Carlos Zapata is our Senior Staff Corporate Responsibility Specialist.



NELSON CHAN
BOARD OF DIRECTORS,
LEAD CORPORATE
RESPONSIBILITY
REPRESENTATIVE

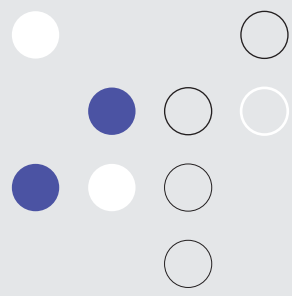


ANGELA BITTING
CHIEF CORPORATE
RESPONSIBILITY OFFICER



CARLOS ZAPATA
SENIOR STAFF CORPORATE
RESPONSIBILITY SPECIALIST

OUR CORPORATE RESPONSIBILITY AMBASSADORS REPRESENT DIVERSE AREAS OF THE COMPANY AND MEET AT LEAST QUARTERLY. THESE AMBASSADORS INCLUDE THE FOLLOWING TWIST EMPLOYEES:



EMILY LEPROUST, PH.D.
CEO, CO-FOUNDER



PATRICK FINN
PRESIDENT & CHIEF
OPERATING OFFICER



ADAM LAPONIS
CHIEF FINANCIAL
OFFICER



PAULA GREEN
SVP, HUMAN RESOURCES



SHANI MAMAN
VP, SUPPLY CHAIN



JAMES DIGGANS
DISTINGUISHED
SCIENTIST,
BIOINFORMATICS &
BIOSECURITY



SANJAY AHUJA
VP, REGULATORY
AFFAIRS & QUALITY



JIMMY JIN
VP, MARKETING



KRISTIN BUTCHER
SENIOR SCIENTIST



SIYUAN CHEN
CHIEF TECHNOLOGY
OFFICER



DENNIS CHO
CHIEF LEGAL OFFICER &
CORPORATE SECRETARY



JUDY YAN
ASSISTANT GENERAL
COUNSEL, CORPORATE,
REGULATORY



BILL BANYAI
SVP, ADVANCED
TECHNOLOGY &
GM DATA STORAGE



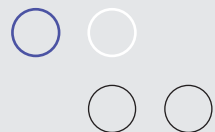
JENNIFER WALKER
GM, IN VIVO ANTIBODY
DISCOVERY OPS



QUINNE ANDERSON
DIRECTOR, CUSTOMER
SUCCESS & EXPERIENCE



ROD WALSTON
MANAGER, FACILITIES



Twist Bioscience Participates in the UN Global Compact

Twist Bioscience joined the United Nations Global Compact (UNGC) in October 2022, and we remain committed to our ongoing pledge to support the Ten Principles of the United Nations Global Compact (UNGC) on human rights, labor, environment, and anti-corruption.

Specifically, we committed to advancing support for the following Sustainable Development Goals (SDGs):

2 ZERO HUNGER



Using synthetic DNA, Twist technology contributes significantly to achieving the zero hunger SDG by engineering crops for improved resilience and sustainability. This enhances food security, improves nutrition, and promotes sustainable agriculture. By making plants more resistant to pests and extreme weather and reducing reliance on fertilizers, Twist synthetic DNA tools help ensure a stable and nutritious food supply while minimizing environmental impact.

5 GENDER EQUALITY



At Twist, we are committed to building an inclusive company where all gender identities are recognized and celebrated. 33% of our executive team and 42% of our total workforce identify as women. 43% of Women at Twist are in revenue-generating positions.

3 GOOD HEALTH AND WELL-BEING



Reducing pesticide reliance with synthetic DNA not only lowers environmental pollutants, but it also enhances community health. Additionally, synthetic DNA can help replace plastic with proteins, offering an eco-friendly alternative. In healthcare, synthetic DNA plays a crucial role in developing therapeutics and NGS applications, aiding in disease detection and monitoring. During public health crises like COVID-19, mpox and the H5N1 bird flu, Twist provides synthetic positive controls to ensure the accuracy of diagnostic tests, enable development of therapeutic treatments and accelerate research.

12 RESPONSIBLE CONSUMPTION AND PRODUCTION



At Twist, we prioritize reducing waste in every possible way. Our labs embrace recycling programs, with our efforts recognized multiple years in a row through the Kimberly-Clark Greenovation Award for diverting over 28,000 lbs. of gloves from landfills since we began this program (through May 2024). Our platform minimizes the chemical reaction size needed to create DNA, cutting reagent usage by 99.8% compared to traditional methods. Additionally, we produce only the required amount of DNA, eliminating the need to discard excess oligonucleotides in the gene synthesis process.



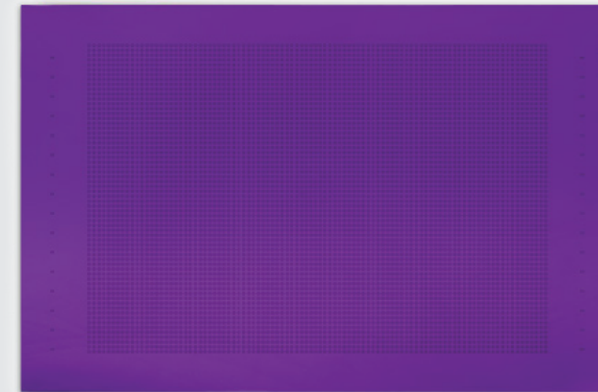
SECTION 2

**OUR COMMITMENT
TO THE PLANET
AND ENVIRONMENT**

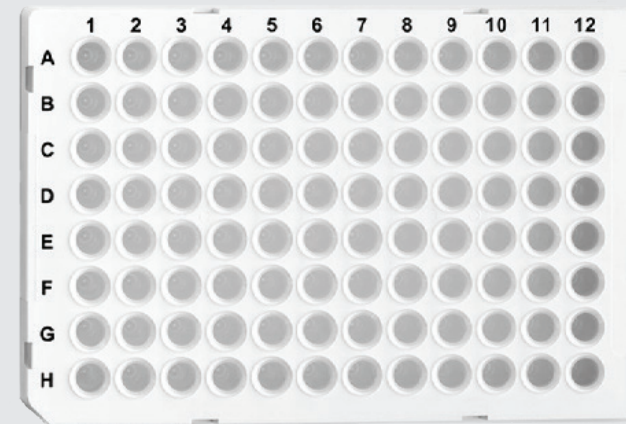
Sustainability is in our DNA

At Twist Bioscience, our corporate vision is to make synthetic DNA to improve health and sustainability. We recognize our crucial role in shaping a positive and prosperous future for our world and its inhabitants, remaining steadfast in our commitment to our mission: working in service of our customers who are changing the world for the better.

In line with this vision, we have made significant investments in our technology to ensure that our processes are not only innovative, but they are also environmentally sustainable. In 2023, we conducted an analysis of the total carbon footprint involved in manufacturing a single gene using our silicon plate technology. The results were striking: one gene manufactured at Twist emits just 0.036 kg of CO₂e. In stark contrast, the traditional 96-well plate approaches emit up to 23 kg of CO₂e per gene. These calculations were validated by SRI Quality System Registrar in the United States and Silinnov Consulting in France.



TWIST SILICON PLATFORM
MAKES 9,600 GENES



96-WELL PLATE
MAKES 1 GENE

To put this into perspective, consider the scale of our operations. In FY23, Twist Bioscience manufactured 634,000 genes. The carbon footprint (22,802 kg CO₂e) of this production using our technology was the equivalent of 58,318 miles driven by an average gasoline-powered passenger vehicle in one year, or 2,566 gallons of gasoline consumed. If we had used the industry standard 96-well plate approach, the carbon footprint would have been equivalent to 1,639,248 gallons of gasoline consumed in one year, or 37,258,626 miles driven by an average gasoline-powered passenger vehicle. That would be the equivalent of driving around the globe more than 4,700 times.

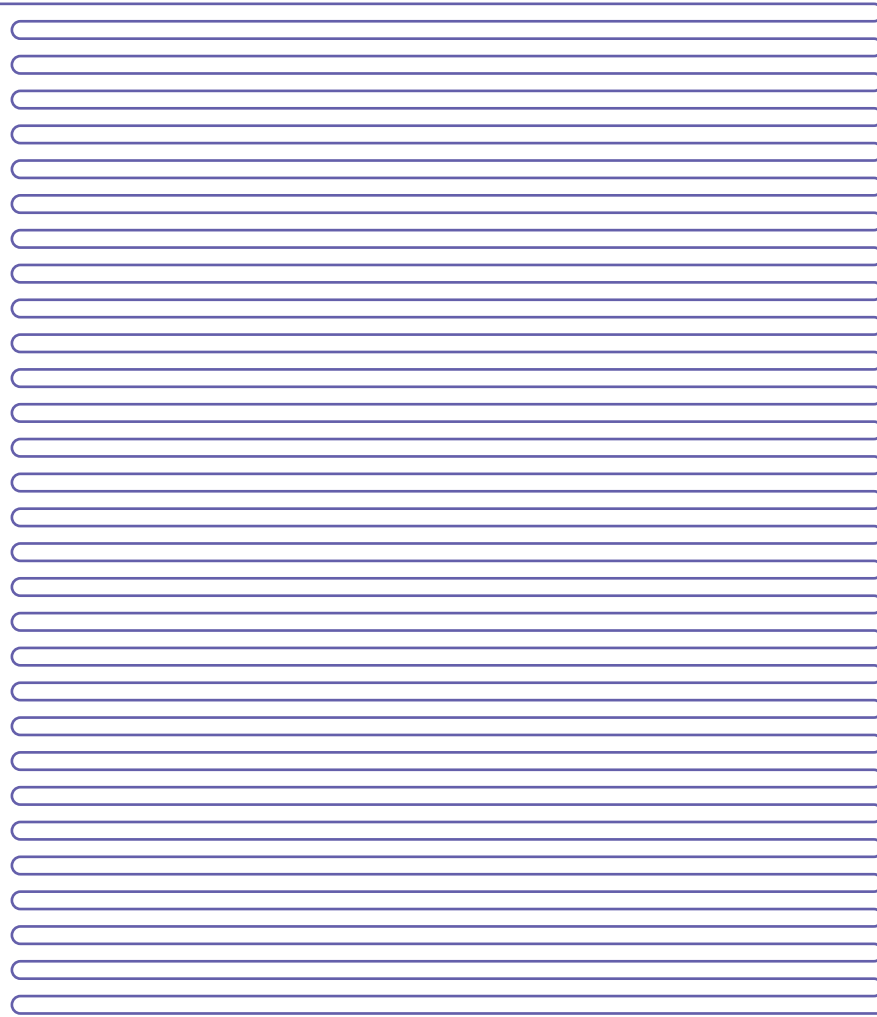
As a company, we did not want to stop at calculating the carbon footprint of manufacturing our genes. In 2024, we took this further and calculated the carbon footprint of our oligo manufacturing process specific to our NGS target enrichment panels. The findings were, again, stunning. The chemicals used in Twist's NGS target enrichment panel production for a full year (FY23) generated 180,000 kgs. of CO₂e emissions. In contrast, using the industry standard* chemical volumes and approach to manufacture the equivalent number of NGS target enrichment panels would have generated a massive 470,000,000 kgs. of CO₂e. And as with our gene manufacturing carbon footprint validations, these calculations were validated by SRI Quality System Registrar in the United States.

* Calculated Twist internal data using Dr. Oligo benchmark January 2021

Manufacturing **one gene** is equivalent to driving:



TWIST BIOSCIENCE
0.092 miles (0.15 km)



STANDARD 96-WELL
PLATE APPROACH

59 miles

(95 km)



1 horizontal line = 1 mile driven

From the EPA Greenhouse Gas Equivalencies Calculator EPA 2024

Manufacturing **one year's worth of genes** is equivalent to the yearly energy use of:

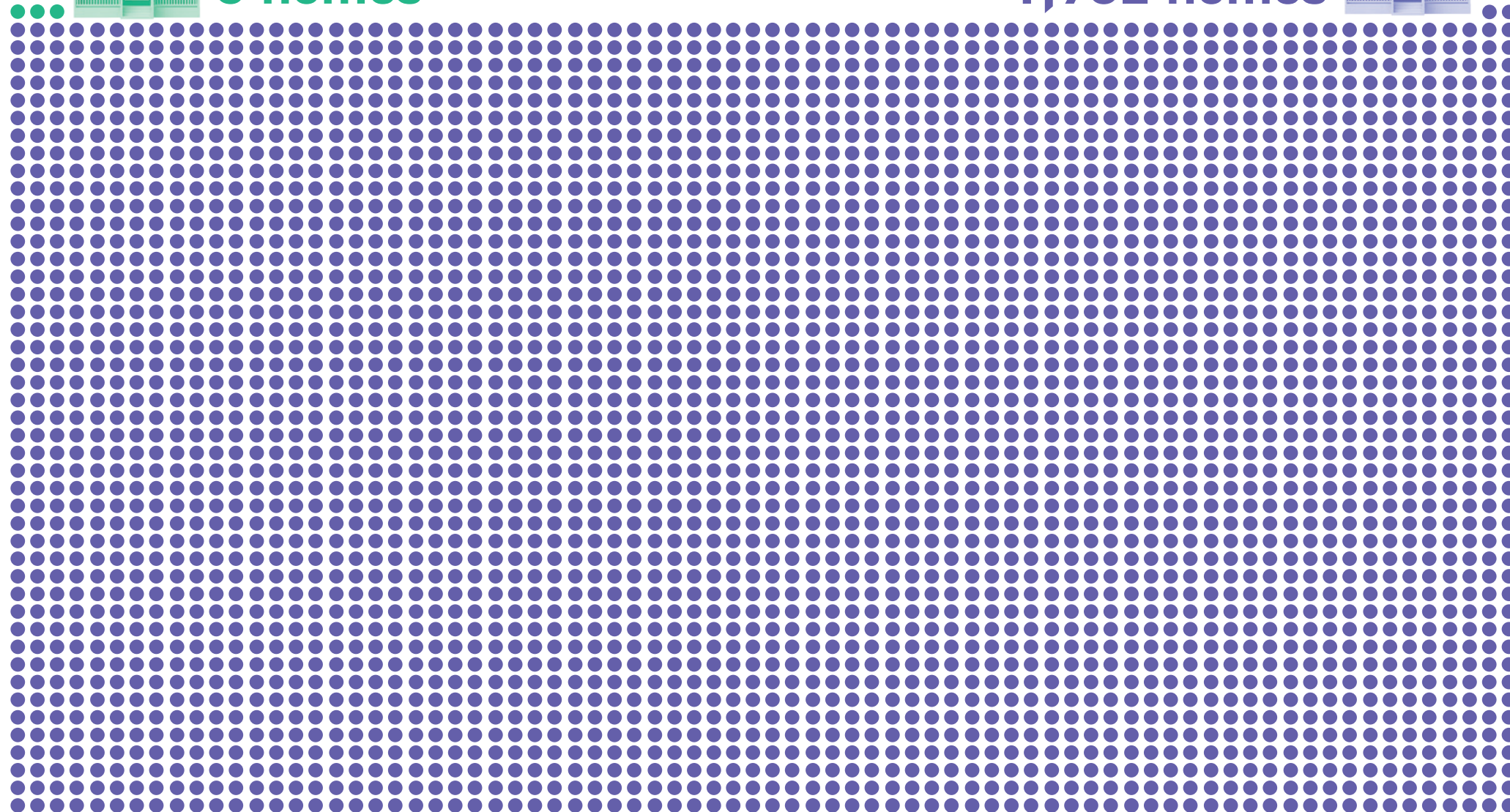


TWIST BIOSCIENCE

3 homes

STANDARD 96-WELL PLATE APPROACH

1,902 homes



Our proprietary process and dedication to sustainability not only reduce our carbon footprint, but they also make Twist the sustainable choice for our customers. We are proud to support our customers in their endeavors to create positive change while also contributing to a more sustainable future for all.

For the first time in our 11-year history, we are proud to disclose our company's Scope 1 and Scope 2 emissions (*please see appendix*).

Manufacturing **one gene** is equivalent to burning:

TWIST BIOSCIENCE

 **0.04 lbs of coal**
(0.018 kg)

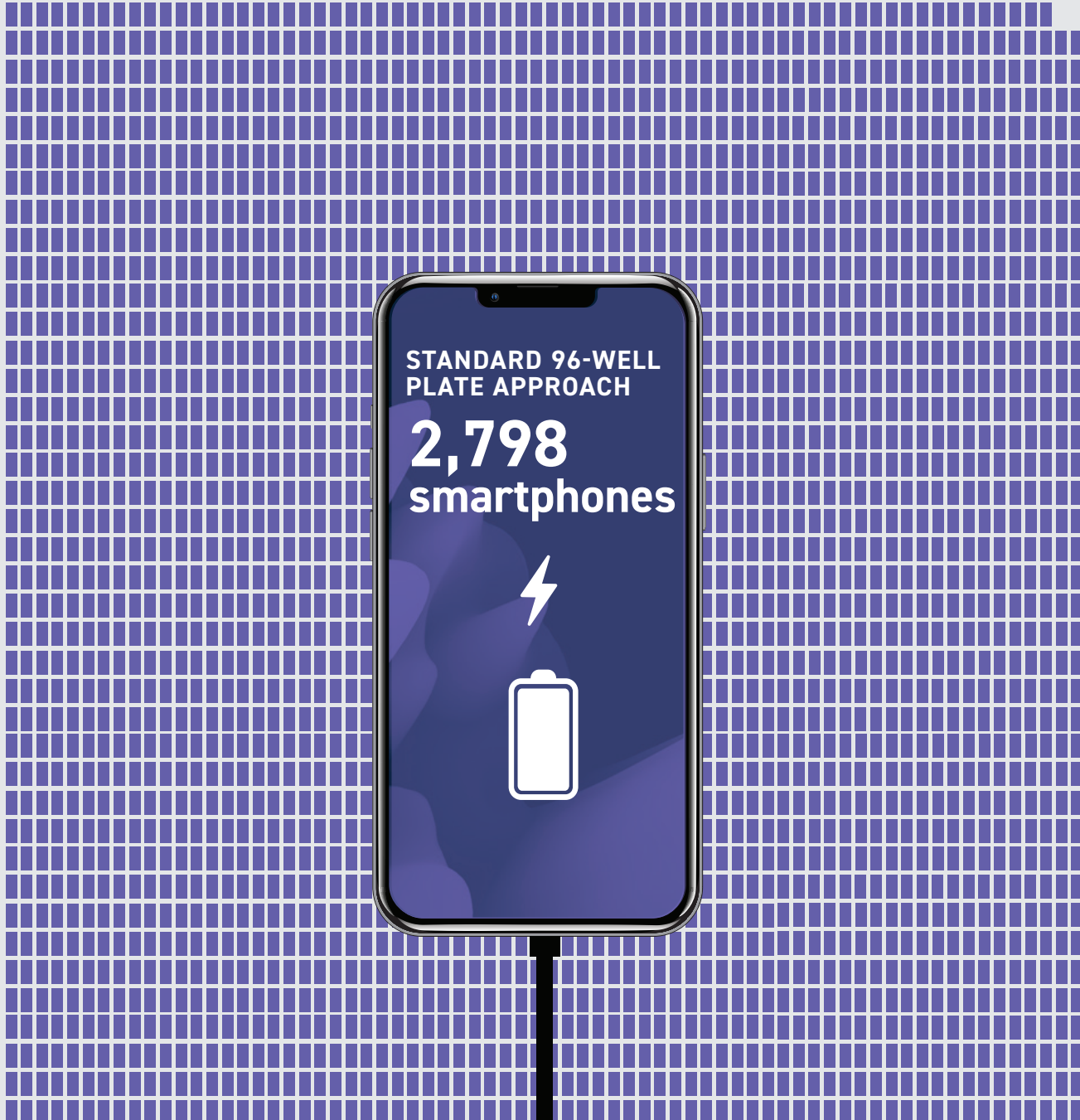
STANDARD 96-WELL PLATE APPROACH

25.8 lbs of coal
(11.7 kg)

Graphic showing the proportional difference between these two amounts.

From the EPA Greenhouse Gas Equivalencies Calculator EPA 2024

Manufacturing **one gene** is equivalent to charging:



1 bar = 1 charged smartphone

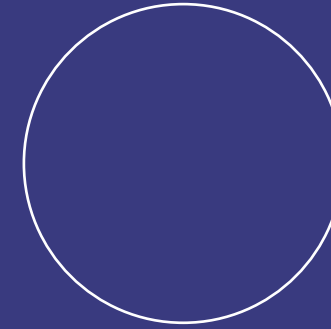
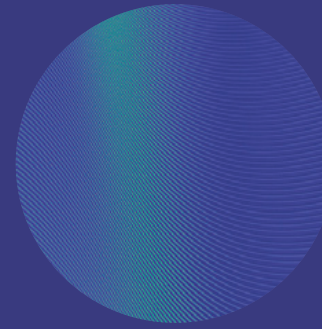
From the EPA Greenhouse Gas Equivalencies Calculator EPA 2024

What is a carbon footprint?

A carbon footprint, as defined by the United States Environmental Protection Agency, is the total amount of greenhouse gasses emitted into the atmosphere by an individual, organization, or company. Various activities contribute to a carbon footprint, including electricity usage, manufacturing processes, commuting, and many others. Understanding a carbon footprint is crucial for recognizing how various activities contribute to climate change.

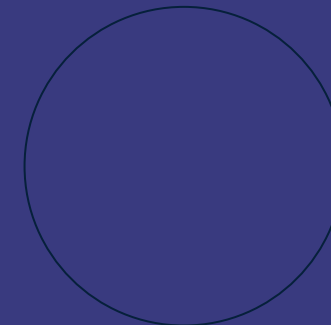
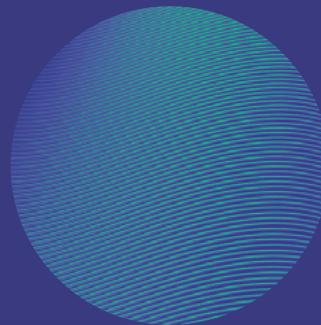
What is a chemical footprint?

Every company has a chemical footprint, which signifies the total volume of chemicals utilized by an event, organization, service, building, or product. Minimizing the use of toxic or environmentally harmful chemicals throughout supply chains reduces hazardous waste, ensures a safer workplace for employees and fosters a cleaner environment for the planet.



“Nature is telling us that we are on an unsustainable path, and it’s time to course-correct to reconcile the creature comforts of human civilization with the natural world.”

**EMILY LEPROUST, PH.D.
CEO AND CO-FOUNDER, TWIST BIOSCIENCE**





Chemicals used in our workflow

At Twist Bioscience, we excel in DNA synthesis. To manufacture our synthetic DNA, we rely on using phosphoramidite chemistry. For a detailed explanation of this process, [please visit our blog](#).

6 MAIN COMPONENTS USED IN OUR WORKFLOW

Phosphoramidites	The building blocks of synthetic DNA
Activator	Activates the new phosphoramidite for addition to the growing DNA strand
Capping Reagents	Blocks off any DNA molecules that did not react as intended in the previous cycle
Oxidizer	Forms a more stable chemical linkage between the newly added base and the growing DNA strand
Deblock	Removes protective chemical groups on the end of growing DNA strand to enable next cycle
Wash	Removes active chemicals from the surface between steps, minimizing unintended reactions

Continuous process improvements

At Twist, we remain committed to continuously improving our own processes to better serve our customers who conduct groundbreaking research and transform the world across different industries, as well as to increase the sustainability of our products.

This year, we announced that our Twist Express Genes now include midiprep (10 µg to 100 µg) and maxiprep (100 µg to 1 mg) DNA preparations with a turnaround starting at five business days. By offering rapid gene synthesis at all gene prep scales, we are streamlining processes for our customers, enabling accelerated cutting-edge research.

Internally, we made significant strides in our commitment to sustainability. We have fully automated critical parts of our NGS Panel manufacturing process to completely eliminate excess waste that resulted from consumables in the old manual process (plastic tips).

This year, we have also evaluated our lab consumption and launched multiple initiatives to reduce waste, scale our output and improve quality within our products. (Increased utilization by more than double for one key chemical.)



Recycling Programs at Twist

Oversight

Twist is dedicated to sustainability beyond its DNA synthesis platform, recognizing the critical need to minimize waste throughout the supply chain. By using miniaturized chemistry, the company significantly reduces its chemical footprint while scaling the DNA synthesis process. In addition, Twist believes that achieving a sustainable future requires going beyond products to address the challenge of sustainable science by recycling plastic gloves and personal protective equipment (PPE), reducing plastic waste in labs and more.

The RightCycle™ Program

Since 2019, Twist has partnered with The RightCycle™ Program from Kimberly-Clark Professional to recycle nitrile gloves. Gloves are collected in designated reusable bins and shipped in recycled boxes to processing facilities, where they are transformed into new pellets for other consumer products including Adirondack chairs.

By June 2024, this program successfully diverted over 24,795 pounds of plastic waste from landfills. In January 2024, we expanded the recycling program to include other forms of PPE to continue to improve our company's waste reduction efforts.

As a result of our diligent efforts, Twist received the Kimberly-Clark Professional Greenovation Award in 2020, 2021, 2022, 2023 and 2024, recognizing our waste diversion achievements. Twist takes pride in this program and aims to inspire similar initiatives for a more sustainable future.

Twist has diverted **24,795 lbs of plastic waste** by recycling gloves.

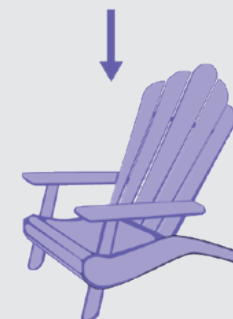
How Twist's partnership with The RightCycle™ Program works:



Gloves and eligible PPE are collected at Twist



They are taken to a recycling center and processed into plastic pellets



Raw materials are molded into new consumer products

Partnership with Polycarbin

In September 2022, Twist partnered with Polycarbin to recycle plastic tip boxes used in our R&D labs in South San Francisco. Subsequently, we expanded this program to include our Wilsonville, OR, and Quincy, MA, facilities.

As of June 15, 2024, we have achieved the following:

- Diverted **6,171 kg of single-use scientific plastic** from landfills.
- Circularized **4,935 kg of plastic** into next-generation laboratory consumables.
- Supplanted **269 kg of crude oil equivalents** by purchasing Polycarbin products.
- Reduced **572 kg total CO₂e** by purchasing Polycarbin products.
- Conserved **56,681,923 liters of water** through closed loop recycling.

These metrics highlight the impact of our ongoing efforts with Polycarbin and our strong commitment to the planet and the environment.

Additionally, by engaging in Polycarbin's circular economy, Twist Bioscience reduced emissions by another 37,685 kg of combined total CO₂e reduced through sustainable procurement practices.* We remain committed to seeking further opportunities where our operations can positively impact the environment.

* Calculated Twist internal data using Dr. Oligo benchmark January 2021

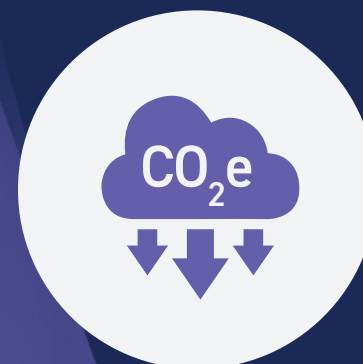
Since 2022, Twist has:



Conserved
56,681,923
liters of water



Diverted
6,171
kg of plastic
from landfills



Reduced
572
kg total of CO₂e

Sustainable packaging

As we continue to seek further opportunities where we can make a positive impact on the environment, in 2023, Twist Bioscience partnered with Veritiv to adopt more sustainable packaging for our product shipments. We now utilize highly efficient coolers that require less dry ice. Our boxes contain 50% recycled material and are recyclable.



The background features a complex pattern of wavy, concentric lines in shades of blue and green, creating a sense of depth and movement. Several circles are overlaid on this pattern: a white circle in the top right, a solid green circle in the center, and a white outline circle in the top left. The overall aesthetic is modern and dynamic.

SECTION 3

**OUR COMMITMENT
TO PEOPLE AND
OUR COMMUNITIES**

Diversity is in our DNA

At Twist, we believe our people are our greatest asset. We invest our financial and personnel resources to attract, train, develop and retain a diverse global workforce. We remain fully committed to fostering a diverse, inclusive and safe work environment, ensuring that all our employees feel respected, valued, and able to bring their best selves to work every day, regardless of gender, age, race, ethnicity, national origin, sexual orientation, identity, disability, education, or any other distinguishing characteristic. We provide equal employment opportunities and advancement to all our employees, recognizing the unique perspectives and experiences that diverse backgrounds bring to our Board, leadership and workforce.

We invest our financial and personnel resources to attract, train, develop and retain a diverse global workforce.



Human capital management

Oversight

We have a dedicated team of 19 full-time professionals managing all aspects of our human resources, including employee attraction, retention, and motivation. We are constantly exploring new opportunities and methods to recruit talented individuals.

At the Board level, our Compensation Committee oversees human capital management and receives quarterly reports from our Senior Vice President of Human Resources. Additionally, our executive team regularly receives updates on our employees.

A great place to work

To emphasize diversity in our recruitment efforts, we have formed partnerships with community colleges in California, Oregon, and Massachusetts. These collaborations involve hiring students from their programs, supporting the Bioscience Development Hub project, and serving on the Advising Committee to help shape the biotech curriculum, leaders, community and industry trade organizations.



Building the future workforce

At Twist, we prioritize building a diverse future workforce through engaging youth, building strong educational partnerships, and collaborating with workforce development leaders, community and industry trade organizations.

Our aim for 2024/2025 to address workforce development is to implement an apprenticeship program (Access Bio Apprenticeship) in collaboration with Oregon Biosciences Association. We have been active in providing guidance for the overall curriculum and will launch our first group of apprentices in the summer of 2024. We continue to partner with local organizations, universities and community colleges to further increase our diversity hiring efforts across professional roles.

Partnership with Eastside.org

We are proud partners with Eastside.org for the Eastside Internship Program, which resulted in access to a diverse, deep talent pool and successful hire of a talented HR intern. This intern converted into a full-time employee in July 2024.

Eastside is a college preparatory program focused on working with historically underrepresented populations, offering a rigorous curriculum while providing extensive educational coaching, career development opportunities, and support for students throughout their high school and college careers. Ninety eight percent of participating students are first-generation college students.



Mentorship

In addition to engagement with colleges and technical programs, members of our executive and management team participate in mentoring programs, including Nucleate Bio, Massachusetts Institute of Technology (MIT), Oregon Health and Science University (OHSU) Innovation Day, and Korea Advanced Institute of Science and Technology.

Leadership and development

Our diverse workforce provides a major advantage, allowing us to attract a broad spectrum of candidates. We believe that the diversity of our people is our greatest strength, driving our innovation and engagement. After joining our team, we prioritize our employees' growth and development. We focus on promoting from within whenever possible, emphasizing the development of cultural agility and effective communication.

Strategy

At Twist Bioscience, we invest financial and human resources to cultivate the talent required to sustain our leadership in innovation and to be an employer of choice. We evaluate performance with a management system that aligns closely with our core principles, placing significant emphasis on fostering continuous learning and development, particularly during our annual formal performance reviews. We actively promote cross-team communication and foster integrated departmental collaboration to expand our employees' skill sets and create avenues for growth and progression. Additionally, we provide a robust one-year leadership program tailored for mid-level managers, aiming to nurture our future leaders.

Twist offers up to \$5,250 per year in tuition reimbursement to support employee growth and career development. We have also invested in an online learning platform with on-demand, video-based content for skill refinement and software exploration, alongside implementing a platform for creating development plans during performance reviews.

In the last fiscal year, Twist invested over \$220,000 in employee learning, training, and development, providing self-directed learning to all employees and leadership development coaching to 158 leaders. As a company, Twist aims to increase this expenditure by 10% by 2025, showcasing a strong commitment to professional and leadership development.



Diversity, equity, inclusion and belonging

At Twist Bioscience, we wholeheartedly embrace diversity as an integral aspect of our identity. Diversity to us encompasses gender, race, culture, sexual orientation, physical and mental abilities, and more. Our workforce represents over 25 countries, bringing a wealth of experiences and perspectives that enhance our company's fabric. We strongly believe that diverse teams foster better business outcomes by encouraging constructive challenges and tapping into a broader spectrum of ideas, leading to optimal solutions.

Strategy

We prioritize creating an inclusive workplace that values diversity and embraces equitable practices to support underrepresented groups. Our dedication to diversity spans recruitment, retention, learning, engagement, and community collaborations. To foster dialogue and understanding among diverse backgrounds, we organize monthly Culture Conversations. These sessions delve into various topics, including disability, LGBTQIA+ identity, ageism, and Hispanic/Latino identity. Our goal is to honor each person's unique experiences and challenge stereotypes rooted in singular characteristics. Additionally, we actively engage with underrepresented groups through targeted recruitment and partnerships with local community colleges.

We are steadfast in our commitment to prevent workplace harassment, ensuring all employees and managers undergo annual training on recognizing and addressing unwelcome behavior in a respectful manner.

Moreover, we invest in STEM education across age and demographic lines, fostering career pathways in synthetic biology. Twist Bioscience is dedicated to advancing diversity and inclusion by facilitating career progression for female and underrepresented employees while prioritizing diverse talent acquisition for leadership roles.

We strongly believe that diverse teams foster better business outcomes by encouraging constructive challenges and tapping into a broader spectrum of ideas, leading to optimal solutions.

Women at Twist by the numbers

At Twist, we are proud of our dedication to gender equality, fostering an environment where women have equal opportunities for advancement. Women hold significant representation across all levels of our company, including leadership roles. Our Board of Directors includes 33% women, and as of September 30, 2023 (our fiscal year end), 42% of our executive team are women. Furthermore, women occupy numerous revenue-generating positions, underscoring our commitment to achieving gender parity across our organization.

Women at Twist are:



33%
of VP and higher positions
(VP, Senior VP, and Executive)

43%
of revenue-generating positions

40%
of management positions

41%
of mid-level positions
(Supervisor to Senior Manager)

37%
of senior management positions
(Director and Senior Director)

Race and ethnicity at Twist by the numbers

Since our founding, the Twist leadership team has prioritized cultivating a diverse culture, recognizing the invaluable contributions of varied cultural experiences in our endeavors to construct impactful and innovative teams. In September 30, 2023 (our fiscal year end), 56% of our U.S. organization identified as an individual of color, with 24% of the U.S. employee base identifying as women of color.

Our unwavering commitment to diversity education empowers all members of our company to embrace inclusivity and allyship, fostering a sense of belonging for underrepresented communities within Twist.

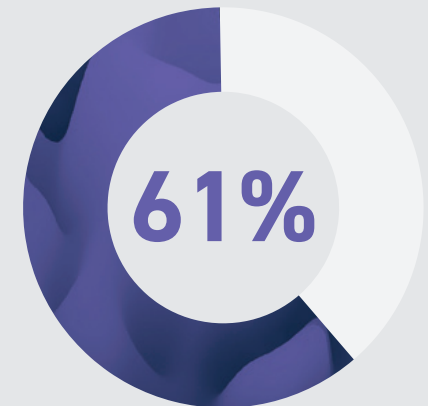
Our diversity metrics reflect our dedication, with 11% Hispanic/Latino, 2% Black or African American, 1% Native Hawaiian/Pacific Islander, 34% Asian, 6% as Two or More Races, and 0.5% American Indian/Alaskan Native individuals contributing to our vibrant workforce. Racial representation is evident across all levels and departments.

Moving forward, we remain committed to monitoring our involvement in leadership development initiatives and advancing diversity within our leadership.

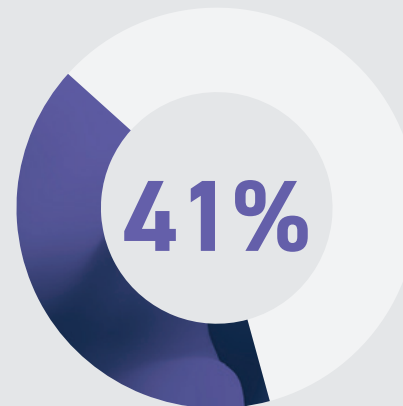
People of color at Twist are:



of our organization



of mid-level managers



of senior positions



of VP and higher positions

RACE AND ETHNICITY AT TWIST	TOTAL EMPLOYEES	MID-LEVEL MANAGERS	SENIOR POSITIONS	VP AND HIGHER POSITIONS	REVENUE GENERATING POSITIONS
Hispanic/Latino	11%	10%	3%	4%	9%
White	44%	40%	59%	57%	67%
Two or More Races	6%	7%	3%	0%	5%
Black or African American	2%	1%	2%	4%	4%
Native Hawaiian or Pacific Islander	1%	3%	2%	0%	0%
Asian	34%	38%	31%	30%	15%
American Indian or Alaskan Native	0.5%	1%	0%	4%	0%
Women of Color	24%	27%	19%	9%	16%
Men of Color	32%	34%	22%	35%	16%
Total People of Color	56%	61%	41%	44%	32%

Data as of September 30, 2023

NOTES

1. There are limitations in the way the federal government collects race/ethnicity data. For example, individuals may identify as Hispanic/Latino and an additional race/ethnicity, but may only be reflected as Hispanic/Latino in the data.
2. People of color includes Hispanic/Latino, Black or African American, Native Hawaiian or Pacific Islander, Asian, American Indian or Alaskan Native, and Two or More Races.
3. Data on this page for US employee base only.

Employee engagement

Oversight

Twist Bioscience conducts an annual employee engagement survey to gauge cultural alignment and coherence. This survey assesses how well the company's culture aligns with employees' behaviors and how these behaviors contribute to organizational success.

In a recent survey, 83% of Twist employees participated, with the following key findings:

- **92%** understand the Twist mission.
- **93%** understand how their individual goals contribute to Twist objectives.
- **90%** understand how their contributions align with the company's mission.



Strategy

Our executive leadership team pinpointed department-specific initiatives following insights from our annual employee engagement survey. Each executive oversees a key objective in line with their department's aims, contributing to our ongoing efforts to enhance employee engagement.

To nurture open dialogue and involvement, Twist holds:

- All employee meetings 2x per month led by the CEO or President.
- Monthly manager meetings for all people managers led by the CEO or President.

Additionally, we maintain a dynamic intranet platform delivering regular updates on company happenings and events. Our intranet, "The Strand" serves as a go-to hub for Twisters seeking up-to-date information on all fronts.

** Calculated Twist internal data using Dr. Oligo benchmark January 2021*

Compensation and benefits, health and wellness

Oversight

We are dedicated to providing a comprehensive total rewards package that addresses the diverse needs of our employees. Our package includes competitive pay rates exceeding living wages, comprehensive healthcare benefits fully covering employees with 90% coverage for family members, fully funded health savings accounts for employees and their families, approximately four weeks of paid vacation, a minimum of four months of parental leave for all global employees, flexible work schedules, commuter benefits, and onsite services.

Moreover, we offer every full-time employee, both exempt and non-exempt, equity in the company through Restricted Stock Units (RSUs) and our employee stock purchase plan.

Furthermore, to support our employees' fertility and family-building needs, we provide an expert-built educational platform with resources covering treatments, fostering, adoption, egg freezing, egg donation and support for LGBTQIA+ families and solo parents. We also prioritize employee well-being through stress monitoring and reduction programs, sleep and relaxation apps, meditation sessions, and telehealth services for mental health support.

Additionally, Twist introduced a matching contribution program for 401(k) retirement plans in January 2022, along with pension opportunities where available. Our executive leadership is committed to continually evaluating and enhancing our benefits to ensure optimal support for our employees.



Health and safety

Oversight

At Twist Bioscience, the safety and well-being of our employees are our top priorities. We have charters, policies, and plans in place to guide our Health and Safety program.

Strategy

Our strategy is to 1) engage all employees to help eliminate or minimize recognized workplace hazards, (2) collaborate and share lessons learned from workplace incidents to better protect employees, and (3) encourage and promote safe work behaviors through ongoing education and training.

Execution

We have EH&S professionals overseeing our three US-based manufacturing sites. Recent examples of improvements include (1) Employees trained to provide CPR/AED/First Aid at each site and (2) Automation of incident reporting and subsequent investigation.

INCIDENT RATE (TOTAL RECORDABLE INJURIES)	GOAL	2020	2021	2022	2023	INDUSTRY AVG
Site 1	0.00 [0]	0.28 [1]	0.25 [1]	0.76 [5]	0.52 [2]	0.90
Site 2	<1.00 [2]	—	—	0.00 [0]	1.28 [3]	2.00
Site 3	0.00 [0]	—	—	0.00 [0]	0.00 [0]	0.90

Employee Health and Safety Committee

To ensure workplace safety and adherence to safety policies, each site has an Employee Health and Safety Committee that meets quarterly and includes members from different departments. We also provide workplace harassment and sexual harassment training for all employees and managers.

Our community/philanthropy

Employee volunteer time off

As a company dedicated to social responsibility and encouraging our employees' philanthropic efforts, we are proud to announce that in fiscal year 2023, Twist employees volunteered a total of 1,143 hours for various causes and organizations they are passionate about. This achievement was made possible through our Volunteer Time Off program, which provides each employee with eight paid hours per year for volunteering.

Through our recent community partnerships, we are committed to increasing the number of employee-volunteered hours annually in the communities where we operate.

Life Science Cares

Twist is proud to be part of the Life Science Cares (LS Cares) initiative, a coalition of life science companies dedicated to addressing poverty and inequality in the San Francisco Bay Area, Boston, Philadelphia, and San Diego regions. Through this initiative, our employees have the opportunity to engage with impactful partner organizations. Moving forward, we will continue to collaborate with LS Cares to identify opportunities for involvement with organizations within their network. LS Cares focuses on addressing three fundamental gaps: survival, education, and sustainability.



Toy drive

This past holiday season Twist once again partnered with Life Science Cares to give back to the community with a STEM toy drive. The toys were donated to a Bay Area organization and distributed to late-elementary and middle school-aged children. While the toys were distributed in the Bay Area, all Twisters across geographies had the opportunity to donate. Our partner organization works to bridge the opportunity gap by bringing together diverse communities of schools, families, businesses, and volunteers to show students what's possible for their future, build their confidence and empower them to achieve and thrive.



International Genetically Engineered Machine (iGEM) Foundation

Twist Bioscience has been a strong supporter of iGEM, a global synthetic biology competition that originally focused on undergraduate students and has since expanded to include high school students, entrepreneurs, community laboratories, and beyond.

As a supporter, Twist revolutionized how iGEM competition teams contribute to the Registry of Standard Biological Parts, a free online database for synthetic biologists. Now, teams can submit their part sequences and documentation to the Registry, and Twist will synthesize samples of these parts for the upcoming year's competition. Twist offers each participating team up to 10 kb of synthetic DNA for their project.

Twist generously provided 807,128 total base pairs of DNA and 697 total genes, to 97 iGEM teams to support their projects in fiscal year 2023.






BioBuilder Program: Worcester, MA

Twisters engage with high school students enrolled in the Innovation Career Pathways Program to provide meaningful industry career connections. This program, funded by the Massachusetts Department of Elementary and Secondary Education, aims to expand career exploration for high school students in Worcester public schools.

In partnership with Worcester Public Schools and BioBuilder, the Innovation Pathways Program promotes career and technical skill readiness in Biotechnology and Biomanufacturing. The students applied their growing knowledge and technical skills to a semester-long lab experiment, integrating industry-standard professional practices and ways of thinking into their research.



Supporting effective educational programs through volunteer and mentoring opportunities

We have increased our collaborative efforts and partnerships with university and community colleges. Twist commits to sharing insightful industry perspectives with community college advisory boards to help shape and inform curricula and the development of career technical education programs. Twisters provide mentorship for students by participating in mock interviews, critiquing student resumes, hosting career panel discussions, providing industry presentations and facility tours.

SECTION 4

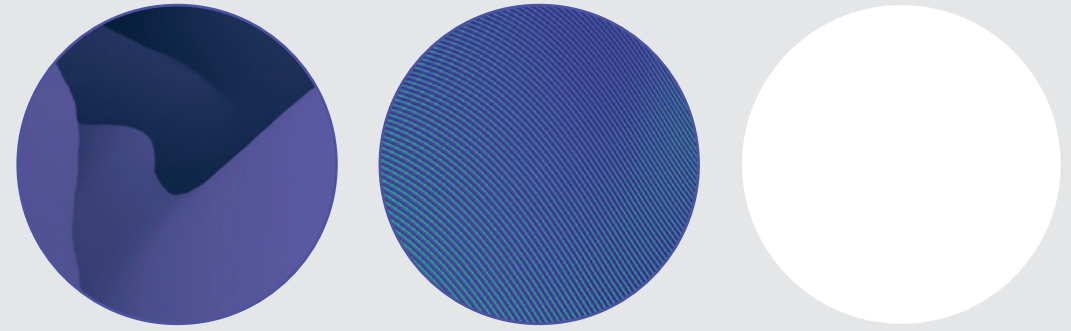
**OUR COMMITMENT
TO ETHICS AND
GOVERNANCE**

Guiding principles and business ethics

Our guiding principles are at the heart of our culture: Grit, Impact, Service, and Trust. These principles shape our approach to teamwork, facilitate constructive feedback, and reinforce our brand identity. Service is central to our operations and our relationships with colleagues and customers. We are dedicated to exceeding the expectations of both internal and external stakeholders.

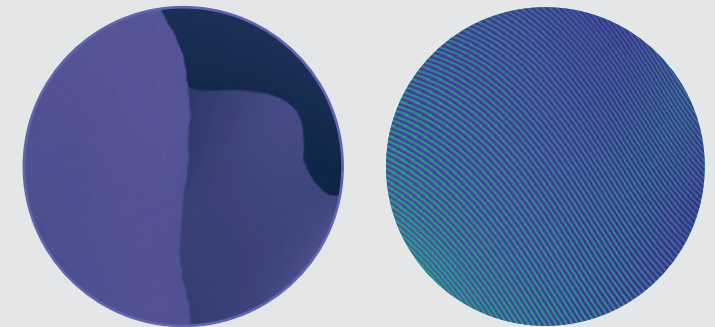
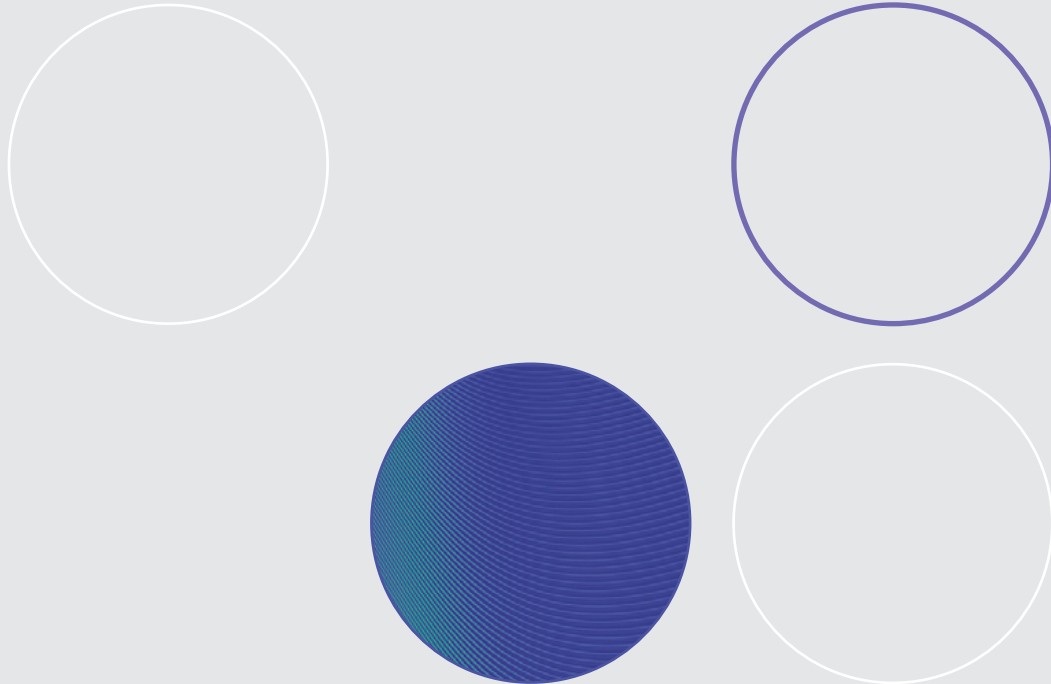
Government affairs

Twist Bioscience does not provide financial support to political campaigns, parties, or organizations.



“I believe that biology has the power to balance the competing needs of an expanding population while improving the world we live in today.”

**EMILY LEPROUST, PH.D.
CEO AND CO-FOUNDER, TWIST BIOSCIENCE**



Data protection and information security at Twist

Protecting customer and partner data is a critical responsibility and top priority at Twist. Our customers and partners trust us with confidential information that could become the basis of their intellectual property. For Twist, protecting critical customer data involves implementing robust security measures to safeguard sensitive and confidential information from unauthorized access, breaches and cyber threats as well as using encryption, secure storage systems, and strict access controls. We have established clear data handling policies, regularly train employees on security best practices, and stay compliant even ahead of relevant national and international data protection regulations. Regular security audits and updates to systems are essential to address emerging vulnerabilities.

Twist's Information Security program, like our [Quality](#), [Privacy](#) and [Biosecurity](#) programs, is built upon the foundation of international standards and is overseen by experts in the field and rigorously and continuously scrutinized.

Twist is ISO 27001-certified to the most up to date 2022 revision of the standard. An accredited, independent certification body audits Twist each year to make sure that all working parts of Information Security program — our People, our Processes, and our Technology — comply or exceed the standard. Our Board of Directors oversees all efforts at the highest level of the company.



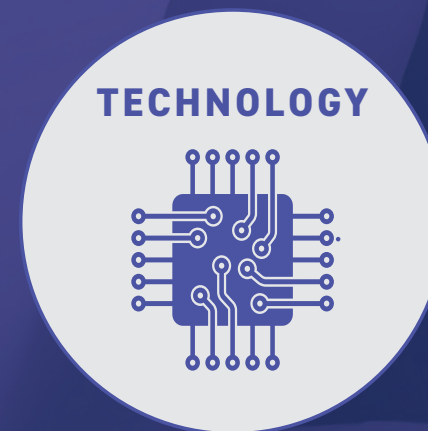
PEOPLE

- Executive sponsorship.
- User buy-in “security consciousness.”
- Change people’s behavior and thinking.
- Acquire security oriented skills.



PROCESS

- Governance.
- Policies and procedures.
- Compliance monitoring.
- Performance KPIs.



TECHNOLOGY

- Protective.
- Detective.
- Monitoring.
- Intelligent defensive technology (AI).

People

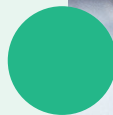
- All company employees are trained in our Cybersecurity Awareness program, which includes phishing and social engineering. The program includes yearly training, quarterly testing, and weekly informational campaigns to keep digital safety high in our team's consciousness.
- We perform employee background checks, clearly delineate roles and responsibilities, apply a strict philosophy of least privilege governing access control, and we build segregation of duties into our policies and operations.
- We partner with compliance experts, penetration testers, security operation center teams, law firms specializing cybersecurity, and national and global agencies including the Center for Internet Security (CIS), MITRE, the United States Computer Emergency Readiness Team (US-CERT), the Cybersecurity and Infrastructure Security Agency (CISA), and the Federal Bureau of Investigation (FBI).
- Our Executive Leadership Team (ELT), Audit Committee (AC), and Product Approval Committee (PAC) are all regularly briefed on the company's cybersecurity posture and provide guidance on strategy and priorities.
- The Board is briefed on our cybersecurity landscape and roadmap, maturity on a semi-annual basis.

Process

- Annual audits and re-certification for ISO 27001 to ensure data protection practices comply with applicable laws and cybersecurity best practices.
- Annual risk assessment run by Information Security team and sponsored by the CIO.
- Annual penetration testing performed by an accredited, third-party agency.
- Continuous vulnerability scanning and mitigation both in our code and in our services.
- Quarterly access control reviews for all significant Applications.
- Incident Response, Business Continuity, and Disaster Recovery policies and procedures to deal with cybersecurity incidents or natural disasters.
- Supply chain management with vendor selection security assessments and vendor assessments.
- Company privacy policy and privacy practices that are in line with applicable personal data protection laws and regulations.

Technology

- Production infrastructure housed in AWS SOC-audited [data centers](#).
- AI-driven endpoint protection and gateway security.
- Identity lifecycle management.
- Single Sign-On, Multi-factor Authentication, and VPN.
- Secrets and privileged access management.
- At-rest and in-transit encryption with KMS.
- Next-gen firewall technology, segmented networks, and certificate-based authentication.

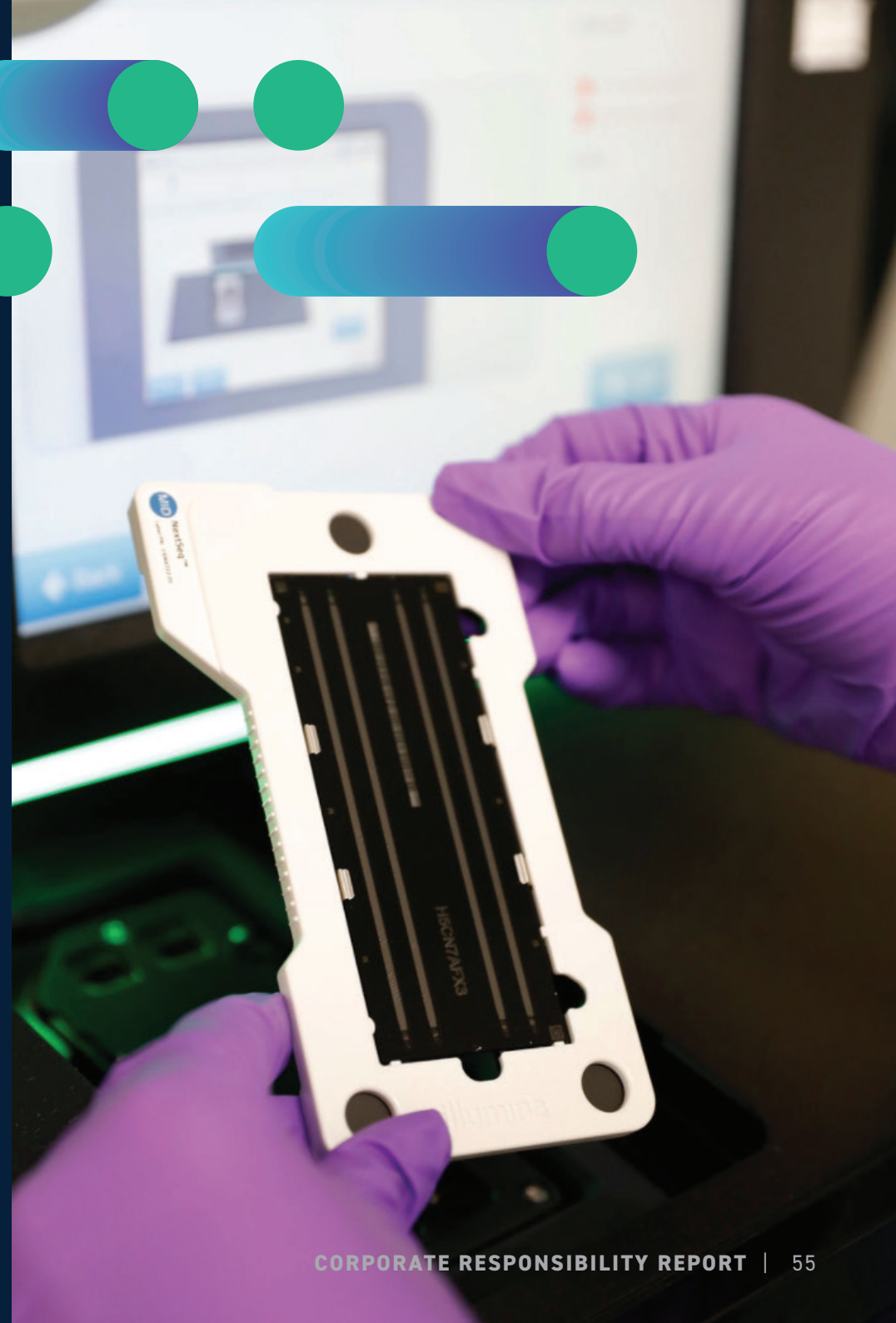


Biosecurity at Twist Bioscience

Twist Bioscience is a leading provider of synthetic DNA on a global scale and is committed to promoting responsible use of its products. To that end, the company has invested significant resources in developing and continuously improving a comprehensive biosecurity program. This program includes participation in national and international initiatives to enhance algorithms, metadata, and tools used by researchers to assess potential biological risks posed by specific DNA and protein sequences.

Twist understands the importance of advancing biosecurity as a core technology provider and strives to contribute to a safe biotechnology environment. The company has engaged- and collaborated with governments, academic institutions, international non-governmental organizations and other DNA synthesis providers to develop a set of consistent biosecurity best practices. As the field of biotechnology and synthetic biology continues to evolve, Twist remains active in writing the biosecurity playbook to ensure that appropriate safeguards are in place.

Twist Bioscience is a leading provider of synthetic DNA on a global scale and is committed to promoting responsible use of its products.



National and international regulations

To comply with all U.S. government guidance and regulations, Twist Bioscience implements strict biosecurity and export control screening measures to ensure that all orders are fulfilled appropriately. These measures include adhering to the Screening Framework Guidance for Providers and Users of Synthetic Nucleic Acids published in 2023 by the U.S. government and the Harmonized Screening Protocol established by the International Gene Synthesis Consortium. The U.S. Federal Select Agent Program (FSAP) is the primary regulatory framework governing the control of certain synthetic DNA sequences within the United States. In addition, as Twist Bioscience manufactures all products in the U.S. (Wilsonville, OR, and South San Francisco, CA), the sale of synthetic DNA is subject to compliance with the Export Administration Regulations (EAR) administered by the U.S. Department of Commerce, which dictates that certain nucleic acid sequences may require a license prior to export.

By adhering to these regulatory frameworks, Twist Bioscience ensures that DNA sequences that pose a significant risk if misused are not synthesized or shipped to organizations that may not use them responsibly.

Screening of sequences and customers

In order to avoid synthesis of potentially dangerous sequences, Twist Bioscience has implemented a comprehensive screening program. All double-stranded DNA sequences ordered are screened to identify whether they originate from an organism or toxin that is domestically or internationally controlled for possession. These controlled organisms or toxins include variola (which causes smallpox), dangerous strains of avian influenza, and other pathogens that pose a significant threat to animal, plant, or human health. Controlled organisms and toxins are highly regulated, and possession is restricted.

If a controlled sequence (or a portion thereof) is detected during screening, Twist Bioscience contacts the customer to verify customer identity and their intended use for the sequences, past publication record on similar research, and to ensure any required licenses are issued before shipment.

Moreover, Twist Bioscience uses various government lists, such as the U.S. Treasury Specially Designated Nationals list, the U.S. State Department Denied Parties List, and the Department of Commerce Entity List to screen each customer, ensuring that synthetic DNA is not sold to potentially dangerous individuals or organizations. Additionally, Twist confirms the validity of each organization to which they sell and requires customers to agree not to resell synthetic DNA produced by Twist Bioscience unless they have been licensed to do so under a specific contract.

Twist Bioscience only ships synthetic DNA to valid commercial addresses and will not ship to a residential address or a P.O. Box.

Staffing

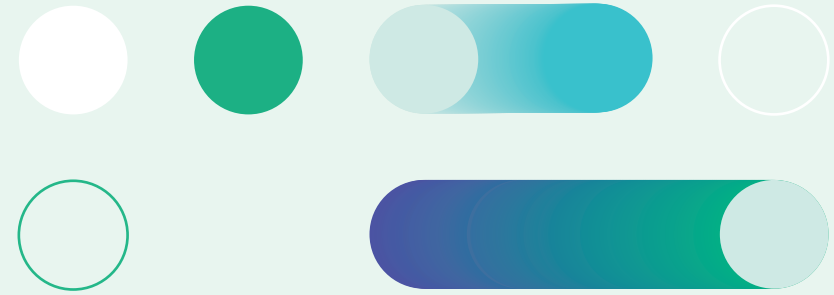
Twist Bioscience assigns human resources to ensure that its employees adhere to all the policies and procedures that are part of its biosecurity program and to address any concerns that may emerge. This team includes a Trade Compliance Manager, a Screening Manager, and a Biosecurity Response Team.

Reporting

Twist Bioscience collaborates with various governing and industry organizations to address biosecurity concerns. These organizations include the Federal Bureau of Investigation (FBI), the Centers for Disease Control and Prevention (CDC), the U.S. Commerce Department Bureau of Industry and Security, and the U.S. Department of Agriculture's Animal and Plant Health Inspection Service. Additionally, Twist is a member of, and currently chairs, the International Gene Synthesis Consortium (IGSC), an industry trade group consisting of more than 25 of the world's largest synthetic DNA manufacturers. IGSC members may use an existing mechanism to notify each other of suspicious orders received to prevent the ordering of dangerous DNA sequences from other vendors.

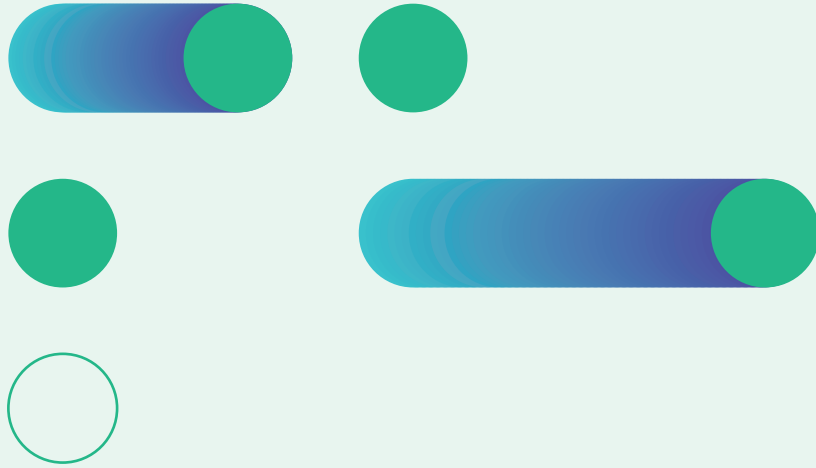
Record keeping

At Twist Bioscience, we have implemented internal policies that meet or exceed recommendations set out in the 2023 U.S. Department of Health & Human Services Screening Framework Guidance of Providers and Users of Synthetic Nucleic Acids with regard to retention of documentation for each biosecurity screening of a DNA sequence that has been ordered. Twist maintains this documentation for a period of at least eight years.

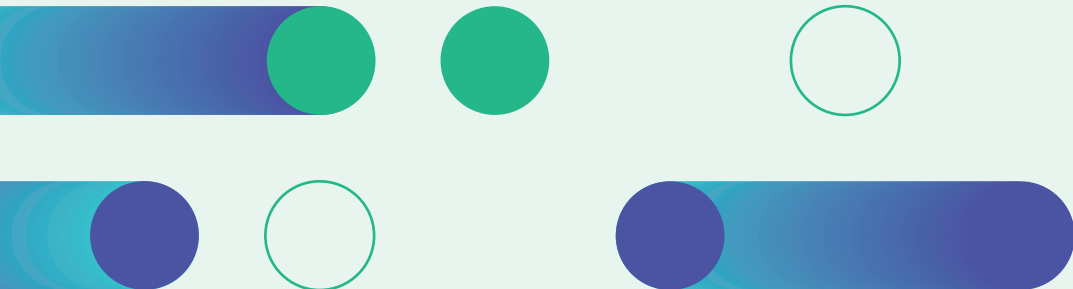


As the field of biotechnology and synthetic biology continues to evolve, Twist remains active in writing the biosecurity playbook to ensure that appropriate safeguards are in place.





We recognize that biosecurity is an ever-evolving field, and we strive to keep up with best practices and adapt to emerging concerns.



Red teaming

Twist Bioscience has challenged the effectiveness of its biosecurity program by engaging skilled consultants to attempt to breach its security measures, a practice commonly known as red teaming in cybersecurity. The consultants place real orders that are intended to deceive the screening process. Despite these attempts, none of the experts' obfuscation methods have succeeded, indicating that the biosecurity program implemented by Twist Bioscience is highly robust.

We recognize that biosecurity is an ever-evolving field, and we strive to keep up with best practices and adapt to emerging concerns. We believe that life sciences research has the potential to improve public health and emergency preparedness, and we encourage flexible governance to address new information and changing dynamics.

To ensure that our screening protocols meet or exceed best practices, we actively engage with leading experts and participate in programs, such as the Intelligence Advanced Research Projects Activity Functional Genomic and Computational Assessment of Threats program and supporting the International Biosecurity & Biosafety Initiative for Science (IBBIS).

While implementing these policies and procedures requires investment in both time and resources, we remain committed to advancing scientific research to benefit society. Synthetic biology has the potential to improve human health and the environment, and we are proud to provide high-quality synthetic DNA while maintaining disciplined biosecurity screening ensuring public safety.

In conclusion

In conclusion, at Twist, corporate responsibility isn't something we do in addition to our business—it's how we do business. It's driven by our pursuit of business excellence, market leadership, and long-term value creation. By letting our business drive our corporate responsibility, we align doing good with doing well.




**As we move forward, we will continue
#WritingTheFuture.**

* Calculated Twist internal data using Dr. Oligo benchmark January 2021

The background features a dark blue base with vibrant green and teal wavy lines that create a sense of motion and depth. Several circles are scattered across the scene: a large white circle in the top right, a solid green circle in the center, a white outline circle at the bottom, and several semi-transparent circles in various shades of blue and green. The overall aesthetic is modern and digital.

APPENDIX

Reporting frameworks: United Nations Sustainable Development Goals

SUSTAINABLE DEVELOPMENT GOAL	RESPONSE
<p>2 ZERO HUNGER</p> 	<p>Working in service of our customers: Twist’s customers are making plants more durable and reducing the need for pollutants, which enables sustainability and could provide greater and continued access to nutritious foods. Our customers are also engineering pests-resistant crops.</p> <p>Synthetic DNA applications: Agricultural biotechnology and animal health. Corporate Responsibility Report, pg. 15</p>
<p>3 GOOD HEALTH AND WELL-BEING</p> 	<p>Working in service of our customers: Twist Bioscience manufactures synthetic DNA for our customers to develop therapeutics and next-generation sequencing applications to detect and monitor diseases, as well as significant advances in research.</p> <p>Our products: 10-K, pgs. 5-7</p>
<p>5 GENDER EQUALITY</p> 	<p>Board of Directors Diversity Policy: LINK</p> <p>Diversity is in our DNA: Corporate Responsibility Report, pgs. 33-40</p>
<p>12 RESPONSIBLE CONSUMPTION AND PRODUCTION</p> 	<p>Sustainability is in our DNA: Corporate Responsibility Report, pgs. 23-31</p> <p>Kimberly-Clark Greenovation Award 2020, 2021, 2022, and 2023 for nitrile glove recycling.</p> <p>Supplier Code of Conduct: LINK</p>

Reporting frameworks: Energy consumption and carbon emissions

ENERGY CONSUMPTION AND CARBON EMISSIONS	2023
Energy consumption (MWh)	6,266.94
Natural gas (therms)	180,767.21
Diesel (gallons)	618.10
Scope 1 GHG emissions (metric tons CO₂e) ACROSS ALL U.S. SITES	6.27
Scope 2 GHG emissions (metric tons CO₂e) ACROSS ALL U.S. SITES	14,315



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